July 1, 2025

Regular City Council Meeting

Attachments for Agenda Item 3.D

Please contact the City Clerk's Office at (209) 831-6105 with any questions.

Summary of Proposed Impact Fees

Land Use	Water			Recycled Water	Parks		Public Safety			Public Facilities	Program Management Fee
	Distribution	Supply	Treatment		Neighborhood	Community	Fire	Police	Communication Facilities		
Residential (per SF)[1]											
Single Family Residential	$1.69	$0.93	$1.30	$0.87	$6.30	$2.21	$0.49	$1.01	$0.04	$2.52	5% of Master Plan Fees
Multi-Family Residential (Attached 2-4)	$2.31	$1.27	$1.78	$1.19	$8.41	$2.94	$0.65	$1.34	$0.05	$3.35	5% of Master Plan Fees
High Density Residential (Attached 4+)	$2.49	$1.37	$1.92	$1.28	$12.32	$4.31	$0.95	$1.96	$0.08	$4.90	5% of Master Plan Fees
Non-Residential (per 1,000 Bldg SF)[1]											
Office	$849	$466	$654	$436	n/a	n/a	$583	$1,209	$48	$508	5% of Master Plan Fees
Commercial	$1,447	$794	$1,115	$743	n/a	n/a	$352	$731	$29	$304	5% of Master Plan Fees
Industrial	$696	$382	$536	$357	n/a	n/a	$115	$239	$10	$102	5% of Master Plan Fees

[1] Residential fees rounded to the nearest hundredths. Non-Residential fees rounded to the nearest dollar.



Parks Impact Fee Nexus Study

City of Tracy
Master Plan Area

June 2025

Prepared for:

Prepared by:

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EXECUTIVE SUMMARY AND INTRODUCTORY SECTIONS

INTRODUCTION

The City of Tracy (City) is located in the Central Valley and is the second most populated city in San Joaquin County (County). The City spans an area of about 26 miles within a triangle formed by Interstate 205 to the north, Interstate 580 to the southwest, and Interstate 5 to the east. The City is located near both fertile and infertile agricultural lands, due to a region of hills west of Tracy. The City is a railroad town that came from the mid-19th century construction.

The City was founded in 1878 and incorporated as a city in 1910. The City of Tracy grew rapidly and prospered as the center of an agricultural area, even when larger railroad operations began to decline in the 1950s. Competition with trucking and automobiles resulted in widespread railroad restructuring. The City has its origins associated with the Central Pacific Railroad, which ran from Sacramento through Stockton to the San Francisco Bay area. The City's ties to the agriculture industry allowed for steady growth in early to mid-20th century but growth accelerated starting in the 1980's as the City served as an extended bedroom community to the San Francisco, Oakland, and Silicon Valley metropolitan areas.

The City is part of the San Jose-San Francisco-Oakland, California Combined Statistical Area, an extension of the Bay Area. At the time of the 2020 U.S. Census, the City population was 93,000. The California Department of Finance estimates that as of January 1, 2023, the City population is 95,615, incorporating the 2020 Census benchmark.

As the resident population and non-resident employment in the City increase, there exists a correlating rise in the demand for public infrastructure and services to support the increased demand on the City. California's Assembly Bill 1600 (AB 1600) adopted in 1987 and codified as California Government Code Section 66000 et. seq., allows the City to impose Development Impact Fees on new development within the City. Development Impact Fees (DIFs) are one-time charges on new development that are collected and used by the City to cover the cost of capital facilities, vehicles, and equipment that are required to serve new growth.

In April 2013, the City adopted the Parks Master Plan (New Developments) completed by MIG, Inc. Following the adoption of the Master Plan, the City hired Harris & Associates to complete the Parks Impact Fee Program (May 2013) and calculate the Parks Fee under AB1600. The Park Fee was adopted in January of 2014 along with other Master Plan Fees and established the fees for development in the new areas of the City that were not already covered in one of the City's existing fee programs. The Parks Fee is comprised of two components: Neighborhood Parks and Community Parks. In the years since, the City has applied an annual Engineering News Record (ENR) Construction Cost Index (CCI) increase to the fees but has not completed a comprehensive update.

In 2022, the City hired WRT to complete the City's Citywide Parks, Recreation, and Trails Master Plan Update (August 2022) (PRTMP) and adopted Resolution 2022-150 on October 4, 2022, approving the update. The purpose of this Nexus Study is to incorporate the findings from the completed PRTMP and update the Parks Fee Program to ensure that future park facilities will be constructed to serve new development.

The goal of the City is to develop a fee program that achieves the funding objectives required to fund facilities identified in the master plans, balances fee levels with desired economic growth, and complies with the legal requirements of Assembly Bill 1600 (AB 1600) and Assembly Bill 602 (AB 602).

NEXUS STUDY

Purpose

As development occurs in the City, new backbone infrastructure and capital facilities are required to mitigate the increased demand created by new residents and workers. DIFs fund this required backbone infrastructure and capital facilities as well as the related administrative costs through the City's fee program. The Master Plan fee program contains separate fee categories for each type of infrastructure and capital facilities. This Nexus Study updates the Parks Impact Fee.

This report is designed to satisfy AB 1600 Nexus requirements, AB 602 guidance, and provide the necessary technical analysis to support the adoption of the updated fees. The fees will be effective 60 days after the City's final action establishing and authorizing the collection of the fees.

Updated Fees

Pursuant to AB 602, residential development fees are to be assessed on a per square foot basis. Park Fees are not charged on non-residential land uses. **Table ES-1** shows the proposed updated Parks Impact Fees broken out between Neighborhood Park and Community Park.

Table ES-1: Proposed Parks Impact Fees

	Parks	
Land Use	**Neighborhood**	**Community**
Residential (per SF)		
Single Family Residential	$6.30	$2.21
Multi-Family Residential (Attached 2-4)	$8.41	$2.94
High Density Residential (Attached 4+)	$12.32	$4.31

Proposed Fees Comparison with Existing Fees

Table ES-2 compares the proposed total Parks Fees to the existing total Parks Fees (as of July 1, 2023). The existing Parks Fees per unit were converted to fees per square foot using the same unit size assumptions used for the proposed fees. The Program Management component of the existing Parks Fees was removed to provide an accurate comparison as the Program Management components of each Master Plan Fee has been consolidated into one Program Management standalone fee. Further information on the comparison is described within Section 2 of this report.

Table ES-2: Proposed Parks Fees Comparison to Existing Parks Fees

			Total Parks Fee		
Land Use	**Proposed Neighborhood Parks**	**Proposed Community Parks**	**Proposed Parks Fee**	**Existing Parks Fee[2]**	**Percent Change**
Residential (per SF) [1]					
Single Family Residential	$6.30	$2.21	$8.51	$4.11	107%
Multi-Family Residential (Attached 2-4)	$8.41	$2.94	$11.35	$5.60	103%
High Density Residential (Attached 4+)	$12.32	$4.31	$16.63	$7.21	131%

[1] Residential fee is calculated on habitable square footage.

[2] Program Management (5%) removed from Construction Cost of Existing Fee for an accurate comparison.

NEXUS STUDY REQUIREMENTS (ASSEMBLY BILL 1600)

AB 1600 was enacted by the State of California in 1987 creating the Mitigation Fee Act - Section 66000 et seq. of the Government Code. The Mitigation Fee Act requires that all public agencies satisfy the following requirements when establishing, increasing, or imposing a fee as a condition of approval of a development project:

1. Identify the purpose of the fee.
2. Identify the use to which the fee is to be put. If the use is financing public facilities, the facilities shall be identified.
3. Determine how there is a reasonable relationship between the fees use and the type of development project on which the fee is imposed.
4. Determine how there is a reasonable relationship between the need for the public facility and the type of development project on which the fee is imposed.
5. Determine how there is a reasonable relationship between the amount of the fee and the cost of the public facility or portion of the public facility attributable to the development on which the fee is imposed.

The purpose of this report is to demonstrate that the Parks Fees comply with the Mitigation Fee Act.

ASSEMBLY BILL 602

Assembly Bill (AB) 602, enacted by the State of California in 2021, amended Sections 65940.1 and 66019 of, and added Section 66016.5 to the Government Code. AB 602 requires that if a local agency conducts and adopts an impact fee nexus study after January 1, 2022, the local agency shall follow all of the following standards and practices:

1. Before the adoption of a development fee, an impact fee nexus study shall be adopted.
2. When applicable, the nexus study shall identify the existing level of service for each public facility, identify the proposed new level of service, and include an explanation of why the new level of service is appropriate.
3. A nexus study shall include information that supports the local agency's actions, as required by subdivision (a) of Section 66001 of the Government Code.
4. If a nexus study supports the increase of an existing fee, the local agency shall review the assumptions of the nexus study supporting the original fee and evaluate the amount of fees collected under the original fee.
5. A nexus study adopted after July 1, 2022, shall calculate a fee imposed on a housing development project proportionately to the square footage of proposed units of the development. A local agency that imposes a fee proportionately to the square footage of the proposed units of the development shall be deemed to have used a valid method to establish a reasonable relationship between the fee charged and the burden posed by the development. A nexus study is not required to comply with the requirements to calculate a fee imposed on a housing development project proportionally to the square footage of the proposed units if the local agency makes the following findings:
    - An explanation as to why square footage is not appropriate metric to calculate fees imposed on housing development project.
    - An explanation that an alternative basis of calculating the fee bears a reasonable relationship between the fee charged and the burden posed by the development.
    - That other policies in the fee structure support smaller developments, or otherwise ensure that smaller developments are not charged disproportionate fees.
6. Large jurisdictions shall adopt a capital improvement plan as a part of the nexus study.
7. All studies shall be adopted at a public hearing with at least 30 days' notice, and the local agency shall notify any member of the public that requests notice of intent to begin an impact fee nexus study of the date of the hearing.
8. Studies shall be updated at least every eight years, beginning on January 1, 2022.
9. The local agency may use the impact fee nexus study template developed by the Department of Housing and Community Development pursuant to Section 50466.5 of the Health and Safety Code.

This report demonstrates that all fee components comply with AB 602.

Section 1 POPULATION AND LAND USE ASSUMPTIONS

LAND USE TYPES

To ensure a reasonable relationship between each fee and the type of development paying the fee, different land use types must be distinguished. The land use categories used in this analysis are defined below.

- **Single Family Residential (SFR)**: Detached single-family dwelling units. Includes very low density, low density, and age-restricted units.
- **Multi-Family Residential (MFR)**: Attached residential project consisting of 2 to 4 units.
- **High Density Residential (HDR)**: Attached residential project consisting of 4 or more attached units.

Non-residential land uses do not pay the fee since they do not generate additional residents and it is assumed workers have minimal impact on the City's park system.

GROWTH FORECASTS

Growth projections are used as indicators of demand. The City's buildout population projections help guide the City's park planning goals to maintain park acreage ratio standards. The following resources were used as a part of this analysis:

- Estimates of population projections and total development through buildout were based on the City's Land Use Plan by TAZ provided by the City's Planning Department and updated to remove permits that were pulled between the time the projections were made and May 23rd, 2023.
- Estimated persons per household data were based on the 2021 US Census American Community Survey.

Table 1-1 identifies the estimated growth projections to buildout.

Table 1-1: Projected New Population Growth

Land Use	Density	Total Projected New Development at Buildout	
Residential	*Persons Per Household*[1]	*Dwelling Units*	*New Population*
Single Family Residential[2]	3.50	15,539	54,387
Multi-Family Residential (Attached 2-4)	2.80	875	2,450
High Density Residential (Attached 4+)[3]	2.60	3,871	10,065
Subtotal Residential		**20,285**	**66,902**

Source: City provided land use TAZ data. Updated to remove developments that have pulled permits as of 05/23/2025.

[1] Persons per household assumption using data from the US Census American Community Survey (2021).

[2] Includes Very Low Density, Low Density Residential, and Single Family Age Restricted.

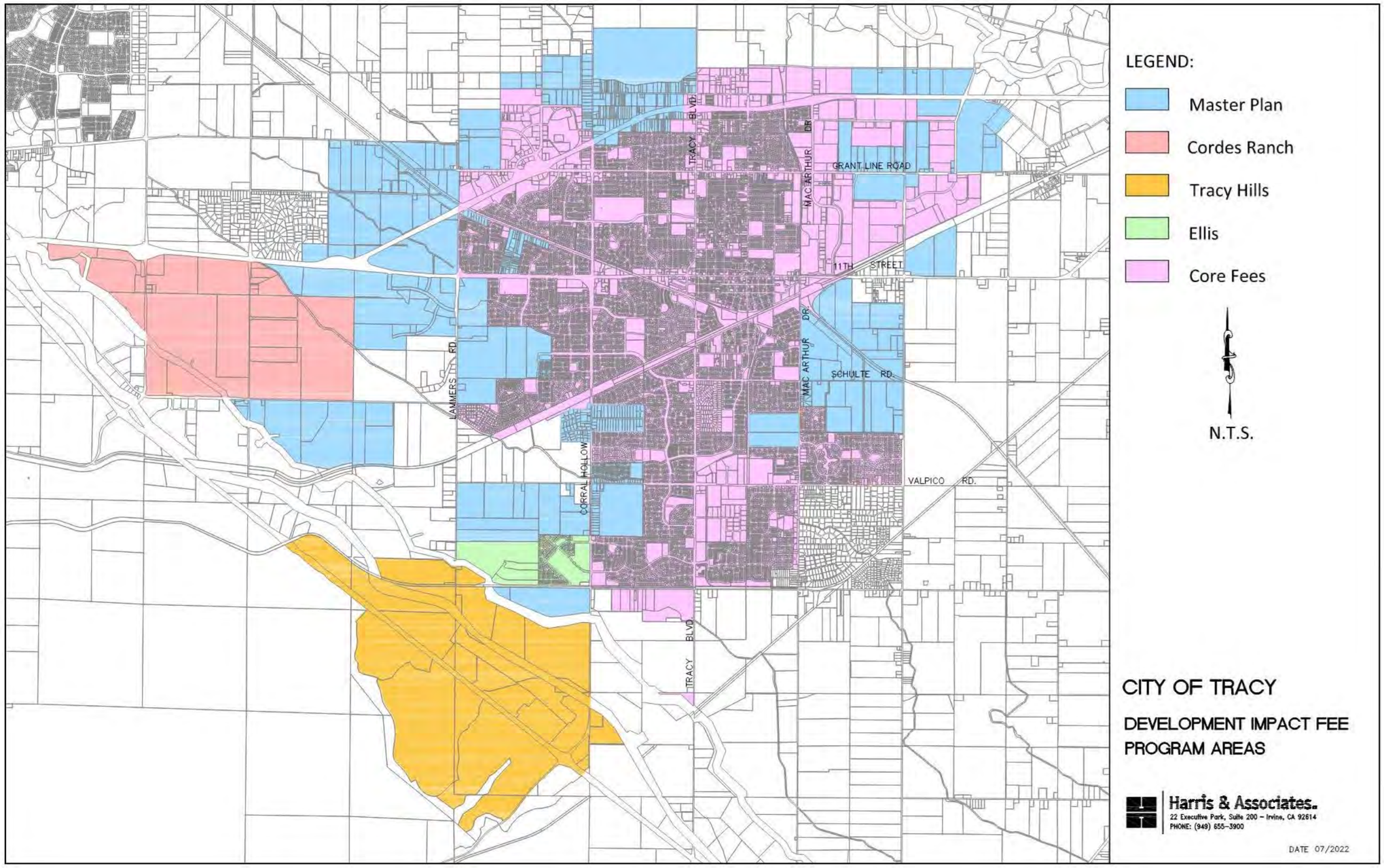
[3] Includes High Density and Very High Density Residential. 1,685 units shifted from Buildout to 2040 to match Master Plan assumptions.

SERVICE POPULATION

The Parks Fee is collected to fund the acquisition and construction of neighborhood and community parks to serve the residents of the City of Tracy. The Parks Fee does not apply to non-residential development based on the assumption that workers typically do not use park facilities. Assembly Bill 1191, commonly referred to as the Quimby Act, outlines the requirements for imposing fees for park purposes with a minimum of three (3) acres and a maximum of five (5) acres of green space per 1,000 residents. The City of Tracy has a current and proposed level of service standard of 4 acres of parkland per 1,000 residents, comprised of 3 acres of neighborhood park and 1 acre of community park.

Figure 1-1 shows the Master Plan fee program areas. Cordes Ranch and Tracy Hills are depicted in separate colors to differentiate that while they are generally subject to the Master Plan fees, they have agreements in place with the City that details their specific fees. The Core Fees program area has their own set of fees as outlined in the "Core Fees Development Impact Fee Study" adopted August 2021 and the Ellis program area has their own set of fees as outlined in the "Ellis Program Area Finance and Implementation Plan" adopted August 2013.

Figure 1-1: City of Tracy Fee Program Areas



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RESIDENTIAL DENSITY

Using persons per household (PPH) data for residential units is a common metric used to establish a reasonable relationship between the demand created by the development project and the fees charged. The residential density factors were derived using information from the US Census American Community Survey (2021). The following average density factors are used.

Residential	Density
Single Family	3.50 residents per dwelling unit
Multi-Family (Attached 2-4)	2.80 residents per dwelling unit
High Density (Attached 4+)	2.60 residents per dwelling unit

AVERAGE UNIT SIZES

To meet AB 602 requirement five (5), that states that a fee imposed on a housing development project shall be calculated proportionately to the square footage of proposed units of the development, this Nexus Study calculates a fee per unit and then uses the average unit size for Single Family Residential, Multi-Family Residential (Attached 2-4), and High Density Residential (Attached 4+) based on the estimated average size of planned new development within each land use category in the City to convert to a fee per square foot. The average unit size is based on the livable square footage of the residential units.

Basing the average unit size on livable square footage for all residential units is not only consistent with industry standard for fee calculations, but it also provides a strong nexus between the impact of the unit and the fee amount. A good example of industry standard are school fees in California. In California, school fees are based on assessable space, which means a quantity equal to the area (expressed in square feet) within the perimeter of a residential structure, not including the carport, communal walkway, garage, overhang, patio, enclosed patio, detached accessory structure or similar structure.

Multi-Family and High-Density Residential projects that include communal spaces (i.e., clubhouse, maintenance facility, gym, etc.) will not be assessed impact fees on such areas as the impact is considered to be captured within the residential fees. Areas that contain employees and are accessible by the public will be charged impact fees according to use (i.e., leasing office would pay office fees).

Based on the estimated average size of planned new development within each land use category in the City of Tracy, the following average unit sizes are utilized in this study.

Single Family Residential…… 2,500 Square Feet Per Unit
Multi-Family Residential (Attached 2-4)…….. 1,500 Square Feet Per Unit
High Density Residential (Attached 4+)...……. 950 Square Feet Per Unit

The City will monitor the average size of new housing units in the City on an annual basis and if the average size of units is significantly less than anticipated, the fees will be updated as part of the annual update to reflect this change in order to ensure the fee program does not fall short.

As detailed in the next sections, the fee per square foot is calculated by dividing the fee per unit by the average size shown above for each residential unit type. Fees for Multi-Family Residential and High-Density Residential result in a higher fee per square foot than Single Family Residential due to the higher density of people per square foot of space.

Section 2 PARKS FEE

The City of Tracy's current park system includes some 85 parks covering 364 acres, with numerous athletic courts, sports facilities, and fields. The City currently meets the goal of 4 acres per 1,000 established in the City of Tracy Parks Master Plan (New Developments) adopted April 16, 2012, by Resolution 2013-056. The City aims to continue to meet this standard for new development, while working to diversify the types of park experiences that are created.

PARK CLASSIFICATIONS

The Parks, Recreation & Trails Master Plan Update defines six types of parks: neighborhood parks, community parks, linear parks, sports complexes, special use parks, and mini parks.

Neighborhood Parks

Neighborhood parks should be provided within walking or biking distance for residents in one or more neighborhoods. Parks shall be between 2 and 10 acres. Parks between 2 and 4 acres in size must be connected via a continuous accessible route through a linear park or greenbelt/open space to another existing park or planned park at or above 4 acres in size. Proposed connections using standard city sidewalks will not be considered. Typically, developers will build and dedicate their neighborhood parks and in exchange, can receive fee credits in accordance with the City's municipal code. Further neighborhood park guidelines are provided in the City's Park Master Plan.

Linear Parks

Linear parks are recognized by the City as a type of neighborhood park and treated as such for park planning and development. Linear parks should be at least 50 feet wide and at least 0.5 miles long. If linear parks are designed to be integrated into utility easement and corridors, the park widths shall be in addition to the widths of the easements. Developers may be eligible to receive fee credits for building linear parks that align with the guidelines in the City's Park Master Plan.

Community Parks

Community parks are large parks that provide opportunities for community-scale facilities and are typically 10 to 30 acres. These parks are typically built by the City, however at times, developers may fund a community park that meets the guidelines of the City's Park Master Plan.

Sports Complexes

Sports complexes are parks that are primarily devoted to sports fields, play courts, and other facilities for organized athletics and are recognized as a type of community park. They are typically 10 to 100+ acres in size. These are classified under community parks for development impact fee purposes and are typically built by the City.

Special Use Parks

Special Use parks are designed around a specialized facility or site such as an aquatic center or indoor recreation/community center and are recognized as a type of community park. Special use parks can vary from 1 acre to over 100 acres. These are considered community parks and are typically built by the City.

Mini Parks

Mini parks are small-sized parks that provide basic recreation amenities for nearby residents in a specific neighborhood or subdivision. New mini parks may be provided as part of new development but will not earn credit towards park fee requirements and shall be the sole responsibility of an HOA to manage and maintain.

EXISTING LEVEL OF SERVICE

When the Master Plan Parks Fee was created in May 2012, the City maintained a level of service of 4.1 acres per 1,000 residents. As of 2021 when the Master Plan was completed, Tracy's park system had a collection of 364.3 acres of community, neighborhood, and mini parks, providing 4.05 acres of park land per 1,000 residents and meeting its current standard of 4 acres of park per 1,000 residents.

PLANNED LEVEL OF SERVICE

The PRTMP aims to maintain a 4 acre per 1,000 residents ratio. The following park allocations and policies have been established:

- 3 acres per 1,000 residents for new neighborhood parks and linear parks. Up to half of this amount may be provided in the form of linear parks, at the City's discretion, and provided that the parks meet size, locational and access characteristics and typical amenities defined in the Master Plan Policy 1A.
- 1 acre per 1,000 residents for new community parks, sports complexes, and special use parks.
- Parks that are collocated with schools or other community facilities must be fully open to the public during regular park hours to be counted as park acreage.
- Park acreage that is collocated with stormwater detention basins may be counted if it is designed and programmed for recreational use. This acreage shall be counted as a percentage equivalent to the percentage of the year the basin is designed to be available for recreation based on anticipated drainage.
- Parks that are collocated with trails must meet park size and locational characteristic requirements.

FEE METHODOLOGY

The Parks Fee uses the Planned Facility methodology for calculating the fee. As stated in the "Impact Fee Nexus Study Template" prepared for the California Department of Housing and Community Development by Terner Center for Housing Innovation at UC Berkeley, with the Planned Facility Method "New development will fund the planned expansion of facilities at the future standard attributable to new development." The fees are based on the future park facilities needed to maintain the adopted General Plan standard of 3 acres of neighborhood park per 1,000 residents and 1 acre of community park per 1,000 residents.

Based on the updated Parks Master Plan, the estimated cost per acre for neighborhood parks is approximately $1.49 million and the estimated cost per acre for community parks is approximately $1.56 million. These cost estimates include the construction cost, soft costs, and land acquisition costs. The cost estimates from the Parks Master Plan are in 2021 dollars and have been updated by the ENR CCI for San Francisco from June 2021 to February 2024 for the fee calculation. Due to the delay in the adoption of the Nexus Study, the ENR CCI change from February of 2024 to April of 2025 was analyzed, but due to the fact that there has not been a significant change in the index, the costs are not further being updated. The original cost estimates in 2021 dollars can be found in **Table A-1, Table A-2,** and **Table A-3** located in **Appendix A.**

Table 2-1 summarizes the cost per acre for park construction, soft costs, and land acquisition and then converts these into a cost per resident. The cost per resident is calculated by taking the total cost per acre, multiplying it by the required acres per 1,000 residents, and then dividing it by 1,000 to arrive at the cost per resident. It should be noted that land dedication is a requirement under Quimby, however land costs are included in the fees and the developer will receive credit for dedicating land.

Table 2-1: Park Cost Per Resident

	Neighborhood Parks[5]	Community Parks	Total
Costs[1, 2]			
Park Construction Cost per Acre	$926,751	$981,397	
Mark-Up			
Design and Planning (10%)	$92,675	$98,140	
Construction Management (10%)	$92,675	$98,140	
General Contingency (15%)	$139,013	$147,210	
Total Park Construction Cost per Acre	**$1,251,114**	**$1,324,887**	
Land Cost[3]	$250,000	$250,000	
Total Park Cost per Acre	**$1,501,114**	**$1,574,887**	
Required Acres/1,000 Residents[4]	3.0	1.0	4.0
Park Construction Cost per Resident	$3,753	$1,325	$5,078
Land Acquisition Cost per Resident	$750	$250	$1,000
Total Park Cost per Resident	**$4,503**	**$1,575**	**$6,078**

Source: City of Tracy Citywide Parks, Recreation & Trails Master Plan Update prepared by WRT (August 2022).

[1] Park construction costs are from the Tracy Parks Master Plan prepared by WRT, August 2022. Per the Master Plan, the capital improvement costs are established in 2021 dollars and should be adjusted annually for inflation. Estimated construction costs are escalated to current dollars using the San Francisco ENR CCI.

[2] Includes site work (temporary protection, clear and grub, clean and structural fill, storm water allowance, drainage allowance, laser grading) at 45 percent of other construction cost.

[3] Based on discussions with City staff.

[4] Requirement from the City of Tracy General Plan.

[5] Up to half the required neighborhood parks may be built as Linear Parks.

FEE SUMMARY

The Neighborhood Park Fee and the Community Park Fee per unit is calculated by multiplying the cost per resident by the average number of residents per unit type (density). The fee per unit must then be converted to a fee per square foot. **Table 2-2** and **Table 2-3** calculates the Neighborhood Park Fee and the Community Park Fee per square foot by taking the cost per unit and dividing by the estimated average unit square footage size for each land use.

Developers who build and dedicate Neighborhood parks can receive Neighborhood Park Fee credits. The acreage requirements are determined by multiplying the population densities, identified in **Table 1-1**, by the corresponding number of proposed residential units to be developed to get the total population growth. Once the population growth is determined, the acreage requirement is calculated using the standard of 3 acres of neighborhood park per 1,000 people.

Table 2-2: Neighborhood Park Fee Calculation

Land Use	Construction Cost per Resident	Land Cost per Resident	Density	Construction Cost	Land Cost	Total Neighborhood Park Fee	Average Size[1]	Construction Cost	Land Cost	Total Neighborhood Park Fee
Neighborhood Park Facilities and Parkland Acquisition										
Residential				*(per Unit)*				*(per SF)*		
Single Family Residential	$3,753	$750	3.50	$13,136	$2,625	**$15,761**	2,500	$5.25	$1.05	**$6.30**
Multi-Family Residential (Attached 2-4)	$3,753	$750	2.80	$10,508	$2,100	**$12,608**	1,500	$7.01	$1.40	**$8.41**
High Density Residential (Attached 4+)	$3,753	$750	2.60	$9,758	$1,950	**$11,708**	950	$10.27	$2.05	**$12.32**

[1] Average size based on the average unit size of planned new development in the City of Tracy.

[2] The fee for residential will be applied to the livable square footage.

Table 2-3: Community Park Fee Calculation

Land Use	Construction Cost per Resident	Land Cost per Resident	Density	Construction Cost	Land Cost	Total Community Park Fee	Average Size[1]	Construction Cost	Land Cost	Total Community Park Fee
Community Park Facilities and Parkland Acquisition										
Residential				*(per Unit)*				*(per SF)*		
Single Family Residential	$1,325	$250	3.50	$4,638	$875	**$5,513**	2,500	$1.86	$0.35	**$2.21**
Multi-Family Residential (Attached 2-4)	$1,325	$250	2.80	$3,710	$700	**$4,410**	1,500	$2.47	$0.47	**$2.94**
High Density Residential (Attached 4+)	$1,325	$250	2.60	$3,445	$650	**$4,095**	950	$3.63	$0.68	**$4.31**

[1] Average size based on the average unit size of planned new development in the City of Tracy.

[2] The fee for residential will be applied to the livable square footage.

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CAPITAL IMPROVEMENT PROJECTS & REVENUE PROJECTIONS

Based upon the projected new population growth in the Master Plan fee program area (**Table 1-1**), new development (from June 2025 to buildout) will contribute roughly 267.6 acres to the City's park system, as shown in **Table 2-4.** Given the nature of new development and the fact that neighborhood parks are typically built and dedicated by the developer, the exact identification of future parks is difficult to predict.

Table 2-4: Projected Park Acreage Addition

Park Type	*Standard Acre per 1,000 People*	*Buildout Population Growth*	*Buildout Park Acreage Addition*
Neighborhood Park	3.00	66,901	200.70
Community Park	1.00		66.90
Total	**4.00**		**267.60**

In most cases, developers build new neighborhood parks on behalf of the City as a condition of residential subdivision construction and to fulfill their Quimby park acreage dedication requirements. Developer-built parks can often be delivered faster than City-built park projects due to economies of scale as developers are already building within their subdivisions and the constraint in city staff resources. Developers who build and dedicate parks, will be given credits against their neighborhood park fees as outlined in the City's Municipal Code. Due to this requirement, it is not possible nor necessary to include a CIP list for neighborhood parks. Should neighborhood park fees be collected, the City will allocate these to new parks through the City's CIP process.

Developers typically choose to satisfy their community park obligation through payment of the Community Park Fee due to the large size and advanced planning community parks require, however in some cases community parks are built by developers. **Table 2-5** lists the planned Community Parks and serves as the CIP List as required by AB 602. The exact start date for each park is difficult to determine due to the fact that revenue collection varies based on the timing of new development and the needed facilities depend on the location of new development within the City. The City will use the CIP facilities identified here to guide their five-year Capital Improvement Plan based upon city need and timing of securing adequate revenue. The City has 30 acres of community park planned in Tracy Hills, 15 acres to be constructed by the developer and 15 acres to be constructed by the City. The City is starting discussions on the first phase of this park and the second phase is set to begin when the 3,600th residential permit is pulled. As future developments come online, the City will identify future community park sites to program the remaining 36.90 acres.

Table 2-5: Community Park Facilities Summary

Community Park	Location	Acres	Estimated Start Date
Tracy Hills Community Park - Phase 1	Tracy Hills	15.00	2025
Tracy Hills Community Park - Phase 2	Tracy Hills	15.00	Issuance of the 3,600th permit in Tracy Hills
Future Community Park	TBD	36.90	TBD
Total	**-**	**66.90**	**-**

Table 2-6 summarizes the potential park revenue from projected future development identified in **Table 1-1**. The anticipated revenue does not take into account the City's current fund balance which is currently $14,624,765. The revenue collected from the Parks Fees will be available to expand the City's Park facilities to meet the needs of new residents in the City. However, as described above, it is anticipated that the neighborhood parks will primarily be built and dedicated by developers within each development and fee revenues never collected.

Table 2-6: Neighborhood and Community Park Fee Potential Revenue

Land Use	Buildout Units	Average Size[1]	Construction Cost[2]	Land Cost[2]	Total Anticipated Fee Revenue[3]
Neighborhood Park Facilities and Parkland Acquisition					
Residential (Fee per Dwelling Unit)			*(per SF)*	*(per SF)*	
Single Family Residential	15,539	2,500	$5.25	$1.05	$244,739,250
Multi-Family Residential (Attached 2-4)	875	1,500	$7.01	$1.40	$11,038,125
High Density Residential (Attached 4+)	3,871	950	$10.27	$2.05	$45,306,184
Total	**20,285**				**$301,083,559**
Community Park Facilities and Parkland Acquisition					
Residential (Fee per Dwelling Unit)			*(per SF)*	*(per SF)*	
Single Family Residential	15,539	2,500	$1.86	$0.35	$85,852,975
Multi-Family Residential (Attached 2-4)	875	1,500	$2.47	$0.47	$3,858,750
High Density Residential (Attached 4+)	3,871	950	$3.63	$0.68	$15,849,810
Total	**20,285**				**$105,561,535**

[1] Average size based on the average unit size of planned new development in the City of Tracy.

[2] The fee for residential will be applied to the livable square footage.

[3] Total rounded to the nearest dollar.

FEE COMPARISON

Table 2-7 compares the proposed Parks Fees (summing the neighborhood and community park components) to the existing Parks Fees (as of July 1, 2024). For comparison purposes, the existing per unit fees were converted to a fee per square foot using the same average unit sizes as the

proposed fees. The Parks Fees are increasing due to significant increases in estimated costs to build parks and the cost of land. Furthermore, the population assumptions from the previous master plan changed based on the US Census American Community Survey, increasing the persons per household from the prior master plan, thus increasing the park acreage that is required to serve each new unit. Most developers will build and dedicate their neighborhood parks and will not be required to pay the neighborhood park component. The Parks Fees also include land costs that would otherwise be required to be dedicated under Quimby, which is typically a requirement outside of the fee program.

Table 2-7: Parks Fee Comparison

Land Use	Proposed Neighborhood Parks	Proposed Community Parks	Total Parks Fee		
			Proposed Parks Fee	Existing Parks Fee[2]	Percent Change
Residential (per SF) [1]					
Single Family Residential	$6.30	$2.21	$8.51	$4.11	107%
Multi-Family Residential (Attached 2-4)	$8.41	$2.94	$11.35	$5.60	103%
High Density Residential (Attached 4+)	$12.32	$4.31	$16.63	$7.21	131%

[1] Residential fee is calculated on habitable square footage.

[2] Program Management (5%) removed from Construction Cost of Existing Fee for an accurate comparison.

NEXUS REQUIREMENT SUMMARY

AB 1600 requires that public agencies satisfy five requirements when establishing, increasing, or imposing a fee as a condition of approval of a development project. The required findings are as follows.

Requirement 1: Identify the purpose of the fee.

The purpose of the Parks Fee is to fund the park needs generated by new development in the City. Each new resident creates a demand for additional neighborhood and community parks. The City's adopted standard is to provide three acres of neighborhood park and one acre of community park per 1,000 new residents. In order to accommodate these needs, new parks must be built and/or existing parks must be expanded**. Table 2-1** shows the cost per acre identified in the *Citywide Parks, Recreation, and Trails Master Plan Update* (PRTMP), prepared by WRT (August 2022) for the construction of neighborhood and community parks to meet this need.

Requirement 2: Identify the use of the fee.

The Parks Fee will be used to fund new park development in order to meet the City's standards discussed in this chapter and the PRTMP. Park expansion is necessary to meet the City's adopted standards of three acres of neighborhood park and one acre of community park for each 1,000 new

residents. In most cases, developers build new neighborhood parks on behalf of the City as a condition of residential subdivision construction and to fulfill their Quimby park acreage dedication requirements. The location of the neighborhood parks will be determined based on the location of the new development project, as they are typically located within each development. The City has 30 acres of community park planned in Tracy Hills, 15 acres to be constructed by the developer and 15 acres to be constructed by the City. As future developments come online and Community Park Fees collected, the City will identify future community park sites to program the remaining 36.90 acres. Community Parks planned facilities are shown in **Table 2-5**. The potential fee revenue is shown on **Table 2-6** and it is anticipated that an additional 200.70 acres of neighborhood park and 66.90 acres of community park are needed to meet the needs of future development.

Requirement 3: Determine how there is a reasonable relationship between the fee's use and the type of development project on which the fee is imposed.

The Parks Fee will be used to fund new neighborhood and community parks that are necessary to serve the increased residents in the City. New residential development generates additional residents which increases the demand for park facilities. The Parks Fee is calculated using the City's general plan standard of four (4) acres of park per 1,000 residents. Residential development is responsible for paying its fair share to maintain the City's standard. Non-residential uses do not pay the fee since they do not generate additional residents and it is assumed workers have minimal impact on the City's park system. **Table 2-1** calculates the cost per resident. The cost per resident is then allocated to each development type based on the estimated persons per household. **Table 2-2** and **Table 2-3** then calculate the cost per square foot for the residential units based on the estimated average unit size. By basing the fee on the size of the unit and the estimated number of new residents that is anticipated to be generated by the addition of that square footage, the fee is directly correlated to the increased need for new parks.

Requirement 4: Determine how there is a reasonable relationship between the need for the public facility and the type of development project on which the fee is imposed.

Each new residential development is anticipated to generate new residents. The addition of new residents creates the need for additional neighborhood and community parks to maintain the City's General Plan park standard of four (4) acres per 1,000 residents. The fee is directly correlated to the number of new residents expected to be generated by each type of development. These calculations are shown in **Table 2-2** and **Table 2-3**. Non-residential development does not pay for parks as non-residential developments do not generate demand for park facilities.

Requirement 5: Determine how there is a reasonable relationship between the amount of the fee and the cost of the public facility or portion of the public facility attributable to the development on which the fee is imposed.

The Parks Fee will fund the park facilities that are required to serve the new development in the City. As new residential units are constructed, new park facilities are necessary to maintain the City's General Plan standard of four (4) acres per 1,000 residents. The City is currently providing a level of service exceeding this standard, so new development is not funding existing deficiencies.

The neighborhood park fee component is calculated by taking the per acre neighborhood park and land acquisition costs times three acres of park per 1,000 residents and then dividing that by 1,000 to determine the cost per resident. The cost per resident is then spread to each development type based on the estimated persons per household. **Table 2-2** calculates the cost per square foot for each land use based on the estimated average unit size for each land use. For developments that dedicate park land and/or construct parks, the developer will receive fee credits in accordance with the municipal code.

The community park fee component is calculated by taking the per acre community park and land acquisition costs times one acre of parks per 1,000 residents and then dividing that by 1,000 to determine the cost per resident. The cost per resident is then spread to each development type based on the estimated persons per household. **Table 2-3** then calculates the cost per square foot for each land use based on the estimated average unit size for each land use.

By spreading the fees based on the estimated new residents that would be generated, each new residential unit is paying only its fair share of the facilities required to maintain the City's Parks Master Plan Standard. Non-residential land uses do not have a Park Fee as non-residential development will not generate an increase in park facility demand.

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Section 3 IMPLEMENTATION AND ADMINISTRATION

IMPLEMENTATION

According to the California Government Code, prior to levying a new fee or increasing an existing fee, an agency must hold at least one open and public meeting with at least 30 days' notice. In addition, notice of the time and place of the meeting, including a general explanation of the matter to be considered, and a statement that the data required by this section is available, shall be mailed at least 14 days prior to the meeting to any interested party who files a written request with the local agency for mailed notice of the meeting on new or increased fees or service charges. Any written request for mailed notices shall be valid for one year from the date on which it is filed unless a renewal request is filed. At least ten days prior to this meeting, the agency must make data on infrastructure costs and funding sources available to the public. Notice of the time and place of the meeting and a general explanation of the matter are to be published in accordance with Section 6062a of the Government Code, which states that publication of notice shall occur for ten days in a newspaper regularly published once a week or more. Two publications, with at least five days intervening between the dates of first and last publication not counting such publication dates, are sufficient. The period of notice commences upon the first day of publication and terminates at the end of the tenth day, including therein the first day. The new or increased fees shall be effective no earlier than 60 days following the final action on the adoption or increase of the fees. Following adoption of the fees, the fees and supporting information must be placed on the City's website.

FEE PROGRAM ADMINISTRATIVE REQUIREMENTS

The Government Code requires the City to report every year and every fifth-year certain financial information regarding the fees. The City must make available within 180 days after the last day of each fiscal year the following information from the prior fiscal year:

1. Brief description of the type of fee in the account or fund
2. Amount of the fee
3. Beginning and ending balance in the account or fund
4. Amount of fees collected and the interest earned during the previous year
5. Identification of each public improvement for which fees were expended and the amount of expenditures, including the total percentage of the cost of the public improvement that was funded with fees
6. An identification of an approximate date by which the construction of the public improvement will commence if the local agency determines that sufficient funds have been collected to complete financing on an incomplete public improvement and the public improvement remains incomplete

7. Description of each interfund transfer or loan made from the account, including the public improvement on which the transferred or loaned fees will be expended, and when each loan will be repaid and the rate of interest the account will receive on the loan
8. Identification of any refunds made once determined that sufficient monies have been collected to fund fee-related projects

On October 11, 2023, California Governor Gavin Newson signed into law AB 516 which amended certain portions of the Mitigation Fee Act related to the annual and five-year reporting requirements. Under AB 516, Requirements 6 and 8 have been expanded to include the following:

6a. Identification of each public improvement identified in the previous report and whether construction began on the approximate date noted.
6b. For previously identified projects that did not start construction on the approximate date in the previous report, the reason for the delay and a revised approximate date that the local agency will commence construction, if applicable.
6c. For any refunds made, the number of persons or entities identified to receive those refunds.

The City must make this information available for public review and must also present it at the next regularly scheduled public meeting not less than 15 days after this information is made available to the public.

For the fifth fiscal year following the first deposit into the account or fund, and every five years thereafter, the City must make the following findings with respect to any remaining funds in the fee account, regardless of whether those funds are committed or uncommitted:

1. Identify the purpose to which the fee is to be put.
2. Demonstrate a reasonable relationship between the fee and the purpose for which it is charged.
3. Identify all sources and amounts of funding anticipated to complete financing any incomplete improvements.
4. Designate the approximate dates on which funding in item (3) above is expected to be deposited into the fee account.

As with the annual disclosure, the five-year report must be made public within 180 days after the end of the City's fiscal year and must be reviewed at the next regularly scheduled public meeting.

FEE ADJUSTMENT PROCEDURES

The Parks fees may be adjusted periodically to reflect revised facility requirements, receipt of funding from alternative sources (i.e., state or federal grants), revised facilities or costs, changes in demographics, changes in the average unit square footage, or changes in the land use plan. In

addition, the fees will be automatically updated each year on July 1st based on the June ENR CCI for San Francisco. Due to the timing of when the fees will take effect, the next fee adjustment will occur July 2026.

TIMING OF FEE PAYMENT

Fees will be collected at the time the building permit for the project is issued. All residential projects will pay a fee based on the livable square footage of the residential units. For residential projects that include multiple buildings, fees will be due at the time the building permit is issued for each building. The non-residential communal portion for high-density residential projects (i.e., clubhouse, maintenance facility, gym, etc.) will not be assessed impact fees as the impact is considered to be captured in the residential fees. Areas that are accessible by the public (i.e., a leasing office) will be charged impact fees according to use. Further information on what portion of a project may be subject to fees is discussed within Section 1 – Average Unit Sizes.

DESIGNATED RESIDENTIAL PROJECTS DEFERRED FEE PAYMENTS

California Senate Bill 937 (SB 937), which became effective on January 1, 2025, significantly delays the collection of fees for residential projects defined as "Designated Residential Development Projects." Specifically, SB 937 states that public agencies may not impose development impact fees on Designated Residential Development Projects until the project receives a Certificate of Occupancy or Temporary Certificate of Occupancy. Furthermore, local agencies may not charge interest on the delayed fee payments for such projects; rather, the fees must reflect the fee amount in place at the time the project's building permits are issued. In addition, the bill extends housing entitlements by 24 months for projects with entitlements issued prior to January 1, 2024, and set to expire on or before December 21, 2025.

SB 937 was designed to incentivize housing production by mitigating the effects of rising construction costs and interest rates, which hinder the financial feasibility of new housing projects. By deferring fee payments with zero interest, SB 937 can help to incentivize housing developers, who must demonstrate financial feasibility to investors and lending institutions before receiving necessary funding. Additionally, by extending entitlements, the bill allows developers more time to raise funding before constructing the project. By providing these incentives to developers, the bill strives to increase housing production, allowing local jurisdictions to fulfill their housing goals.

Housing projects must meet one of the following conditions to be considered a Designated Residential Development Project:

1. 100% of residential units (excluding the manager's unit) are reserved for low-income households.
2. The project meets the requirements regarding a Low Barrier Navigation Center Developments, per Government Code Section 65662.

3. The project is approved by a local government and meets all site-specific criteria, affordability criteria, and objective development standards pertaining to affordable housing developments located in commercial zones or mixed-income housing developments along commercial corridors, as specified by Article 2 (commencing with Section 65912.110) or Article 3 (commencing with Section 65912.120) of Chapter 4.1 of the Government Code.
4. The project is subject to a streamlined ministerial approval process, per Government Code Section 65913.4.
5. The project meets the criteria specified in the Affordable Housing on Faith and Higher Education Lands Act of 2023 (SB4)
6. The project is entitled to a Density Bonus, per Government Code Section 65915.
7. The project features 10 or fewer units.

Although fees are deferred for Designated Residential Development Projects until the project receives a Certificate of Occupancy or Temporary Certificate of Occupancy, it is important to note that public agencies may still collect utility service fees after receiving an application for utility services. In addition, developers may be required to pay development impact fees prior to the Certificate of Occupancy if construction does not commence within five years of the building permit issue date.

PROGRAM MANAGEMENT

The City, with assistance from consultants, oversees the implementation and administration of the Master Plan Fee Program, consistent with the requirements of the Mitigation Fee Act. For all Master Plan fees, a Program Management Fee is added to fund the costs of City's management and ongoing fee program administration, collection, and reporting. This includes costs associated with City staff and consultant time, studies, and administration to support the program. Industry standard ranges from three to six percent (3-6%) for the administrative component of a development fee program. The City has historically collected five percent (5%) for administrative costs on each fee, which was previously included as a soft cost mark-up. Administratively, the five percent (5%) charge per fee was difficult to account for throughout the numerous fee funds.

Thus, a separate Program Management Fee was created and will be collected in a separate fund for ease of administration. Additional information regarding the Program Management Fee can be found in the Program Management Impact Fee Nexus Study, prepared by Harris & Associates (March 2024). The administrative functions of the Program Management Fund include, but is not limited to, the following:

- Annual fee adjustments
- Annual fee reporting
- Additional fee reporting every five years

- Application and tracking of fee credits and reimbursements
- Posting of nexus studies and fee schedules on the City's website
- Periodic nexus study updates
- Staff and consultant time related to fee preparation, collection, tracking, and administration

CREDITS AND REIMBURSEMENT POLICIES

Fee credits and reimbursements may be allowed for developer-constructed facilities in compliance with Title 13 of the Tracy Municipal code and other applicable polices. Credits and reimbursements shall be calculated specifically for each project as applicable. It should be noted that per Section 13.08.020 (e) of the Tracy Municipal Code "The Subdivider shall not be entitled to any credit for program implementation or contingencies."

PROGRAMMING REVENUES WITH THE CIP

The City should maintain its Capital Improvement Program (CIP) to adequately plan for future park infrastructure needs. The CIP should commit all projected fee revenues and fund balances to specific projects that are necessary to serve growth. The CIP provides documentation necessary for the City to hold funds in a project account for longer than five years if necessary to collect sufficient funds to complete a project. The PRTMP identifies the future acreages needed to serve new development based on the general plan standard. It is anticipated that the neighborhood parks will primarily be built and dedicated by developers within each development. Based on the population estimates in this Nexus Study and using the City General Plan standard of 3 acres per 1,000 residents for Neighborhood Parks and 1 acre per 1,000 residents for Community Parks, it is anticipated that an additional 207.96 acres of Neighborhood Park and 69.32 acres of Community Park are needed to meet the needs of future development. This is calculated in **Table 2-4** and will be used to guide the City's five-year Capital Improvement Plan budget.

FEE REPORTING

Assembly Bill No. 1483, which became effective January 1, 2020, requires that public agencies make the following information available on their website. The following information must be provided:

1. A current schedule of fees, exactions, and affordability requirements imposed by the city, county, or special district, including any dependent special districts, of the city or county applicable to a proposed housing development project, which shall be presented in a manner that clearly identifies the fees, exactions, and affordability requirements that apply to each parcel.
2. All zoning ordinances and development standards, which shall specify the zoning, design, and development standards that apply to each parcel.
3. The list of information required to be compiled pursuant to Section 65940.

4. The current and five previous annual fee reports or the current and five previous annual financial reports, that were required pursuant to AB 1600.
5. An archive of impact fee nexus studies, cost of service studies, or equivalent, conducted by the city, county, or special district on or after January 1, 2018.

Any updates to the above information must be available within 30 days.

ACCESSORY DWELLING UNITS

An accessory dwelling unit (ADU) is a second unit that is attached or detached from a single-family home. In accordance with Assembly Bill No. 881 approved on October 9, 2019, Master Plan Program Area fees will not be charged for an ADU that is less than 750 square feet. For an ADU that is 750 square feet or larger, the ADU will be charged proportionately in relation to the square footage of the primary dwelling unit. Since the Master Plan Program Area residential fees are now being charged on a square footage basis, ADU fees will be calculated by multiplying the Single-Family Residential fee by the ADU's square footage.

SPECIALIZED DEVELOPMENT PROJECTS

The fees in this report may not apply to specialized development projects such as golf courses, cemeteries, sports stadium, truck lots, or other specialized land uses. For specialized development projects the City will review the development's impacts to determine the applicable fees. The fee rates presented in this Nexus Study may be reduced, exempted, or waived under certain circumstances as determined by the City. Any exemption or reduction in fees will be based on the City's independent analysis and review of the subject property. In addition, specialized land uses may be calculated utilizing the cost per person applied to the number of people the specialized land use generates as determined by the City's independent analysis.

Some developments may include more than one land use type. In these cases, the fee is calculated separately for each land use. The City has the discretion to impose the fees based on the specific aspects of a proposed development regardless of zoning. The fee imposed should be based on the land use type that most closely represents the impacts of the development.

Section 4 APPENDICES

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Appendix A: Estimated Capital Improvement Costs for Parks (2021$)

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Table A-1: Estimated Capital Improvement Cost for Typical 5-Acre Neighborhood Park (2021$)

SITE FEATURE	ESTIMATED COST	DESCRIPTION
Fencing	$300,000	Access Control, 2-Rail Wood Fence, Access Control Gate, Maintenance
Playground with Shade Structure and Accessible Surfacing	$450,000	Playground equipment ages 2-5 and 6-12 with swings, and synthetic surfacing
20' x 20' Shelter	$150,000	Serves 30-32 people
Double Multipurpose Court (Lighted)	$300,000	Sports Court (basketball) with lights and bleachers
Walkway	$600,000	Concrete Walkway, 1/2 Mile x 8 ft. wide (Lighted)
Parallel Street Parking (Not Lighted)	$40,000	Unlighted Parallel Street Parking, Assumed 5 Ea.
Site Furniture	$130,000	5 park benches (5 on concrete slabs), 8 trash cans; 4 bike racks, 2 accessible picnic tables, 9 picnic tables, 3 bbq grills
Recreation Amenity Allowance	$250,000	Allowance to add amenities per community input during planning process
Landscaping, Turf and Signage	$550,000	2 acres of turf, entrance sign, rule signage, wayfinding signage
Sitework	$1,246,500	Includes temporary protection, clear and grub, clean and structural fill (1.5"), storm water allowance, drainage allowance, laser grading. Assumed at 45% of other construction costs.
Subtotal	*$4,016,500*	
Design & Planning	$401,650	Assumed at 10%
Construction Management	$401,650	Assumed at 10%
Contingency	$602,475	Assumed at 15%
Subtotal	*$1,405,775*	
Total Probable Cost (Neighborhood Park)	**$5,422,275**	**$1,084,455 per acre**

Table A-2: Estimated Capital Improvement Cost for Typical 15-Acre Community Park (2021$)

SITE FEATURE	ESTIMATED COST	DESCRIPTION
Fencing	$425,000	Access Control, 2-Rail Wood Fence; Access Control Gate(s), Maintenance; Access Control Gate(s), Park Entrance-Exit, assumed 2-locations
Playground with Shade Structure and Accessible Surfacing	$600,000	"Playground equipment ages 2-5 and 6-12, with climber, swings, and synthetic surfacing"
40' x 40' Shelter	$200,000	Serves 60-75 people
One Natural Turf Multi-Use Field (Lighted)	$1,225,000	"Lighted, sand-based turf field including drainage and irrigation;"
One Double Multipurpose Court (Lighted)	$300,000	Sports Court (basketball) with lights and bleachers
Restroom/Storage Building	$1,250,000	"8-unit single occupancy restroom building, plumbing chase and storage (2,500 sq. ft.)"
Lighted Parking	$500,000	150 parking stalls (145 Std & 5 HC Accessible)
Access Road, (500'L x 25'W)	$350,000	Access Road, (500'L x 25'W)
Nature Trail	$200,000	1/2 Mile (Not Lighted); soft surface
Walkways	$1,100,000	Concrete Walkways, 1 Mile x 8 ft. wide (Lighted)
Site Furniture	$350,000	15 park benches (10 on concrete slabs), 15 trash cans; 10 bike racks, 10 accessible picnic tables, 15 picnic tables, 5 bbq grills
Recreation Amenity Allowance	$300,000	Allowance to add amenities per community input during planning process
Landscaping, Turf and Signage	$2,000,000	5 acres of turf, entrance sign, rule signage, wayfinding signage
Sitework	$3,960,000	Includes temporary protection, clear and grub, clean and structural fill (1.5"), storm water allowance, drainage allowance, laser grading. Assumed at 45% of other construction costs.
Subtotal	*$12,760,000*	
Design & Planning (10%)	$1,276,000	Assumed at 10%
Construction Management (10%)	$1,276,000	Assumed at 10%
Contingency (15%)	$1,914,000	Assumed at 15%
Subtotal	*$4,466,000*	
Total Probable Cost (Community Park)	**$17,226,000**	**$1,148,400 per acre**

Table A-3: Estimated Capital Improvement Cost for Typical 1-Mile Linear Park (2021$)

SITE FEATURE	ESTIMATED COST	DESCRIPTION
Trail and Sitework	$1,200,000	Asphalt 1 mile x 12 ft. wide not lighted)
Site Furniture	$80,000	5 park benches (5 on concrete slabs), 5 trash cans; 2 bike racks
Recreation Amenity Allowance	$200,000	Allowance to add amenities per community input during planning process
Landscaping, Turf, Sitework and Signage	$1,000,000	2 acres of turf, interpretive signage, wayfinding signage, mile markers
Subtotal	*$2,480,000*	
Design & Planning	$248,000	Assumed at 10%
Construction Management	$248,000	Assumed at 10%
Contingency	$372,000	Assumed at 15%
Subtotal	*$868,000*	
Total Probable Cost (Linear Park)	**$3,348,000**	**$3,348,000 per mile**

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Appendix B: City of Tracy Citywide Parks, Recreation & Trails Master Plan Update (August 2022)

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CITY OF TRACY

CITYWIDE PARKS, RECREATION & TRAILS MASTER PLAN UPDATE



DRAFT

AUGUST 2022

CITY OF TRACY CALIFORNIA

Think Inside the Triangle™

ACKNOWLEDGMENTS

The City of Tracy thanks the community members, stakeholders, elected officials, and public agencies who participated in the development of this Comprehensive Profile for the Parks Master Plan Update.

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- Tracy City Center Association
- Tracy Express (Softball)
- Tracy Friends for Parks, Recreation & Community Services
- Tracy High School Athletics
- Tracy Landmarks Committee
- Tracy Little League
- Tracy Nature Park Advocates
- Tracy Tree Foundation
- Tracy Unified School District
- Tracy Transportation Advisory Council
- Tracy Youth Advisory Commission
- Tracy Youth Soccer League

MEMBERS OF THE TRACY COMMUNITY

All of you who participated in workshops, responded to surveys, and showed an interest in the future of parks and recreation in Tracy.

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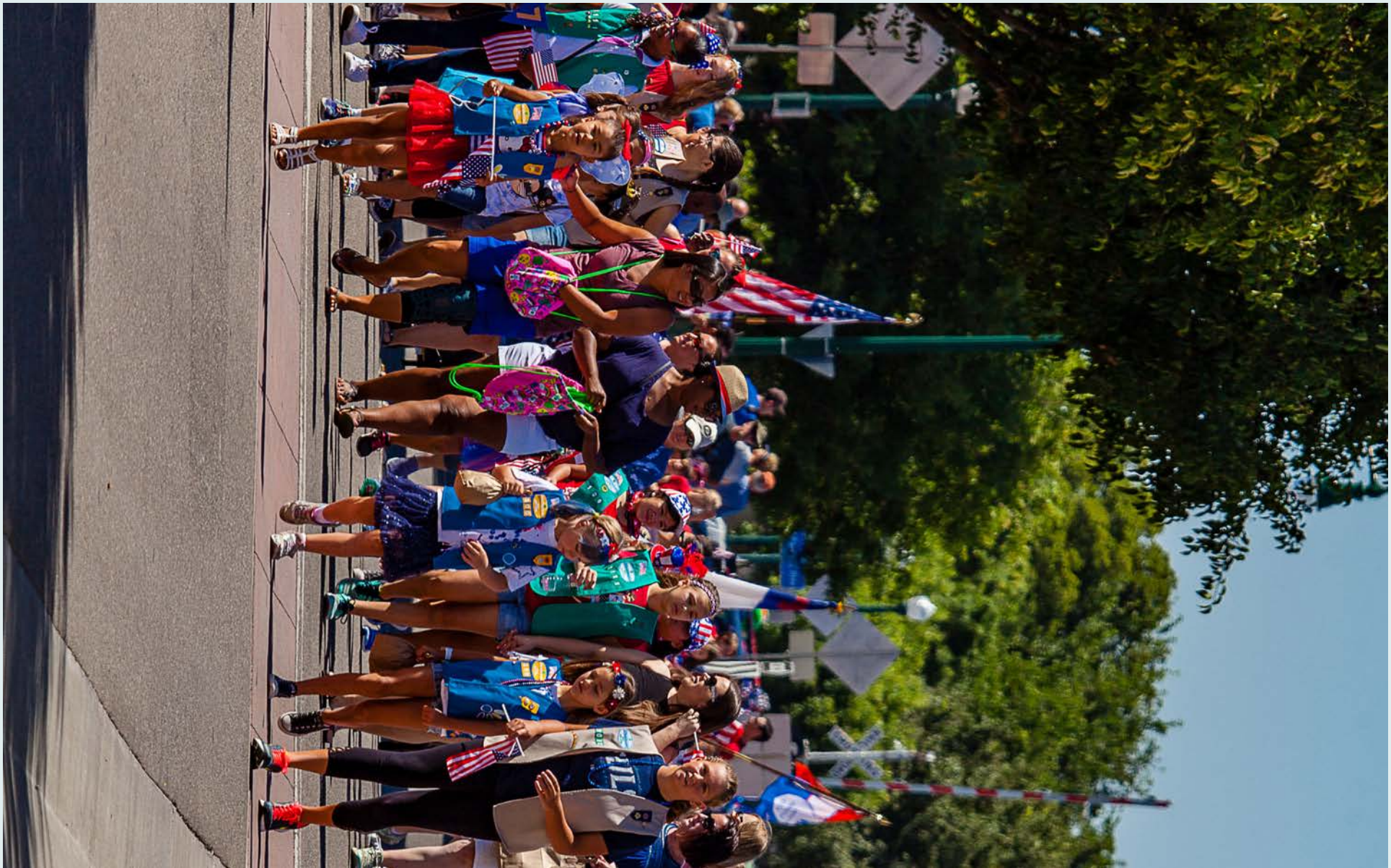
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CHAPTER
01

EXECUTIVE SUMMARY





A vibrant park system goes hand-in-hand with a healthy, welcoming, and livable community. Tracy's Parks, Recreation, and Trails Master Plan articulates the community's long-range vision and guides investment, improvements, and expansion. The Plan is revisited and updated every 10 to 15 years to respond to the changing needs of our diverse and growing community. This update represents a shared vision for our parks, recreation and trails that was shaped by Tracy residents, elected officials, city partners, and other stakeholders.

IN THIS CHAPTER:

- About this Plan
- Building on Other Plans
- Vision, Goals + Policies
- Implementating Actions

ABOUT THIS PLAN

TRACY PARKS & RECREATION

One of the most welcoming small cities in California, Tracy is a place where residents may strike a balance among family and friends, work and play, education and the arts. It is a growing and evolving community with strong values at its heart and possibilities around every corner.

Access to parks, recreation and trails is a vital part of the quality of life in Tracy. As the community continues to expand and flourish, these resources will play an even more important role in shaping the character and preserving the essence of everyday life in Tracy.

WHAT IS THE PARKS, RECREATION & TRAILS MASTER PLAN?

A Master Plan outlines a long-range vision for the city-wide system of parks and trails that responds to the community's aspirations. It helps prioritize investments, align available funding, and build a road map to guide the efforts of the City and its partners.

Why Update the Master Plan?

The park system in Tracy has big aspirations.

Tracy is growing and diversifying with the expected addition of 16,919 new residents between 2010 and 2025, or 48,341 new residents between 2020 and 2040. The parks and recreation system needs to grow along with it.

In the same way that fashions may change, so can preferences in exercise habits and trends in sports and fitness. Revisiting the Master Plan offers a way to see if the current offerings are meeting residents' needs. It's also a way to learn about the community's changing preferences and map out a course to respond to these desires.

Updating the plan provides an opportunity to analyze the City's parks, facilities, trails, and recreation programs as a whole to understand how the resources are distributed across the community, to identify gaps and reduce redundancies, and to explore ways to develop new and/or unique amenities. A comprehensive master plan also considers the lifecycle of park features and sets a strategy for replacement while at the same time tying into the City's overall goals such as those relating to climate change, resiliency, transportation, health and wellness.

The updated Plan establishes a set of priorities for the years ahead and identifies strategies to leverage partnerships and financing to achieve these priorities. The Plan identifies clear policy guidance for our development partners as they propose new residential developments.



Legacy Fields Sports Complex

Time flies!

Since our last Parks Master Plan in 2011 we've created Legacy Fields, Village Green Park, and Front Street Plaza, each contributing new pieces to the park system and new energy to our community.



Village Green Park opened in 2019 in the Ellis neighborhood.



Front Street Plaza

WHY ARE PARKS IMPORTANT?

You might wonder, why do we need parks? What value does a recreation system provide?

Parks, trails, and recreation programs provide a wide array of benefits to people of all ages by bringing families and friends together, creating opportunities to develop new skills and self-confidence, improving the air we breathe and water we drink, adding trees and greenery to our neighborhoods, and enriching our lives by making it easier to take a bike ride or exercise with a friend.

Take a look at the some of the ways parks shape our community:

DID YOU KNOW THAT PARKS AND TRAILS ALSO IMPROVE MENTAL HEALTH BY ALLOWING PEOPLE TO ENGAGE WITH NATURE & INTERACT WITH OTHERS?



Improving Community Health

The link between having access to places for physical activity and improved physical and mental health is documented thoroughly in research by the Centers for Disease Control and Prevention, along with other federal, state, and non-profit organizations, including the Trust for Public Land (TPL), the Robert Wood Johnson Foundation, and the National Recreation and Park Association (NRPA).

Parks and recreation give people of all ages opportunities to walk, play, exercise, and participate in sports. These activities promote not just physical fitness but also self-confidence and happiness. Parks can improve concentration for children with attention deficit disorder, enhance relaxation, and promote self-esteem and resilience. Physical activity reduces the risk of chronic disease while improving brain function like learning and memory. This Master Plan Update identifies specific new investments in the City's active recreational facilities, from sports fields to aquatics to exercise tracks, as well as a new focus on trails.



Bringing the Community Together

There is growing awareness of parks as a source of community cohesion and improved safety. Comfortable, attractive parks give people places to spend time with neighbors, family, and friends, and to interact with the broader community in common public spaces. This activity strengthens the connection we feel to our neighbors and our community and at the same time, instills a sense of pride and stewardship. As a result, research indicates that parks can counter stress and social isolation, and reduce violent crime.



Connecting People with Nature

As any neighborhood, city or region grows, there is concern that residents may be distanced from undeveloped open spaces. Parks and trails can give people access to diverse natural environments—open hillsides, wet meadows, grasslands—and reinforce a sense of how people and nature are interrelated across the region. This Master Plan Update provided an opportunity to develop the trail system and work closely with regional partners to ensure that as the city grows, access to green spaces is preserved and enhanced.



Protecting Natural Resources

Parks and open spaces are invaluable for their ability to enhance air and water quality, promote water infiltration and reduce flood hazards, create a tree canopy that reduces the urban "heat island" effect, and provide habitat to protect the local ecosystem. Vegetation in parks absorbs carbon dioxide in the atmosphere, and help us adapt to a changing climate. The Master Plan Update will guide the City to plant trees, conserve natural vegetation and conserve water and energy.



Enhancing the Local Economy

Quality park systems also bring economic benefits in the form of increased property values, tourism dollars, and business attraction and retention. Home buyers want to live near attractive neighborhood parks, visitors to destinations like Legacy Fields bring spinoff benefits to the local economy, and businesses want to locate where skilled employees want to be.

Parks are major assets for the agencies that manage them, and require stable funding for operations and maintenance, even in difficult times.

The Master Plan Update will help the City achieve its economic development goals, and also strengthen the City's approach to asset management.

YOUR GUIDE TO THE DOCUMENT

The **Citywide Parks, Recreation & Trails Master Plan Update** is summarized here. In brief...

- Chapters 1 and 2 lay the foundation.
- Chapters 3, 4 and 5 lay out the Plans goals and policies.
- Chapter 6 identifies specific park improvements, their costs, and how to pay for them.



Chapter 1 defines the purpose of the Master Plan, the process of updating it, and its relationship to other City efforts. The chapter summarizes the key goals, policies, and implementation actions.



Chapter 2 describes what we learned about Tracy's people, our park system today, and our recreation needs and opportunities.



Chapter 3 lays out the Plan's goals and policies for **parks** in Tracy, including how much park land to create and what our existing and new parks should be like.



Chapter 4 features our goals and policies for **recreation programs** in Tracy, including what to prioritize to best serve everyone.



Chapter 5 establishes goals and policies for **trails** in Tracy, including how trails can serve us and where they should be created. *This Plan will work in tandem with the Citywide Roadway and Transportation Master Plan.*



Chapter 6 provides a detailed list of **planned park improvements**, estimates how much these improvements will cost, and suggests a funding strategy.

HOW WE UPDATED THE PLAN, AND HOW WE'LL KEEP IT UP TO DATE

The Plan Update process kicked off in April of 2019 and was organized into five main phases: Project Initiation; Community Needs Assessment; Vision, Recommendations and Projects; Draft Master Plan and Review; and Final Master Plan, and is anticipated to be complete in mid-2022. Tracy's Parks and Community Services Commission (PCSC) selected a consultant team, led by WRT, to engage the community, evaluate existing conditions, and ultimately, develop the plan. (More on community engageement on the following pages).

City Staff and the Parks Commission will conduct an annual review, evaluating current projects and programs alongside Plan goals and policies, and making adjustments as needed to keep them aligned.



COMMUNITY ENGAGEMENT

Hearing from residents of all ages, as well as park staff, stakeholders, and City representatives was critical to updating the Master Plan in a way that reflects and responds to the aspirations of the Tracy community. The robust engagement strategy strived to reach every corner of the population by hosting a wide variety of meetings, workshops, and events that made it easier for people to participate.

JUNE 2019	JULY 2019	AUGUST 2019
JUNE 13TH Community Partnership for Families Tracy FRC	**JULY 6TH** Tracy Farmers Market Downtown	**AUGUST 10TH** Tracy Farmers Market Downtown
JUNE 14TH Block Party, Front Street Plaza	**JULY 13TH** Tracy Farmers Market Downtown	School Presentations PTAs & other booster clubs
JUNE 15TH Foundational meetings with stakeholders	**JULY 20TH** Tracy Farmers Market Downtown	**AUGUST 15TH** Back to School Events at Tracy Schools
JUNE 15TH Tracy Farmers Market Downtown	Presentations to Boys & Girls Club, Tracy Rotary Club, Tracy Chamber of Commerce	Presentation to Tracy School District Administrators

Foundational Meetings

At the outset of the planning process in June 2019, the consultant team met with community leaders and park users during a series of foundational meetings to begin to identify issues and opportunities of the park, recreation and trail system. In August, the consultant team held individual interviews with four members of the Parks and Community Services Commission. These meetings explored a wide variety of themes including access, downtown activation, climate response, intergenerational and teen amenities, safety and inclusion, as well as public art. (Summaries of these meetings can be found in the Appendix.)

Advisory Commissions

The consultant team met with the Parks & Community Services Commission (PCSC) at key milestones to explore the Master Plan Update within the context of Tracy's current stage of development, the community's values, and other strategic initiatives. The PCSC, as the guiding advisory body for parks, recreation and trails, was critical in shaping the plan. The city's younger voices were heard during a meeting with the Youth Advisory Commission to understand what is working well, what could work better, and how Tracy parks, recreation programs and trails can nurture and support youth development more meaningfully.

Pop-Up and Targeted Outreach

Pop-up engagement stations are a great way to gather quick feedback by meeting people where they are and connecting with those who may not be able to, want to, or feel comfortable participating in more structured meetings. For the most part, these events tied into other events or were situated in busy locations. A block party, pop ups at the Tracy Farmers Market downtown, and several presentations enabled the consultant team to learn first-hand from the community what is important to them and what should

be priorities for the park system.

Surveys

To reach an even broader audience, the consultant team conducted a statistically-valid survey (by email-to-web and by phone) of a randomly-selected group of 472 residents.

The same set of questions were made available online from July 15 to September 3, 2019 for people who wanted to share their thoughts. Some 118 people took the online survey.

Questions inquired about user satisfaction, maintenance, cleanliness, and safety of the parks, trails and recreational facilities. Survey takers were also asked about desired programs, new facilities and amenities and what should be prioritized. Results of the surveys were shared with the public and used to assemble a comprehensive profile of the community's needs and preferences that in turn, helped form the basis of the updated plan. As a part of the iterative process, a third survey held online late in the process invited participants to weigh in on the Draft Plan goals and park improvement priorities.

Community Workshops

Two community workshops were held at key milestones. The first workshop was held on October 2, 2019 at the Lolly Hansen Senior Center to introduce the project, gather feedback about existing conditions and set goals for the park system.

A second workshop was held nearly a year later on August 27, 2020, and what a difference a year makes. Because of the COVID-19 pandemic, this was a virtual workshop using Zoom. The workshop was supplemented with an online survey to increase participation.

Chapter 2: Tracy Today includes more on what we learned from our engagement with Tracy residents.



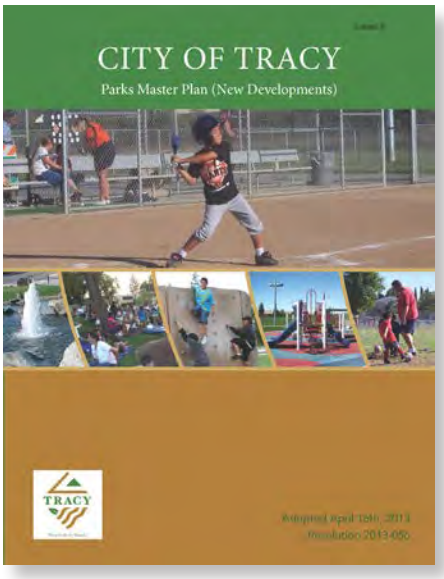
Our October 2019 community workshop gave Tracy residents a chance to think creatively about opportunities for this Plan update.

BUILDING ON OTHER PLANS

CITYWIDE PLANS

Parks Master Plan (New Developments) (2013)

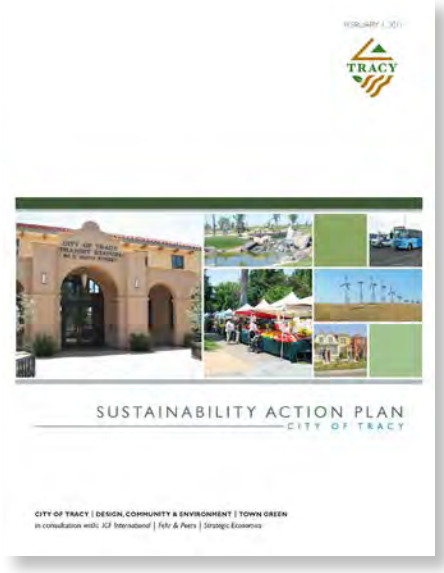
Adopted in 2013, the Parks Master Plan (New Developments) is the predecessor to this document. The 2013 Plan was part of an overall city effort to identify Tracy's infrastructure needs for parks, public facilities, water, roadways, stormwater, waste water, and public safety to enhance community's vitality, and attract and retain residents as well as businesses. A particular focus of the plan was addressing the demand for park and recreation facilities created or anticipated by new residential development in areas of growth.



Sustainability Action Plan (2011)

Recognizing the need to strike a balance among its economic, environmental and social sectors to achieve a healthy and prosperous community, the City of Tracy adopted a Sustainability Action Plan (SAP) in 2011. The plan set sustainability targets for 2020, and outlines 84 measures the City will undertake to achieve them. The Citywide PRTMP helps the City achieve many of these sustainability measures, including:

- Promote support for bicycling.
- New development with pedestrian-friendly network of streets and parks.
- Natural landscape and minimal turf in city parks.
- Recreational programs and activities for residents of all ages and incomes.
- Grants to fund projects that increase park capacity.



The Citywide PRTMP takes into account all of the citywide and specific plans that may impact the system.

City of Tracy General Plan (2011)

Every county and city in the state of California is required to have a comprehensive long-range plan—a General Plan—that lays out a vision for the future with goals, objectives, policies and actions that empower the City and community to work towards this vision. Adopted in February 2011, the General Plan is the principal policy and planning document guiding conservation,



enhancement and development across the City through 2025. The plan addresses elements such as land use, transportation, housing, economic development, public facilities, open space, and circulation that shape the community's character. The Tracy PRTMP Update is carefully aligned with the goals of the General Plan, specifically:

- Protecting its unique identity through the preservation of agricultural lands and the creation of new park and open space lands;
- Providing beautiful parks, exciting cultural and recreational amenities, and civic institutions that inspire community pride; and
- Meeting the transportation challenges of the future, so that people can travel safely and conveniently on foot or by car, air, bicycle, and transit.

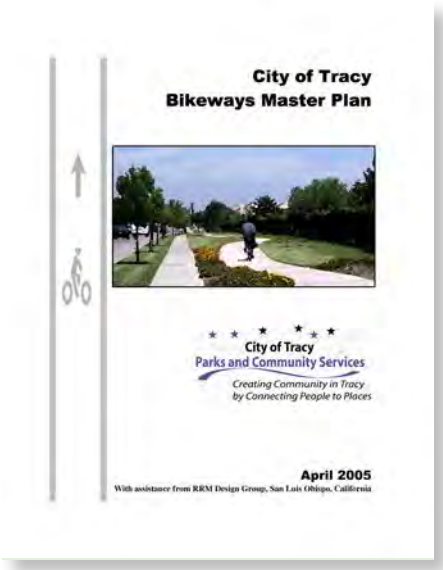
Urban Forestry Management Plan (In Progress)



Recognizing the importance of the tree canopy, green corridors and green infrastructure to the quality of life in Tracy, the City is creating an Urban Forestry Management Plan. The UFMP features policies, ordinances, and a management strategy to achieve a vision for a sustainable urban forest. The plan includes a public tree inventory, design and species specifications, natural resources management plan, and an urban forest cost/benefit analysis. The UFMP identifies opportunities to expand and nourish the urban forest in the city's parks, along its trails and elsewhere throughout the community.

Citywide Roadway and Transportation Master Plan (In Progress)

The Citywide Roadway and Transportation Plan (CRTP) includes updated direction for the bikeway network, replacing the Bikeways Master Plan from 2005. The emphasis of the prior plan was on developing a unified network of bikeway routes to serve both recreational and commuter needs by facilitating travel within the city limits to resources such as schools, parks, and employment centers, and also to adjacent city and county routes. The focus of the current update will be on creating a network of low-stress bike facilities throughout the city. The CRTP and the PRTMP will be used together to create the trail system.



City of Tracy Parks ADA Transition Plan (In Progress)

The city is in the process of updating its ADA Transition Plan. The purpose of the document is to plan accessibility compliance for the City of Tracy parks with the requirements of Title II of the Americans with Disabilities Act (ADA) and applicable state regulations. Transition Plan is a snapshot in time to evaluate and prioritize accessibility barrier removal throughout the City of Tracy Park system.

OUR STRATEGIC PLAN

The Parks and Recreation Department regularly reflects on what we do, why we do it, and what we need to do in the near term and long term to better serve Tracy residents. We call this strategic planning. Our most recent Strategic Plan, from 2018, lays out our mission, vision, values, goals, and strategies to guide decision-making in the next 3 to 5 years.

Our Mission

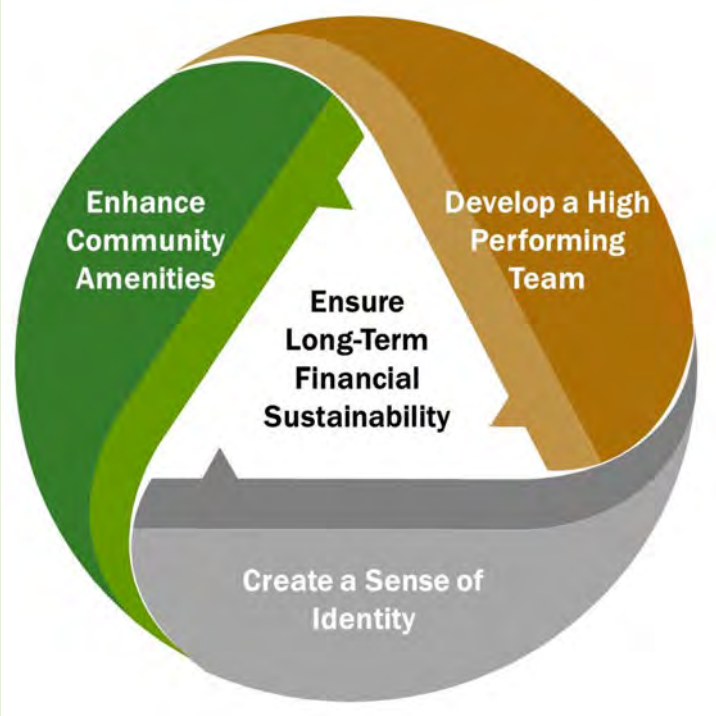
To ensure access to outstanding programs, services and community amenities that contribute to quality of life in Tracy.

Our Vision

Together we create memorable experiences that link Tracy's past, present, and future.

Our Strategic Goals

Provide the direction and focus for the organization, including resource decisions.



Each of these strategic goals is supported by a series of actions.

This Master Plan is aligned with our Strategic Plan, while looking longer term and in more detail..

VISION, GOALS + POLICIES

Lively conversations and exchanges of ideas between the consultant team, project partners, city departments, and Tracy residents of all ages took place through meetings, activities, and events over the two-year planning process. The result is a shared vision for the future of a healthy, active, socially intertwined community. The vision and goals are summarized below. A total of 11 goals address parks, recreation and trails. Each goal is described in more detail along with corresponding strategies and policies in chapters 3, 4 and 5.

VISION

- **Tracy provides great recreational opportunities at parks, sports complexes, greenbelts, trails and open space that are diverse and connected, building quality of life now and for the future.**
- **Tracy's parks are inviting, well-maintained, safe, aesthetically-pleasing and comfortable, with features to mitigate climate extremes and extend use.**
- **Parks balance the need for programmed recreation and casual enjoyment. They include both state-of-the-art recreation facilities and features that make parks special and memorable.**
- **Recreation programs offer something for everyone.**
- **Tracy's parks are linked with a trail system that provides active recreation opportunities and linked to preserved natural areas.**

PARKS

GOALS



A Park System for a Growing City

Tracy's racially and ethnically diverse population is projected to grow by 48,341 between 2020 and 2040. Tracy's park system will continue to grow and be enriched to meet the needs of a growing community with a high quality of life.



Well-Maintained Parks

The City of Tracy will remain committed to maintaining our existing parks at a high level. This includes design that considers maintainability, achieving efficiency in operations, and providing equitable and reliable funding for both maintenance and capital replacement of amenities and infrastructure.



Safe Parks

Tracy residents must feel safe in our parks. The City will continue to embed safety into park design, programming and operations.

POLICIES

1A. Park Types

1B. Park Acreage Level of Service

1C. Access to Parks

1D. Park Land Dedication and Park Development Impact Fees

1E. Build in Flexibility

1F. Conformance with City Standards and Guidelines

1G. Concurrent Development

1H. Public Access

1I. Specific Plans and the Master Plan

2A. Maintainable Design, Planting and Amenities

2B. Efficient Operations

2C. Adequate Funding for Park Improvements and Maintenance

3A. Design for Safety

3B. Park Activation

3C. Lighting for Safety

3D. Security Cameras

3E. Park Restroom Safety

3F. Park Monitoring

GOALS

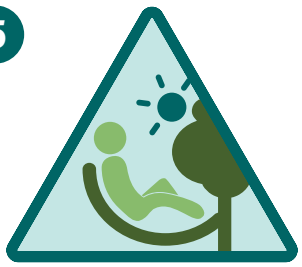
4



Equitable & Inclusive Parks

The Parks and Recreation Department is committed to creating and promoting inclusion across all the public spaces, facilities and programs we manage. We aim to ensure that everyone has access to the benefits of quality parks and recreation, including persons of color, persons with cognitive and physical disabilities, LGBTQ+ individuals, and people who have immigrated from other countries.

5



Comfortable & Attractive Parks

Tracy's parks will feature an expanded tree canopy, shaded amenities, and restrooms located in close proximity to play areas when installed. Lighting will extend parks' usability to winter evenings and nights year-round.

6



Interesting & Diverse Parks

Tracy's parks will provide recreational opportunities for everyone. They will support a diversity of experiences, have multi-generational appeal, and be successful gathering places for the whole community.

POLICIES

4A. Equitable Distribution of Parks and Facilities

4B. Inclusive Places

4C. Accessibility and Universal Design

5A. Expanded Tree Canopy

5B. Shaded Amenities

5C. Water Features

5D. Restrooms

5E. Lighting for Activation

6A. Balance of Programmed and Unprogrammed Spaces

6B. Non-Traditional Elements

6C. Downtown Plazas and Community Gathering Spaces

6D. Nature Park and Preserved Open Spaces

6E. Gardens

6F. Public Art

RECREATION

GOALS

7



Sustainable Parks

Parks can have great ecological value by preserving natural vegetation, providing suitable habitat, and cooling the air. By enabling more people to walk and bike, our trail system will help us reduce greenhouse gas emissions. The City will preserve and enhance natural environments in future parks and employ ecological strategies in the design and maintenance of existing parks.

8



Full Range of Recreation Facilities

Tracy's profile indicates a high demand for sports and fitness activities across the board. The City will deliver new facilities for aquatics, indoor recreation, and sports, while broadening our recreation amenities to keep pace with changing preferences and new trends. Recreation facilities will also be updated to provide full accessibility.

9



Recreation Programs that Fit the Community

The Department will continue to evaluate and refresh its recreation program offerings to ensure that community demand is being met. The Department will align its cost recovery goals and pricing strategy so that the resources are focused on essential programs, while also enabling "value-added" programs to emerge.

POLICIES

7A. Create Habitat Value

7B. Support Water Quality and Groundwater Recharge

7C. Water and Energy Conservation

7D. Support Walking and Biking

8A. Recreation Facility Level of Service

8B. Diverse Recreation Needs

8C. Equitable Access

9A. Recreation Program Priorities

9B. Service Classification and Cost Recovery

9C. Cost of Service Analysis

9D. Pricing Policy and Strategies

9E. Program Monitoring and Updating

9F. Equitable and Inclusive Programming

9G. Staff Training and Organizational Support

9H. Inclusion Policy

9I. Performance Measures

TRAILS

GOALS

10



Trails for Recreation and Active Transportation

Tracy's trail system will be planned and designed to support both recreation and travel, serving everyone from casual walkers to high school cross-country teams and cycling clubs to people of all ages who could use trails as a healthy transportation option.

11



A Complete and Connected Trail System

The City recognizes the strong community desire for trails, and will work to create a connected and complete network of multiuse trails along roadways, rail rights-of-way, and canals, and in future development areas..

POLICIES

10A. Trails that Support Recreation

10B. Trails that Support Active Transportation

11A. Coordinate to Create a Complete Network

11B. Linear Park and Open Space Trails

11C. Canalside and Railside Trails

11D. Trails along Multimodal Corridors

11E Trails with New Development

11F. Signage for Wayfinding, Interpretation and Identity

11G. Safety on Trails

11H. Comfort on Trails

IMPLEMENTING ACTIONS

To meet the goals and policies established in this plan, Tracy will need a combination of improvements to existing parks, development of new parks and trails, and investment in recreation facilities and programs. These are laid out in detail in Chapter 6, along with estimated costs and funding strategies. The implementation program is summarized here.

IMPROVING EXISTING PARKS

A park-by-park assessment was conducted in August 2019, identifying the general condition of each site; issues pertaining to site access and use; and park-specific needs, wants, and aspirations.

The Plan identifies three categories of park improvements: "critical" (maintaining what we have); "strategic" (improving what we have): and "visionary" (park transformations). The Plan also suggests a phasing approach to these improvements over the next 15 years.

A rough order-of-magnitude cost estimation of park improvements finds a total of approximately $56 million to $75 million in costs over the next 10 to 15 years, with costs spread across park tiers and implementation phases (Tables 1-1 and 1-2).

Table 1-1
Estimated Improvement Costs by Tier

TIER	ESTIMATED TOTAL COST
Tier A: Critical	$7,435,000 to $10,202,000
Tier B: Strategic	$14,200,000 to $18,125,000
Tier C: Visionary	$34,846,000 to $46,444,000
TOTAL	**$56,481,000 to $74,771,000**

Table 1-2
Estimated Improvement Costs by Timing

TIMING	ESTIMATED TOTAL COST
Short-Term (Years 1-5)	$43,135,000 to $57,205,000
Mid-Term (Years 6-10)	$11,672,500 to $15,055,000
Long-Term (Years 11+)	$1,673,500 to $2,511,000
TOTAL	**$56,481,000 to $74,771,000**

Notable projects include:

- Expansion of Gretchen Talley Park;
- New park master plans and improvements to Ritter Family Ballpark, Lincoln Park, and El Pescadero Park.
- Strategic enhancements to Clyde Bland, Robert Kenner, and Joseph Ceciliani parks, and Tracy Sports Complex, adding recreational amenities and undertaking major renovations;
- Critical improvements to parks across the system, with more significant improvements at Arnulfo Plasencia Fields and Dorothy Evans, Bailor/Hennan, and Veterans parks .

A summary of park improvement recommendations for all parks is provided in Chapter 6.

Table 1-3
Estimated Improvement Costs by Funding Source

FUNDING SOURCE	ESTIMATED TOTAL COST
General Fund	$44,966,000 to $58,667,000
Landscape Maintenance Districts (LMDs)	$8,315,000 to $11,354,000
Various (Citywide)	$3,200,000 to $4,750,000
TOTAL	**$56,481,000 to $74,771,000**

BUILDING NEW PARKS + TRAILS

The City of Tracy is planning the expansion of Legacy Fields as well as an Aquatics Center; a multi-generational recreation center; and the Tracy Nature Park, improvements totalling 202 acres.

As of this writing, some 63 acres of new park land is planned as part of specific plans and development proposals for Avenues, Ellis, Hillview, Rocking Horse, Tracy Hills, and Tracy Village. Future development at the "Bowtie" could add park land Downtown.

New parks in future development areas will be required to provide 4 acres of new park land per 1,000 residents, allocated, located, and designed according to the policies of this Plan. Estimated costs for future neighborhood, linear, and community parks are summarized in Table 1-3.

In addition to future developer-provided parks in urban expansion areas, the City will pursue land acquisition and park development opportunities in areas of the City that are more than ½ mile from an existing neighborhood or community park. Park access gaps and opportunity areas are shown on Figure 1-3. Funding for future parks in these areas may come from a variety of sources including future development; existing LMDs; and the General Fund.

The Storm Drainage Master Plan (SDMP) identifies the location of existing and proposed detention basins in Tracy. Detention basins in residential areas, especially when larger than five acres in size, should be considered for joint recreational use where feasible; this will require an integrated design approach that elevates recreational experience.

Trail Opportunities

This Plan proposes a trail system that builds on the City's existing linear parkways, multiuse paths, the planned bikeway system, opportunities for trails along rail, irrigation, and utility corridors, and opportunities for trails in existing or future preserved open spaces. The trail system should also be seen as a "co-location" opportunity for future parks. Off-street trails and pathways, when connected to park land, provide important recreation opportunities and also enhance park access.



Phase 1 development of Legacy Fields Sports Complex has created new lighted fields for baseball and soccer.

Figure 1-1
Concept for Improvements to Ritter Family Ball Park

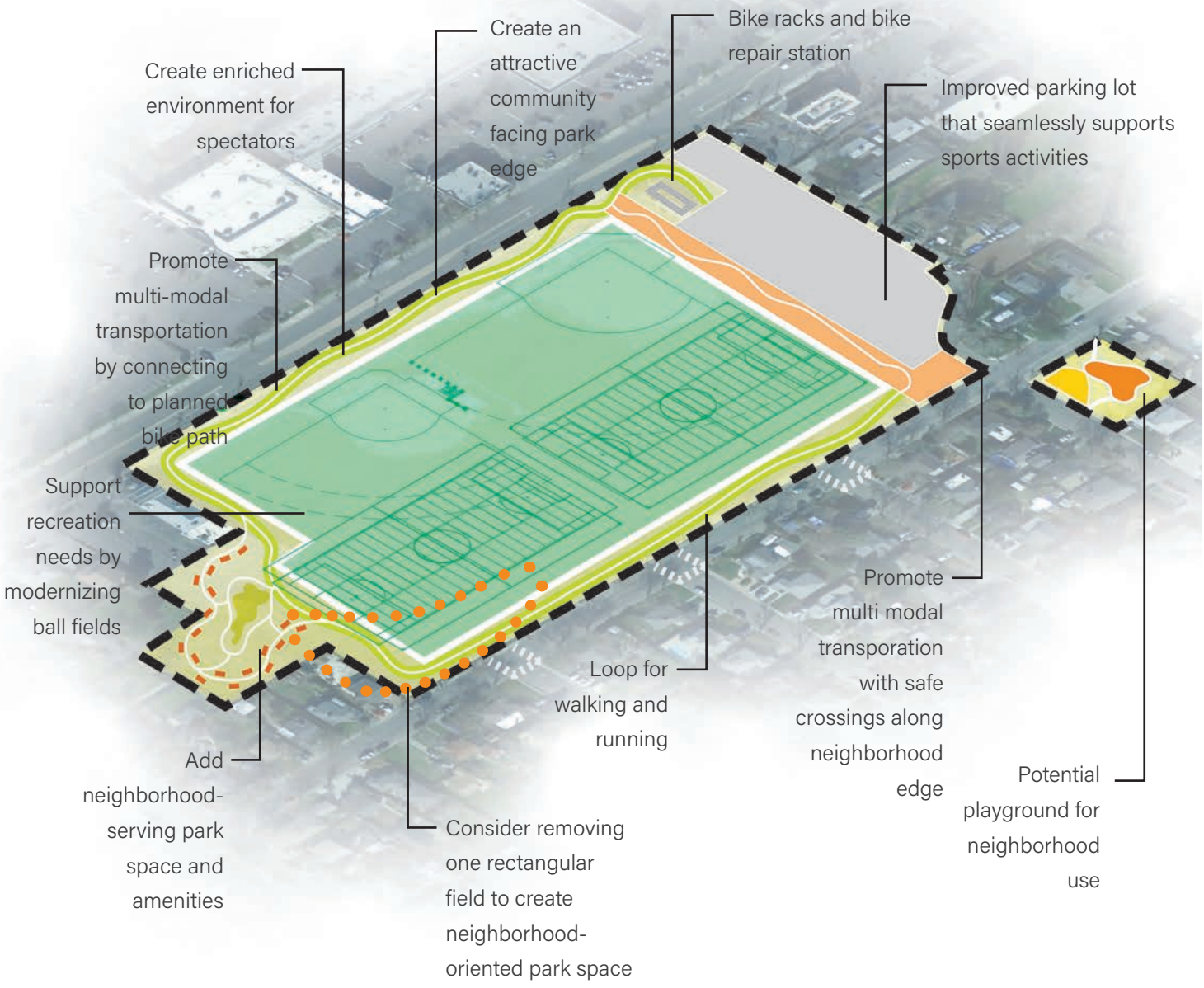


Figure 1-2
Multiuse Trail through Park or Open Space (Typical)

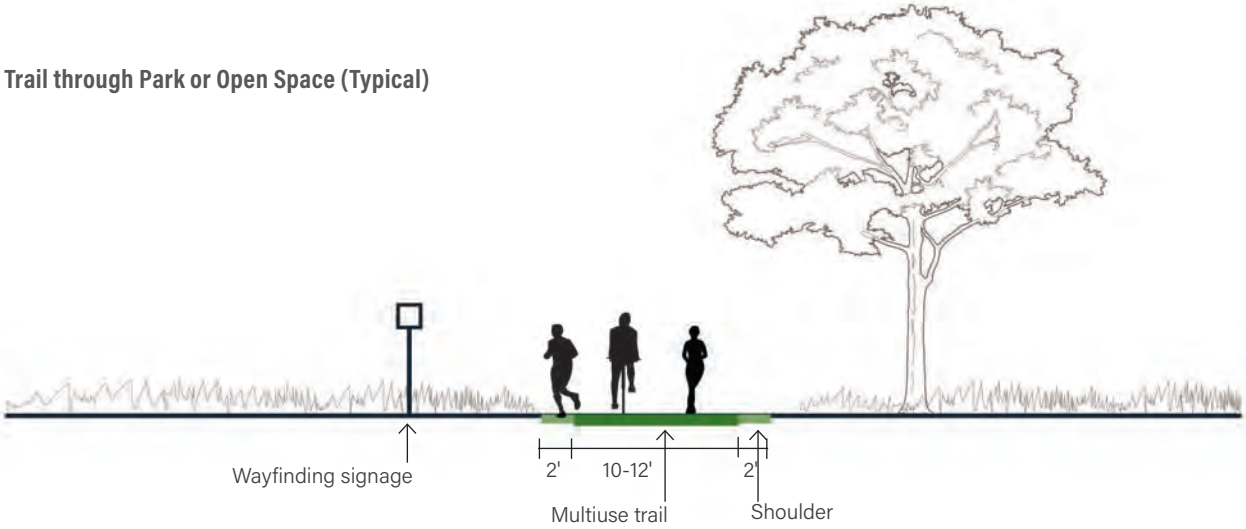
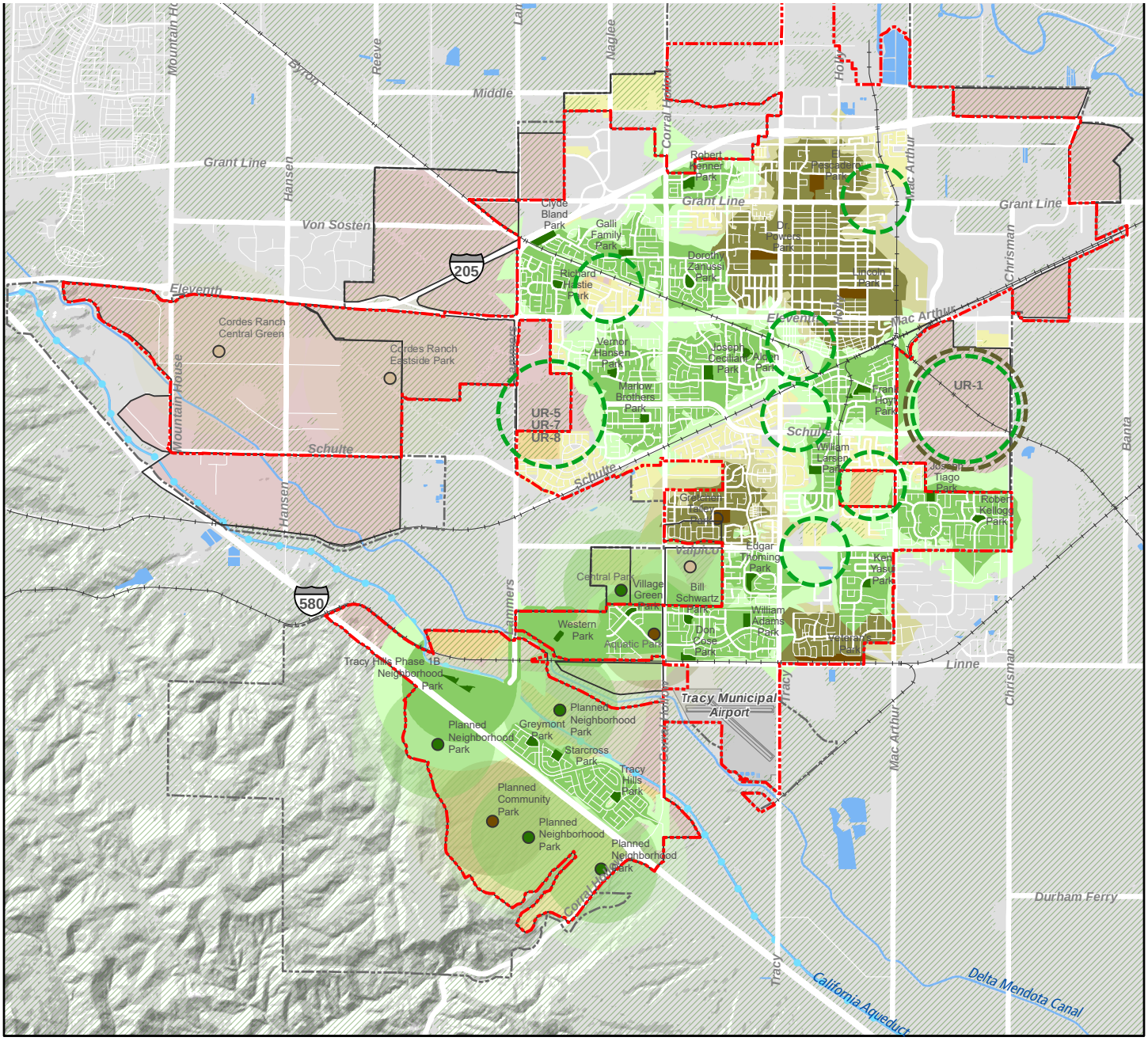


Figure 1-3

Park Access Gaps and Neighborhood Park Opportunity Areas



- Tracy City Limit
- Sphere of Influence
- Aqueduct
- Rivers/ Canals/ Ponds
- Agriculture / Undeveloped
- Airport
- Future Development Area (Outside Service Areas)
- Residential
- Neighborhood Park
- Service Area: 1/2 Mile
- Service Area: 3/4 Mile
- Planned Neighborhood Park
- Neighborhood/Linear Park Opportunity Area
- Community Park
- Service Area: 1/2 Mile
- Service Area: 3/4 Mile
- Planned Community Park
- Planned Private Park
- Community Park Opportunity Area

UR-1 should include a minimum of 4 neighborhood parks and 1 community park. UR-5, UR-7 and UR-8 must be served by adequate neighborhood parks.

N

0 0.325 0.65 1.3 Miles

RECREATION AMENITY NEEDS

This Master Plan provides new population-based standards for an array of amenities, to ensure that we are serving the recreation needs of the community. The standards are based on a range of factors, from national and regional best practices to demonstrated local demand. This section summarizes how many additional amenities of each type would be needed to meet needs in 2040, assuming that the parks currently being planned will have been completed.

Priority and location characteristics for each amenity are also outlined. Our prioritization is informed by the level of need, the location of access gaps, and public input provided during the Plan Update process.

A summary table of recreation amenity needs is provided in Chapter 4: Recreation.

Sports Fields

Today, Tracy has 19 baseball/softball fields and 20 soccer fields. An additional 13 baseball/softball and seven soccer fields are planned, all as part of the Legacy Fields sports complex expansion. An estimated 3 additional facilities may be needed, including fields that can host adult softball tournaments on a larger scale, and the City currently lacks 90' base path baseball fields.

Sports Courts

Today, Tracy has 36 basketball courts (half or full), 16 tennis courts, six horseshoe courts, five sand volleyball courts, and four bocce courts. Additional basketball courts (2), tennis, horseshoe, and bocce courts (1 each) are planned. Tracy should focus on providing additional basketball courts (13), tennis and pickleball courts (11 and 14, respectively). There will also be demand for additional sand volleyball (4), shuffleboard (3) and bocce courts (2), and a roller hockey court. The City lacks indoor recreational facilities; beyond the planned 30,000-square foot multigenerational recreation center, there will be demand for an additional 182,,000 square feet of indoor recreation space.

Other Recreational Facilities

To meet standards, Tracy will need 46 playgrounds, eight dog parks, six large group picnic shelters, five climbing walls/rocks, three community gardens, three disc golf courses, three BMX bike parks/bike pump tracks, two pools, a water play area, and an environmental education facility. Some of these may be privately operated and not located on City land.

See Chapter 4 for more detail.



16
BASEBALL/ SOFTBALL FIELDS



6
SOCCER FIELDS



12
TENNIS COURTS (& **14** PICKLEBALL COURTS)



8
DOG PARKS



6
LARGE GROUP PICNIC SHELTERS



3
DISC GOLF COURSES



1
ENVIRON-MENTAL CENTER



182K
SF OF INDOOR REC SPACE

&
MORE

UNDERSTANDING COSTS

Capital Improvement Costs

Rough order of magnitude costs for each proposed park amenity are provided in Chapter 6, to assist the City with planning and prioritizing future park and recreation improvements. These probable costs may rise or fall based on a variety of factors, including, but not limited to, final finish selections, unique site conditions, and coordination with comprehensive park improvements.

Maintenance Costs

It is critically important to view the financial sustainability of the Parks and Recreation System through the concept of "Total Cost of Ownership" as shown in the graphic below.

The City will need to closely monitor resources to ensure that the assets of the park system reach the anticipated lifecycles. Maintenance funding should grow to accommodate new park amenities and development in the future. Maintenance standards and expectations are a major driver of costs.

The Master Plan estimates the cost to maintain each type of park in the system. It compares Tracy's park system with those of five benchmark cities, and makes recommendations for maintenance standards, a work order management system, and taking a cost of service approach to contracting.

Lifecycle Replacement

Tracy parks and landscape maintenance operations will need to closely monitor the assets of the park system throughout their lifecycle to ensure the safety of park patrons. It is highly recommended that assets be replaced to ensure efficient and effective utilization of operational dollars. The lifecycle replacement schedule found in Chapter 6 should be utilized as a guide for the creation of an asset management system that will guide future actions.

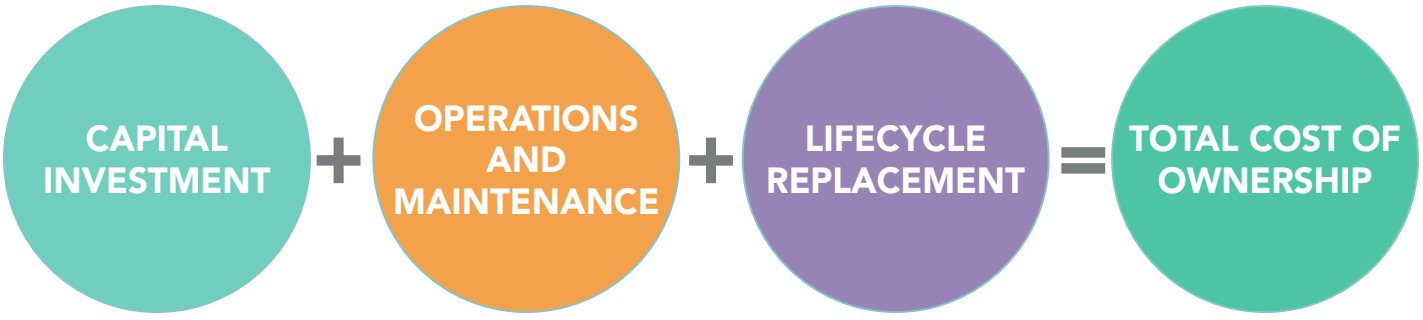
FUNDING STRATEGY

The Citywide Parks, Recreation & Trails Master Plan identifies various mechanisms for funding the construction and acquisition of new park facilities as well as the continued operation and maintenance of existing facilities and recreational programs. These include:

- Capital financing sources such as General Obligation bonds, Limited Obligation bonds, revenue bonds, and land dedication or in-lieu fees; developer impact fees; pay-as-you-go; public-private partnerships; and grants.
- Maintenance and operations funding sources including special financing districts and user or property-related fees.

The type of financing mechanism or mechanisms needed will depend on the types of facilities and improvements to be constructed and maintained. The pattern, timing, and predictability of expenses will also affect the choice of revenue mechanism(s).

TOTAL COST OF OWNERSHIP



PARKS PLANNING AND DEVELOPMENT IN TRACY

Parks Planning & Development is a division within the Parks & Recreation Department that is responsible for park and recreation facility planning, parkland acquisition, park master planning and the design and development of new – or renovation of existing parks and landscaping. Additionally, the Division ensures that projects fulfill the needs of the community, meet City standards for design, and comply with land use regulations. Parks Planning & Development ensures that all parks and recreation development within the City supports sustainable, innovative, accessible, safe and responsive facilities through community participation and transparent practices.

City-Built Park Projects

The City of Tracy can build parks using various funds including fees that are collected from residential development that accumulate over time. Planning our parks from start to finish is approximately a two year process.

Developer- Built Park Projects

In many cases in the City, developers build new parks on behalf of the City as a condition of residential subdivision construction. California law requires that either land or fees be dedicated for park or recreational use. Developer-built parks can often be delivered faster than a City-built park project.

To ensure successful, usable parks, the City will not accept for reimbursements or payment:

- Land that has any easements (underground or overhead) that precludes the City from building or using the easement space;
- Any area that useability less than 50 feet wide;
- Any grade or slope that does not allow full use and access;
- Any land or area that has hazardous or environmental limitations;
- Land that is otherwise serving a conservation purpose aside from a useable park;
- Land that could not be developed for any other purpose other than a non-useable park space.

Park Type and Size Requirements - Overview of Policy 1A

An updated park classification system and updated park definitions and standards are included in this Master Plan Update. Parks will now be classified according to the table on this page, with associated size requirements.

Table 1-4
Park Type and Size Requirements

PARK TYPE	SIZE REQUIREMENTS
Neighborhood Parks	2 to 10 acres*
Linear Parks	3 acres + (at least 50 feet wide by 0.5 miles long minimum)
Community Parks	10 to 30 acres
Sports Complexes	10 to 100+ acres
Special Use Parks	Less than 1 acre to 100+ acres
Mini Parks	Less than 2 acres

* Neighborhood Parks must be of a shape suitable for park use. Neighborhood Parks between 2 and 4 acres must be connected via a continuous accessible route through a linear park or greenbelt/ open space to another existing park or planned park at or above 4 acres in size. Proposed connections using standard city sidewalk will not be considered.

Park Acreage Level of Service – Overview of Policy 1B

Tracy currently provides 4 acres of park land per 1,000 residents. This level of service will continue to be the standard for new development while also working to diversify the types of parks.

Park allocations shall be as follows:

- 3 acres per 1,000 residents for new neighborhood parks and linear parks
- 1 acre per 1,000 residents for new community parks, sports complexes and special use parks
- City has discretion over the mix of park types (e.g. the mix of neighborhood and linear park land) that may be eligible for credit.

To calculate the park acreage requirement for a given residential project, the average residents per household shall be calculated at the time of final subdivision map approval using the most recent California Department of Finance, Demographic Research Unit, Table E-5 per household estimate.

Park acreage that is collocated with stormwater detention basins will be counted at a percentage of equivalent to the percentage of the year the basin is designed to be available for recreation based on anticipated drainage.

Snapshot of Estimated Capital Costs for New Parks

The City's policies and guidelines for park development allow for flexibility in the construction of new parks. To assess costs for future parks, hypothetical examples of the preferred park types were created. These examples are based on typical park sizes, facility requirements, and other development considerations as outlined in this plan. It is important to recognize that the design development of actual parks will vary from these examples, based on factors such as site topography, character, local recreation preferences, and facility needs that vary geographically. However, development costs are anticipated to be similar in terms of average cost per acre. The table below represents the estimated total cost per associated with three hypothetical park examples.

Table 1-5
Estimated Capital Costs for New Parks

PARK TYPE	ESTIMATED TOTAL COST PER PARK
Neighborhood Park (5 acre)	$5,422,275*
Linear Park (1 mile)	$3,348,000*
Community Park (15 acre)	$17,226,000*

* Capital costs may be expected to increase over time by an estimated 2 to 3% annually.

FOR OUR DEVELOPER PARTNERS

The Citywide Parks, Recreation and Trails Master Plan Update provides critical community-based design, planning, and policy direction for our development partners. The goal of this section is to provide a synopsis of the most critical developer-related information and policies related to park planning and development. This section includes:

- Overview of Developer-Built Park Project Process
- Park Type and Size Requirements – Overview of Goal 1, Policy 1A
- Park Acreage Level of Service – Overview of Goal 1, Policy 1B
- Snapshot of Estimated Capital Costs for New Parks

For more detailed information related to these topics, refer to the associated sections within the Master Plan.

CHAPTER 02

TRACY TODAY



Tracy's Parks, Recreation, and Trails System reflects much of what makes the community so special. Taking stock of the existing system is an important first step. This goes beyond counting acres, buildings, and amenities to understand how our facilities are being used and maintained; what programs are not to be missed; what activities would be welcomed. Do all residents have access to parks and recreational programs nearby, and do they feel safe using them? Understanding Tracy today helps us address our concerns and aspirations as we enrich our parks, trails, and programs over the next 15+ years and continue to foster a socially connected, healthy, and growing community.

IN THIS CHAPTER:

- 15 Key Findings
- Our Community
- Our Park System
- Our Needs
- Our Aspirations



New homes come with new parks in the Ellis neighborhood.

15 KEY FINDINGS

The first phase of the Master Plan Update entailed data gathering, technical analysis, and community engagement examining all aspects of Tracy's Parks, Trails, and Recreation System. Fifteen key findings stood out and have formed the basis for the Master Plan Update's goals, policies, and proposed park improvements and programming changes.

1. TRACY CONTINUES TO GROW

Tracy's population is projected to grow by 48,341 between 2020 and 2040, as it is increasingly recognized for its high quality of life and location within the larger Bay Area commute shed. The population is racially and ethnically diverse and will become more so. Tracy's median household income is significantly higher than the State's overall, while the per capita income is lower. This suggests the prevalence of young professional families with two income earners, and extended families living under one roof.[1]

2. WE ARE COVERING THE BASICS

Tracy's park system has a collection of community, neighborhood, and mini parks, providing 4.05 acres of park land per 1,000 residents—meeting its current standard of 4 acres per 1,000 and fairly typical for similarly sized cities in California. According to the statistically-valid survey conducted for the Master Plan Update, residents are most likely to visit our parks to bring children, to exercise, and to participate in sports. Households with children and with adults in their 30s are most likely to use parks. In other words, Tracy's park system seems to be designed and programmed today in a way that meets the needs of youth and adults with small children.

3. PARK SYSTEM GROWING PAINS

Tracy's park system is beginning to feature more types of parks and public spaces to serve what has become a larger and more diverse community. This process needs to be supported by an updated park classification system, updated park definitions and standards that define how the City should invest in new parks, from downtown activated plazas, to sports complexes, to open spaces featuring natural conditions.

4. MAINTENANCE IS A TOP PRIORITY

Our park-by-park site assessment found most parks to be in fair to good condition, and community members recognize the great work of the Public Works Department's parks, sports facility and landscape maintenance team. Still, improving and maintaining existing parks was identified as a high or very high priority by nearly 4 out of 5 residents who responded to the survey. The various Landscape Maintenance Districts and Community Facilities Districts that support over half of Tracy's parks do so at varying funding levels, resulting in inconsistency across the system. Finding a way to provide adequate and equitable funding for maintenance will be an important challenge.

5. PARKS MUST BE SAFE AND ACCESSIBLE

Safety was identified as a high priority by community members in the survey and in our engagement activities. It will be critical for Tracy to incorporate safety features into park patrol, maintenance, lighting, design and programming. Tracy's parks also need to be universally accessible; many fall short of this today.

6. NEIGHBORHOOD PARKS NEEDED

While Tracy meets its overall park acreage standard today, it falls short in the Neighborhood Parks category. Many Tracy residents do not live within a 3/4-mile walk of a Neighborhood Park, much less the more typical standard of 1/2 mile. Gaps in Neighborhood Park access should be addressed where possible, by rethinking existing parks and/or by finding new park land opportunities.

7. MAKING MINI PARKS WORK

Many Tracy neighborhoods have "mini parks" (typically less than an acre). Community members question the value of these parks, and the current Master Plan does not endorse creating more of them—but they have continued to be added. How can these parks contribute more to quality of life?

1 *See Citywide Parks, Recreation & Trails Master Plan Update Comprehensive Profile (January 2020) for more detail.*

8. INTERESTING AND DIVERSE PARKS FOR ALL

Stakeholders, Parks Commissioners, and community members all communicated the desire for parks that created a better experience for a diversity of people. Parks should have areas for informal recreational use, more enriching playgrounds, and playgrounds with elements that include and invite children of all abilities.

Parks should have multi-generational appeal, and be more successful gathering places for the community. Indeed, "ensuring recreation opportunities are available for everyone" ranked among the top priorities for Tracy residents in our survey. Stakeholders talked about special events, concerts and performances as an area Tracy could focus on more to build community and keep people around on weekends.

9. EXTENDING PARK USE: EVENINGS AND SUMMERS

Community members spoke about the need for more shaded areas and more access to water, to make parks comfortable on hot summer days. More trees and shaded areas were identified as the improvement most likely to make more people use parks. More lighting in parks would also allow parks to be usable at night and in the evenings on short winter days—especially valuable in a commuting town like Tracy. Adequate and equitable funding for on-going maintenance will be an important challenge to sustain and continue the conditions/service levels of parks.

10. ENTHUSIASM FOR NATURAL AREAS

Creating open space areas and nature trails came in as a high priority of Tracy residents overall in the survey. The proposed nature park just south of Legacy Fields and the preserved open spaces proposed as part of the Tracy Hills and Cordes Ranch specific plans can become a vital new element of the parks and recreation picture in Tracy.



Water helps to make parks comfortable on hot summer days.

11. A TRAIL SYSTEM WOULD BE HIGHLY VALUED

Stakeholders showed a strong interest in developing a network of multiuse trails in Tracy, noting the value of trails for everyone from casual walkers to high school crosscountry teams to people of all ages who could use trails as a healthy transportation option.

12. MEETING OUR RECREATION FACILITY NEEDS

Tracy's demographic profile indicates a high "market potential index" for sports and fitness activities across the board, including for such core, high-participation sports as basketball, soccer and baseball. Tracy's planned aquatics center, the planned multigenerational recreation center, and expansion of Legacy Fields appear justified based on projected need. The current standards also show a need for dog parks, community gardens, tennis courts, large group picnic shelters, disc golf, environmental education, and soft-surfaced paths. The Master Plan Update should revisit these standards and direct resources to recreation facilities that are most needed.



Connecting neighborhoods and parks with trails is a high priority for Tracy residents.

13. RECREATION PROGRAM REFRESH

Tracy offers a good mix of recreation programs in a range of core program areas that will be defined in the Master Plan Update. Our findings suggest that programs in the "saturated" or "decline" stage of their lifecycle are somewhat overrepresented. This is an opportunity for the Department to refresh its program offerings. Expanding recreation and activity programs for teens was the highest programming priority according to the survey, echoing themes we heard from stakeholders – but programs and activities for kids, seniors and adults were also broadly supported.

14. THINKING STRATEGICALLY ABOUT SERVICES

With the Master Plan Update, the Department has begun the process of classifying its services according to a pyramid with "essential" services at its base, "important" ones in the middle, and "value added" services at the top.

Tracy can align its cost recovery goals and pricing strategy to support this, so that Department resources are focused on "essential" programs, while "value added" programs can be expected to recover more of their costs with user fees.

15. MULTIPLE SUSTAINABILITY BENEFITS

Tracy's parks feature mainly planted native and ornamental trees and shrubs as well as turf grass; they do not support any rare or endangered plant species, and most wildlife species in parks are those that have adapted to human-modified habitats. Still, there are "special status" (i.e., rare or endangered) animals that occur in the vicinity of Tracy and which could make use of parks and open spaces. Further, we have gained awareness of the multiple ecological benefits that parks can offer: by providing suitable habitat, but also by using low-water-use plants, promoting stormwater infiltration and groundwater recharge, and cooling the air. Tracy has the opportunity to preserve and enhance natural environments in future parks, and employ ecological strategies in the design and maintenance of existing parks.

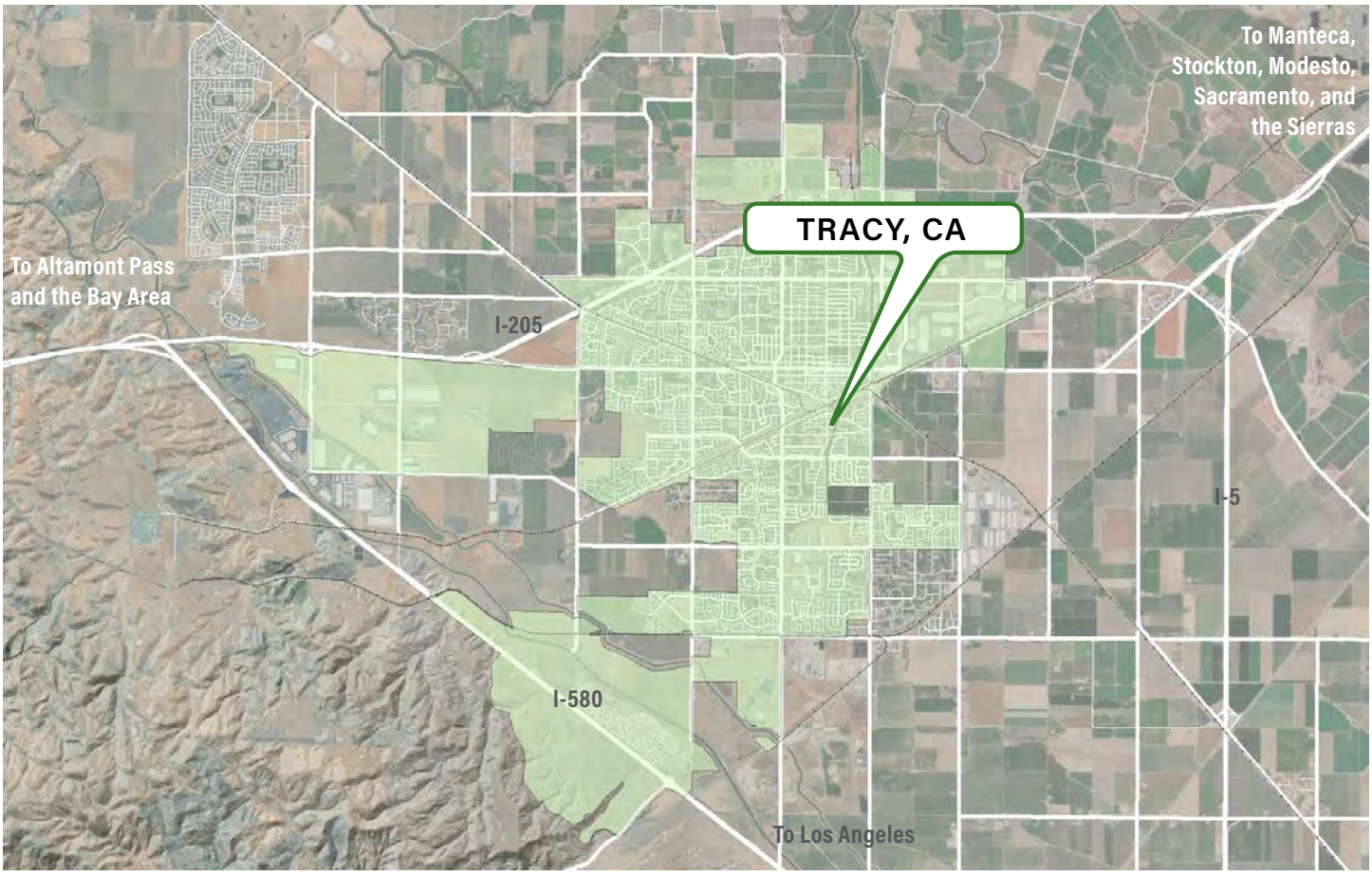


Civic Center Plaza

OUR COMMUNITY

Who are we planning for? In a growing community like Tracy, it is necessary to understand the makeup of the population and how the demographics are changing to anticipate and plan for the potential impact. To that end, we conducted a demographic analysis that reflects the total population and its key characteristics— age, income, race, and ethnicity. Future projections are all based on historical patterns. A description of the methodology, definitions, and full analysis is included in Appendix A.

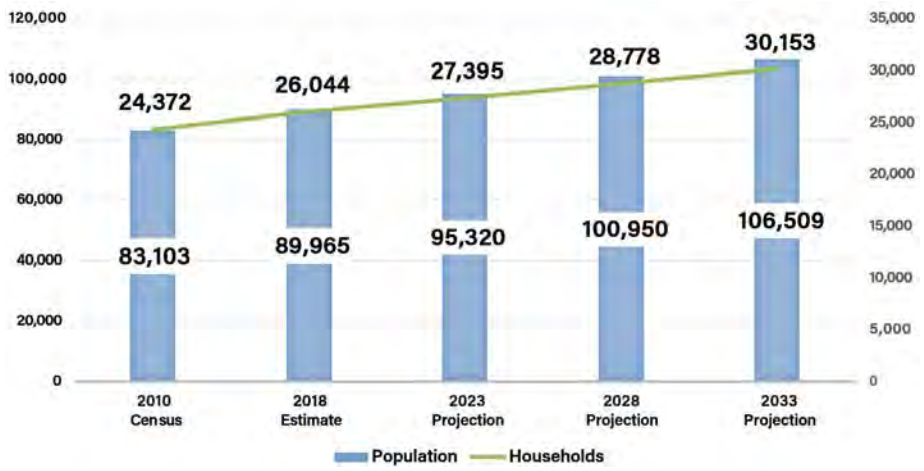
Figure 2-1
City of Tracy and Environs



A GROWING CITY

The City's population has experienced a growing trend in recent years and is estimated at 89,965 individuals in 2018 (US Census, American Community Survey). Projecting ahead, the total population is expected to continue to grow over the next 15 years. By 2033, the City is expected to have 106,509 residents (Environmental Systems Research Institute, 2019). By 2040, the City projects a population of 141,341.

Figure 2-2
Population & Households



Sources: US Census Bureau, 2019; ESRI, 2019.

A DIVERSE CITY

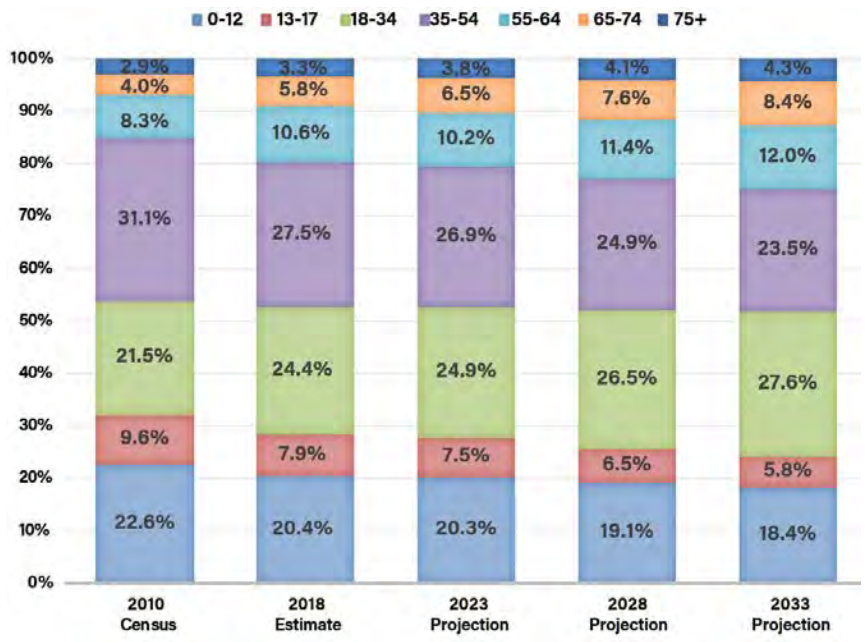
AGE

Looking at the population by age segment based on US Census data illustrates a balanced distribution across the City in 2010.

Over the next 15 years, the 0-17 age segment is projected to decrease by 4% while those 55 and older are projected to increase by 5%, making up approximately one quarter of the population by 2033. This reflects Baby Boomers shifting into the senior age segment.

Given the differences in how the active adults (55 and older) participate in recreation programs, the trend is moving toward having two or three different program age segments for older adults. As the park and recreation system evolves it will be important to ensure meaningful recreational experiences are available for active adults falling within the 55-64, 65–74, and 75+ age segments.

Figure 2-3
Population by Age Segment



Sources: US Census Bureau, 2019; ESRI, 2019.

RACE & ETHNICITY

Tracy's current population is diverse. 2018 estimates show that 50% of the City's population is White Alone, while the Some Other Race category (18%) and Asian (15%) represent the largest minorities. Predictions for 2033 project the City's population will diversify even further with a decrease in the White Alone population by approximately 6% and an increase of 3% in the Some Other Race category.

Based on the 2018 estimate, those of Hispanic/Latino origin represented 41% of the City's total population, which is anticipated to experience a significant increase to 48% by 2033.

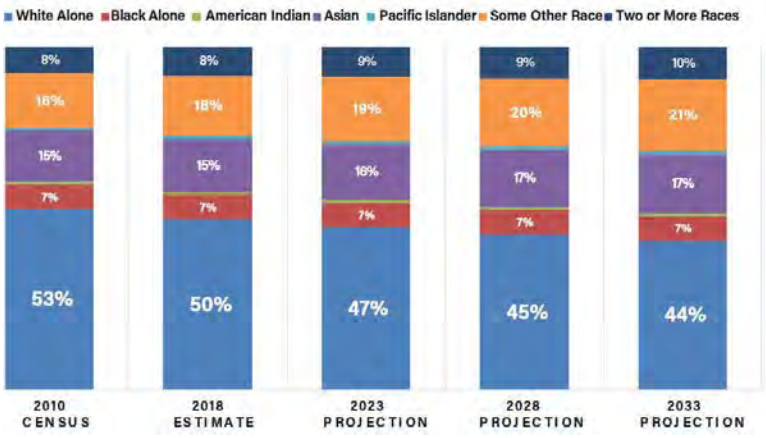
INCOME

The City's per capita income level falls below state and national averages, while the median household income levels are significantly higher than both the state and national averages. This can be directly correlated to Tracy having an average household size of 3.4, which is significantly higher than the state (2.92) and the US (2.59).

ABILITY

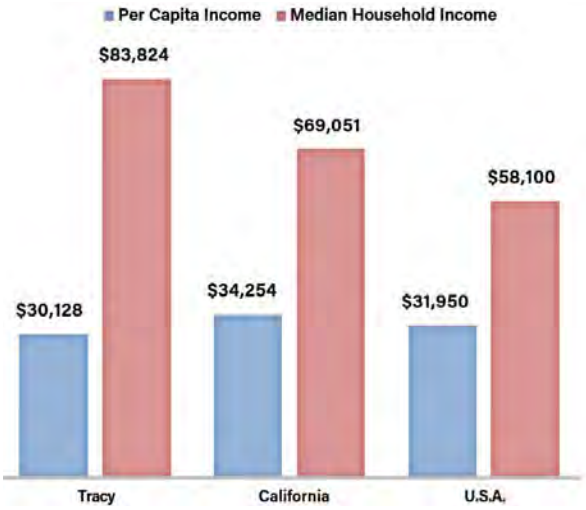
The CDC has reported that 1 in 4 US adults (61 million Americans) have a disability that impacts major life activities. It will be critical for Tracy to ensure that people of all abilities can use and enjoy our parks.

Figure 2-4
Population by Race



Sources: US Census Bureau, 2019; ESRI, 2019.

Figure 2-5
Comparative Income Characteristics



Sources: US Census Bureau, 2019; ESRI, 2019.



Dr. Powers Park

OUR PARK SYSTEM

Tracy's park system includes some 85 parks covering 364 acres, with numerous athletic courts, sports facilities and fields. The City of Tracy also operates the following special recreational facilities:

- Joe Wilson Community Pool, located in Dr. Powers Park, hosts swim lessons, water aerobics classes, recreation and lap swimming, and lifeguard certification.
- Tracy Community Center features a 4,400-square foot main hall, two conference rooms, and a commercial kitchen, and can be rented for events. (Other facilities that can be rented include the Transit Station, Civic Center, and Tracy Sports Complex Meeting Room.)
- Lolly Hansen Senior Center offers a wide variety of classes, activities, special events and programs to anyone 50+.
- Tracy Branch Library features computer workstations, a reference collection, and a circulating collection of library materials.
- Grand Theatre Center for the Arts hosts a variety of exhibitions and performances. Arts classes are offered, and the facility can be rented for private events.



Joe Wilson Pool

66% OF TRACY RESIDENTS SURVEYED USE OUR PARKS FREQUENTLY OR OCCASIONALLY.

PARKS BY TYPE

The Parks, Recreation & Trails Master Plan Update defines six types of park: neighborhood parks, community parks, linear parks, sports complexes, special use parks, and mini parks. Open space/conservation areas, while not part of the parks system, may also provide recreational value in the future**. Please see Chapter 3 for more detailed park type definitions.**



Clyde Bland Park is an 8.67-acre neighborhood park that features a walking loop, playgroun, baseball/softball field, multiuse field, and basketball court.



Florence Stevens Park is a 1.42-acre linear park that provides a green connection through the neighborhood.



Lincoln Park is a 13.74-acre community park with a walking loop, playgorunds, a rose garden, picnic shelters, and open lawns that can hold events.

NEIGHBORHOOD PARKS

Neighborhood parks provide a variety of recreation opportunities within walking or biking distance of residents in one or more neighborhoods. The park system today features 24 neighborhood parks covering 106.4 acres. (This includes five parks currently planned or under construction at Tracy Hills and Ellis.)

LINEAR PARKS

Linear parks include trails and other recreational amenities. Linear parks may follow canals or other rights-of-way, and are effective ways to knit neighborhoods together and connect the city to its natural surroundings. Tracy's park system includes seven linear parks with 12.9 acres.

COMMUNITY PARKS

Community parks include specialized attractions and/or a mix of active and passive recreation amenities to serve a substantial portion of the community or the entire city. These parks often include large group gathering spaces and specialized facilities, such as amphitheaters, swimming pools, sports complexes, community centers, and large-group venues. Tracy has five community parks with a total of 66.7 acres.



Tracy Sports Complex features four baseball/softball fields, four soccer fields, as well as playgrounds, shade structures, and a group picnic area.



Civic Center Plaza is a special use park creating a campus around City Hall, the Tracy Community Center, and the Lolly Hansen Senior Center.



Fabian Family Park is one of 42 mini parks that dot Tracy's neighborhoods.

SPORTS COMPLEXES

These parks are devoted primarily to fields, courts, and other facilities for organized athletics. Sports complexes also include elements that create an enjoyable park experience for families and spectators. Tracy has four sports complexes totaling 131 acres, including Tracy Sports Complex and Legacy Fields.

SPECIAL USE PARKS

These types of parks encompass downtown plazas, public gathering spaces, stand alone special facilities, and unique park experiences. Tracy has three special use parks: Civic Center Plaza, Front Street Plaza, and Ellis Dog Park (coming soon), totalling 7.5 acres.

MINI PARKS

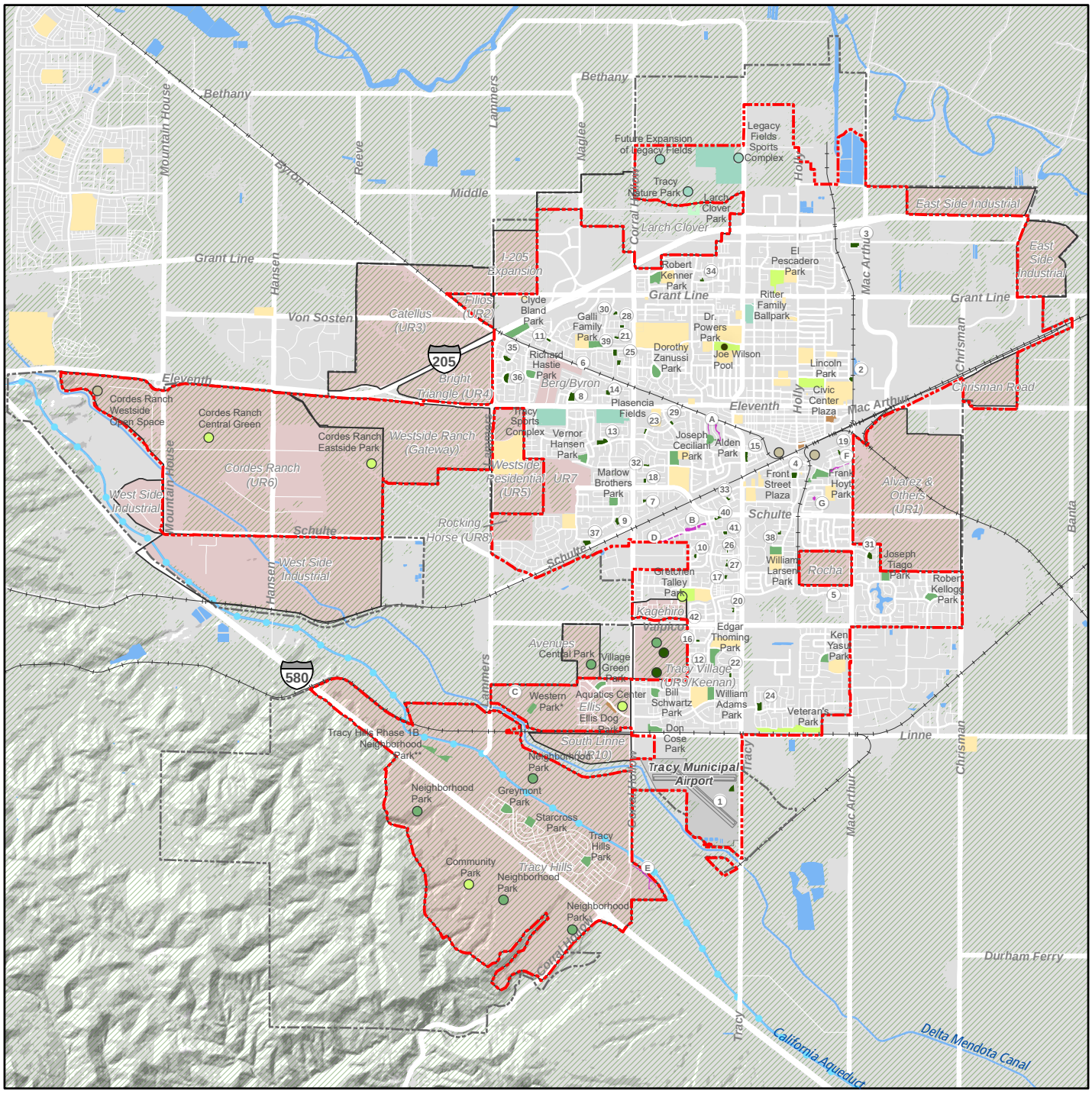
Mini parks provide basic recreation amenities for nearby residents in a specific neighborhood or subdivision. Today, the City has 42 mini parks totaling 39.8 acres.

OPEN SPACE/ CONSERVATION LANDS

Open space/conservation lands may include trails and/or public access with low impact on the environment. While Tracy lacks these park types today, they will help make our system more complete in the future.

Figure 2-6

Tracy Park System



Tracy City Limit
Sphere of Influence
Aqueduct
Rivers/ Canals/ Ponds
Agriculture / Undeveloped
Airport
Future Development Area
School Sites
Planned Open Space/ Conservation

Park Classification

Existing
Planned
Mini
Neighborhood
Community
Linear
Special Use
Sports Complex
County-owned Park
Community or Recreation Center

(#) Existing Mini Parks

1. American Legion Park
2. Fine Family Park
3. A.R. Glover Park
4. McDonald Park
5. Clyde Abbott Park
6. Dr. Ralph Allen Park
7. Bailor/Hennan Park
8. Daniel Busch Park
9. J. Kingsley Chadeayne Park
10. Evelyn Costa Park
11. Eagan Family Park
12. Albert Emhoff Park
13. John Erb Park
14. Fabian Family Park
15. Jack Fisher Park
16. Barbara Fitzpatrick Park
17. Golden Spike Park
18. Harvest Park
19. Lester Huck Park
20. Fred Icardi Park
21. George Kelly Park
22. John Kimball Park
23. Kit Fox Park
24. William Lowes Park
25. McCray Family Park
26. Mount Diablo Park
27. Mount Oso Park
28. New Harmon Park
29. Robert Patzer Park
30. Pombo Family Park
31. Jim Raymond Park
32. Naomi Rippin Park
33. Sister Cities Park
34. Tom Slayter Park
35. Souza Family Park North
36. Souza Family Park South
37. Joan Sparks Park
38. Larry Sullivan Park
39. Dorlane Thrasher Park
40. Tracy Press Park
41. Valley Oak Park
42. Westside Pioneer Park

(A) Existing Linear Parks

A. Alden Park Greenway
B. Henry Barboza Park
C. Orchard Park*
D. Dorothy Evans Park
E. Hillview Linear Park**
F. LMD Zone 17 Greenway
G. Florence Stevens Greenway

*Under construction at the time of Master Plan adoption
**Based on Vesting Tentative Maps already approved at the time of Master Plan adoption

N
0 0.325 0.65 1.3 Miles

Table 2-1

Tracy Parks Inventory

PARK NAME	FUNDING	AREA (SQ. AC.)
NEIGHBORHOOD PARKS (24)		**106.42**
ALDEN PARK	GENERAL FUND	3.51
CLYDE BLAND PARK	GENERAL FUND	8.67
JOSEPH CECILIANI PARK	GENERAL FUND	6.50
GALLI FAMILY PARK	GENERAL FUND	4.63
FRANK HOYT PARK	GENERAL FUND	6.44
ROBERT KENNER PARK	GENERAL FUND	6.01
WILLIAM LARSEN PARK	GENERAL FUND	5.10
EDGAR THOMING PARK	GENERAL FUND	5.31
KEN YASUI PARK	GENERAL FUND	3.10
DOROTHY ZANUSSI PARK	GENERAL FUND	4.99
WILLIAM ADAMS PARK	LMD ZONE 15	4.69
DON COSE PARK	LMD ZONE 15	3.79
BILL SCHWARTZ PARK	LMD ZONE 15	3.42
RICHARD HASTIE PARK	LMD ZONE 21	3.43
JOSEPH TIAGO PARK	LMD ZONE 24	4.02
VERNOR HANSON PARK	LMD ZONE 26	3.46
MARLOW BROTHERS PARK	LMD ZONE 26	3.87
ROBERT KELLOGG PARK	LMD ZONE 29	4.08
WESTERN PARK	CFD	2.90
GREYMONT PARK	CFD	3.91
STARCROSS PARK	CFD	3.61
TRACY HILLS PARK	CFD	3.83
TRACY HILLS PHASE 1B PARK	CFD	4.30
VILLAGE GREEN PARK	CFD	2.85
LINEAR PARKS (7)		**12.87**
ALDEN PARK GREENWAY	GENERAL FUND	2.13
HENRY BARBOZA PARK	GENERAL FUND	3.27
DOROTHY EVANS PARK	LMD ZONE 9	1.10
LMD ZONE 17 GREENWAY	LMD ZONE 17	1.33
FLORENCE STEVENS PARK	LMD ZONE 17	1.42
HILLVIEW LINEAR PARK	CFD	2.30
ORCHARD PARK	CFD	1.30
COMMUNITY PARKS (5)		**66.70**
EL PESCADERO PARK	GENERAL FUND	14.62
LINCOLN PARK	GENERAL FUND	13.74
DR. POWERS PARK	GENERAL FUND	11.30
GRETCHEN TALLEY PARK	GENERAL FUND	11.24
VETERANS PARK	GENERAL FUND	15.80
SPORTS COMPLEXES (4)		**131.00**
LEGACY FIELDS SPORTS COMPLEX	GENERAL FUND	72.20
ARNULFO PLASENCIA FIELDS	GENERAL FUND	20.96
RITTER FAMILY BALL PARK	GENERAL FUND	10.82
TRACY SPORTS COMPLEX	GENERAL FUND	27.02
SPECIAL USE PARKS (3)		**7.54**
CIVIC CENTER PLAZA	GENERAL FUND	2.93
FRONT STREET PLAZA	GENERAL FUND	2.20
ELLIS DOG PARK	CFD	2.40
MINI PARKS (42)		**39.78**
AMERICAN LEGION PARK	GENERAL FUND	1.27
FINE FAMILY PARK	GENERAL FUND	0.64
A.R. GLOVER PARK	GENERAL FUND	2.14
MCDONALD PARK	GENERAL FUND	1.46
DR. RALPH ALLEN PARK	LMD ZONE 3	0.81
EAGAN FAMILY PARK	LMD ZONE 3	0.53
FABIAN FAMILY PARK	LMD ZONE 3	1.01
GEORGE KELLY PARK	LMD ZONE 3	0.75
MCCRAY FAMILY PARK	LMD ZONE 3	0.80
NEW HARMON PARK	LMD ZONE 3	0.51
POMBO FAMILY PARK	LMD ZONE 3	0.51
TOM SLAYTER PARK	LMD ZONE 3	0.49
DORLANE THRASHER PARK	LMD ZONE 3	1.18
BAILOR/HENNAN PARK	LMD ZONE 7	0.48
HARVEST PARK	LMD ZONE 7	0.47
KIT FOX PARK	LMD ZONE 7	0.56
ROBERT PATZER PARK	LMD ZONE 7	0.50
NAOMI RIPPIN PARK	LMD ZONE 7	0.56
EVELYN COSTA PARK	LMD ZONE 9	0.53
ALBERT EMHOFF PARK	LMD ZONE 9	0.48
BARBARA FITZPATRICK PARK	LMD ZONE 9	0.46
GOLDEN SPIKE PARK	LMD ZONE 9	0.50
FRED ICARDI PARK	LMD ZONE 9	0.40
JOHN KIMBALL PARK	LMD ZONE 9	0.52
MOUNT DIABLO PARK	LMD ZONE 9	0.41
MOUNT OSO PARK	LMD ZONE 9	0.43
SISTER CITIES PARK	LMD ZONE 9	0.50
TRACY PRESS PARK	LMD ZONE 9	0.52
VALLEY OAK PARK	LMD ZONE 9	0.50
WESTSIDE PIONEER PARK	LMD ZONE 9	0.51
SOUZA FAMILY PARK NORTH	LMD ZONE 13	1.59
SOUZA FAMILY PARK SOUTH	LMD ZONE 13	2.30
J. KINGSLEY CHADEAYNE PARK	LMD ZONE 14	1.72
JOAN SPARKS PARK	LMD ZONE 14	1.75
DANIEL BUSCH PARK	LMD ZONE 16	2.41
LESTER HUCK PARK	LMD ZONE 17	0.51
LARRY SULLIVAN PARK	LMD ZONE 17	0.51
WILLIAM LOWES PARK	LMD ZONE 19	1.99
CLYDE ABBOTT PARK	LMD ZONE 20	0.54
JOHN ERB PARK	LMD ZONE 26	2.53
JIM RAYMOND PARK	LMD ZONE 30	1.49
JACK FISHER PARK	LMD ZONE 35	2.00

Source: City of Tracy, 2021.

PARK FEATURES AND AMENITIES

Tracy's parks include an array of recreational amenities, from sports fields and courts to playgrounds, trails, and other features.

SPORTS FIELDS AND COURTS

- Tracy has 19 ballfields for **softball and baseball** at six parks or sports complexes. Ten of these fields are at Legacy Fields Sports Complex and have been developed since the last Master Plan in 2013. Four fields are at Tracy Sports Complex, two fields are at Ritter Family Ball Park and one field each is at Veterans, Clyde Bland, and Galli Family Park.
- Tracy has 20 **soccer fields**, including eight at Legacy Fields, five at Plasencia Fields, and four at Tracy Sports Complex. Two multipurpose fields at Ritter Family Ball Park are also used for soccer.
- There are 36 **basketball courts** in Tracy at 35 parks: most parks that have basketball courts have one full or one half court.
- Tracy has 16 **tennis courts**. Three are in Dr. Powers Park, and are lighted; the rest are in neighborhood parks including Joseph Ceciliani (2), Frank Hoyt (2), Robert Kenner (2), William Larsen (2), and Edgar Thoming (2) and are not lighted.
- Tracy's park system also includes six **horseshoes courts**, five **sand volleyball courts**, four **bocce courts**, two **roller hockey courts**, one **shuffleboard court**, and one **cricket pitch.**

SPECIAL FACILITIES

- **Climbing walls or rocks** are located at eight Tracy parks.
- The City operates one public **pool**, at Dr. Powers Park, along with six **water play areas or splash pads**.
- Hard-surfaced **walking paths** are found in 32 Tracy parks.
- Tracy has one **dog park** at El Pescadero Park.



Joe Wilson Pool

PLAYGROUNDS, PICNIC AREAS AND SHELTERS

Children's playgrounds with adjacent sitting areas are in almost all of Tracy's neighborhood and mini parks and in several of the community parks, for a total of 95. There are some 99 shade or picnic structures and 56 group picnic areas, with one to two at most of the city's parks.

SCHOOL FACILITIES

Tracy Unified School District provides public K-12 education in Tracy, with seven elementary schools, four K-8 schools, three middle schools, three traditional high schools, and two continuation high schools. Sports and athletic facilities at TUSD schools contribute significantly to recreation in Tracy for children and youth. Currently there is no joint-use agreement between the school district and the City that designates community use at school recreational facilities, but this could be a strategy worth pursuing in the future.

Jefferson School District provides public K-12 education in south Tracy south of Valpico Road and in unincorporated San Joaquin County, with four elementary schools, one K-4 school, One 5-8 School, and two K-8 schools. Sports and athletic facilities at Jefferson schools contribute to recreation in Tracy for children and youth.

PARKS AT A GLANCE

85
PARKS



1
SENIOR CENTER



1
DOG PARK



1
POOL



32
PARKS WITH WALKING PATHS



95
PLAYGROUNDS



99
SHADE OR PICNIC AREAS



5
SAND VOLLEYBALL COURTS



4
BOCCE COURTS



1
SHUFFLEBOARD COURT



19
BASEBALL/ SOFTBALL FIELDS



20
SOCCER FIELDS



2
ROLLER HOCKEY COURTS



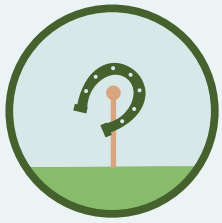
9
CLIMBING WALLS OR ROCKS



36
BASKETBALL COURTS



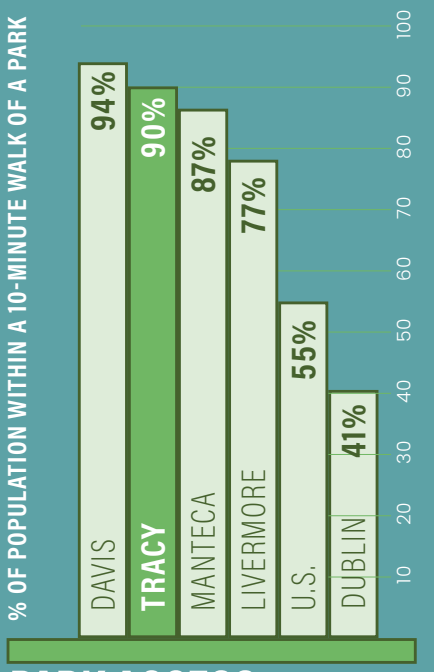
16
TENNIS COURTS



6
HORSESHOE COURTS

364
ACRES

DID YOU KNOW?



PARK ACCESS

The Trust for Public Land keeps detailed data on how well-served people are by parks in cities throughout the country. As of 2021, an impressive 90% of Tracy residents live within a 10-minute walk of a park. (Our own survey came up with similar results!)

This level of walkability is a great asset for our system. However, many of those closeby parks are mini parks, with limited amenities. There are still plenty of ways we can improve our parks.

PARK LEVEL OF SERVICE

PARK ACREAGE

As of 2018, Tracy's 364.3 acres of park land (including parks currently being developed as part of Tracy Hills Phase 1A and 1B and Ellis) provides 4.05 acres of park land per 1,000 residents, meeting the goal of 4 acres per 1,000 established in the 2013 Parks Master Plan (New Developments).

This Plan Update establishes an updated overall park acreage standard as well as acreage standards for each type of park. These standards, laid out in Chapter 3, create targets for the City to strive for and provide the basis for Development Impact Fees.

PARK ACCESS

Although the 2013 Parks Master Plan recommended that residents of Tracy should live within 1/2 to 3/4 mile of a neighborhood park, that is not the case for many residents today. (90% of our residents do currently live within walking distance of a park of some kind.)

Recognizingthat walkability to parks with a variety of recreational features is the intention, the Plan Update calls for Tracy to provide a neighborhood or community park within a ½-mile walking distance of all Tracy residents. Areas that currently do not have access will be prioritized for future park opportunities, wherever practical. See Chapter 3.

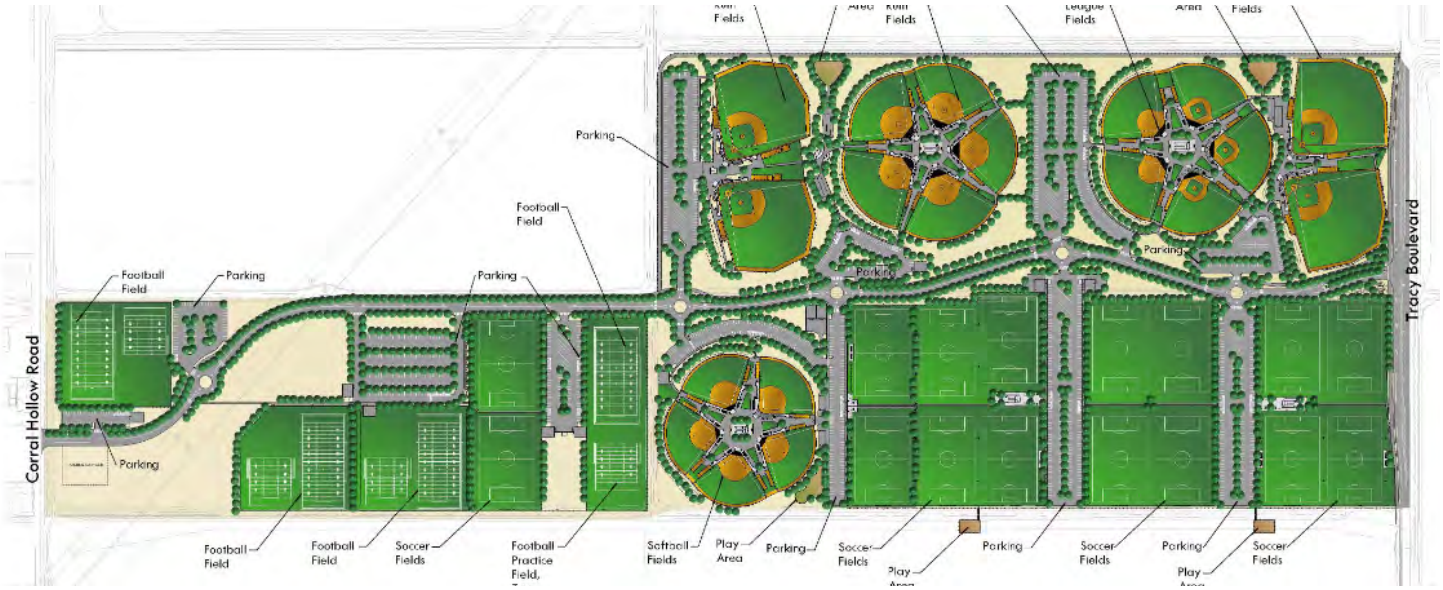


Conceptual experience provided at the planned Tracy Nature Park.

PLANNED PARKS AND PARK IMPROVEMENTS

Tracy has a number of parks plans in progress as of 2021:

- **Legacy Fields Sports Complex.** The City has completed a master plan for this facility, which will be built out in phases. Remaining improvements for Phase 1 include paving the existing parking lots, traffic flow improvements, wayfinding/signage, and the complete build out of the five eastern baseball fields. Future phases would expand the park's footprint west to Corral Hollow Road. It is projected that the full build out will occur within the next 10-20 years.
- **Aquatics Center.** The City entered into a development agreement with Surland Companies to develop an Aquatics Center. The developer agreed to dedicate 16 acres of land to the City and contribute funding towards the design and construction of the facility. The City would also need to contribute funds towards the project.
- **Multi-Generational Recreation Center.** The City is planning a recreation center to serve the needs of a diverse spectrum of community residents. Preliminary community engagement on the project has shown strong support for a library/education center, a full-time gymnasium, and good access for people coming by foot and on bike. This project grows out of three initiatives recommended by the 2013 Parks Master Plan. Further analysis is required to finalize the scope, location, size, cost and phasing of this project.
- **Gretchen Talley Park (Phase 3).** The City has recently purchased a 4.7-acre parcel of land immediately adjacent to the existing park. As of this writing, public outreach and a conceptual plan have been completed for the expansion project. The expansion, counted in this plan, has shifted Gretchen Talley from the neighborhood park to the community park group.
- **Playground Renovations.** Renovations have recently been completed at William Larsen Park, Larry Sullivan Park and Lester Huck Park. Additional renovations have been designed and are under construction at Alden Park and Ken Yasui Park.
- **Tracy Nature Park.** The City is planning a nature park on the 86-acre portion of the Holly Sugar property owned by the City and slated for passive recreation. A conceptual plan for the nature park has been approved, and the City is pursuing a variety of funding sources to implement this park in phases. Access to the site for passive enjoyment should be possible very soon.



Conceptual master plan for Legacy Fields Sports Complex was completed in 2008.

FUTURE DEVELOPMENT AND CHANGE AREAS

New parks will also be developed as part of new residential and commercial development projects in the City's Specific Plan areas, including areas already under development, and areas that are likely to develop in the near future. The development of Tracy Hills will feature a total of 8 neighborhood parks (4 are underway as of this writing and included in the parks inventory), as well as a new community park. The Cordes Ranch development will feature private parks in a developing employment area on the city's west side.

The Tracy General Plan (2011) details some 10 Urban Reserves (URs) inside and outside City limits where future development could occur.

Altogether, future development areas in and around Tracy cover some 8,805 acres and could support up to approximately 17,400 housing units and nearly 29 million square feet of commercial and institutional space, as well as an estimated 200 acres of future parks.

The General Plan also describes Areas of Special Consideration. Ten of these are areas within the City's developed footprint, where higher-density development in the years ahead. These include the "Bowtie" adjacent to Downtown, the area arond Valpico Road and Tracy Boulevard, and other nodes and gateways in the city. These areas are important opportunities for future parks. **Future park locations are shown in more detail in Chapter 3.**

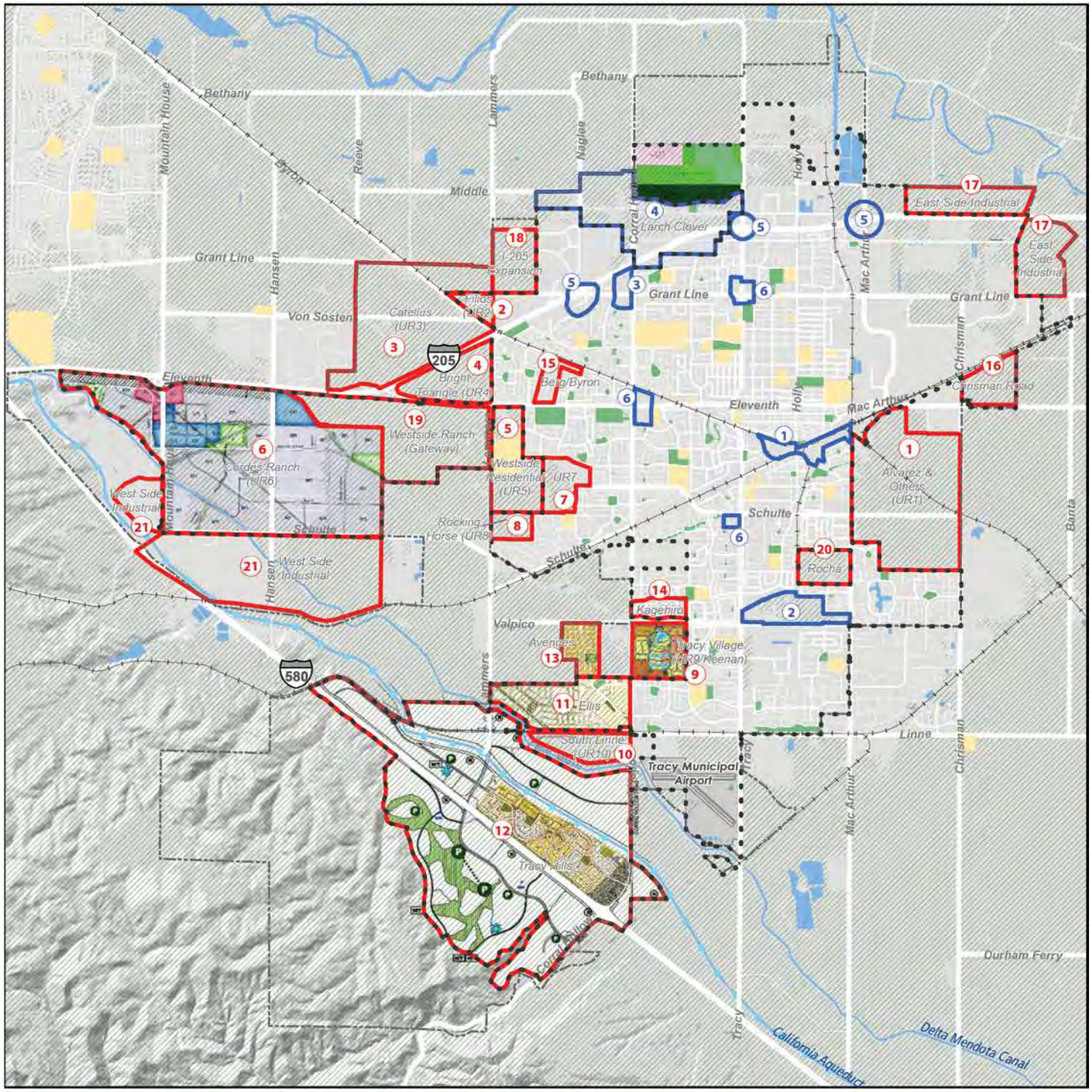
Table 2-2
Future Development and Change Areas

FUTURE DEVELOPMENT AREAS	
1	ALVAREZ & OTHERS (UR 1)
2	FILIOS (UR 2)
3	CATELLUS (UR 3)
4	BRIGHT TRIANGLE (UR 4)
5	WESTSIDE RESIDENTIAL (UR 5)B
6	CORDES RANCH (UR 6)C
7	FUTURE PLANNING AREA (UR 7)
8	ROCKING HORSE (UR 8)D
9	TRACY VILLAGE (UR 9/KEENAN)E
10	SOUTH LINNE (UR 10)
11	ELLIS
12	TRACY HILLS
13	AVENUES
14	WESTSIDE RANCH (GATEWAY)
15	BERG/BYRON
16	CHRISMAN ROAD
17	EAST SIDE INDUSTRIAL
18	I-205 EXPANSION
19	KAGEHIRO
20	ROCHA
21	WEST SIDE INDUSTRIAL
URBAN CHANGE AREAS	
1	THE BOWTIE (ASC 1)
2	VALPICO RD BETWEEN TRACY AND MACARTHUR (ASC 2)
3	GRANT LINE RD AND CORRAL HOLLOW RD AREA (ASC 3)
4	LARCH CLOVER (ASC 4)
5	I-205 ENTRYWAYS (ASC 5)
6	POTENTIAL VILLAGE CENTERS (ASC 6)

FUTURE DEVELOPMENT AREAS IN AND AROUND TRACY COULD SUPPORT UP TO APPROXIMATELY 17,400 HOUSING UNITS AND AN ESTIMATED 200 ACRES OF FUTURE PARKS!

Figure 2-7

Future Development and Change Areas



PARK-BY-PARK ASSESSMENT

A park-by-park condition assessment in July and August 2019 documented general condition, park access and usability.

Over half of the parks were rated as being in good or excellent condition (a rating of 4 or 5). This included two thirds of the parks with funding through the General Fund (more on this in the following pages).

The most commonly reported condition needs in Tracy parks were related to:

- Playgrounds and play areas in poor condition or need to be replaced to meet current standards (e.g., replacing wooden play structures and structures placed on sand.)
- Amenities including benches, tables, and trash bins in poor condition and/or don't meet current City standards;
- Cracking surfaces on basketball and tennis courts;
- Need to replace sand in play areas with new resilient surfacing material;
- Shrubs in poor condition, or the absence of plantings;
- Turf with dry or wet areas related to irrigation or drainage issues.

With regard to park access, two-thirds of the parks were given the top rating of "5", with the remainder considered good or fair ("3"s and "4"s.) Many parks were noted for being well-integrated into neighborhoods and with adjacent schools. Connections to bike paths were noted in a few cases, but there may be room for improvement. In some cases, the rear yards and fences of homes face onto parks, which is not ideal from an access or visibility standpoint.

Observed use was evaluated for 12 parks. Of these, half were viewed as having excellent use characteristics, and half were good or fair. Parks were noted for their good combinations of active and passive use areas and facilities. In some cases, facilities were seen as having little use (e.g. the overgrown bocce courts in Galli Family Park.) Elsewhere, robust use was observed, including lots of people using the loop trail at Clyde Bland Park; several families using the play facilities and splash pad area at Lincoln Park; and many dog walkers at Edgar Thoming Park.

A park-by-park ADA assessment of the park system was concluded in July and August of 2020. The results of that analysis are summarized separately.



Lincoln Park has a popular splash pad area, especially during the summertime



Irrigation and drainage issues create dry turf at some parks, such as Robert Kenner Park pictured here.



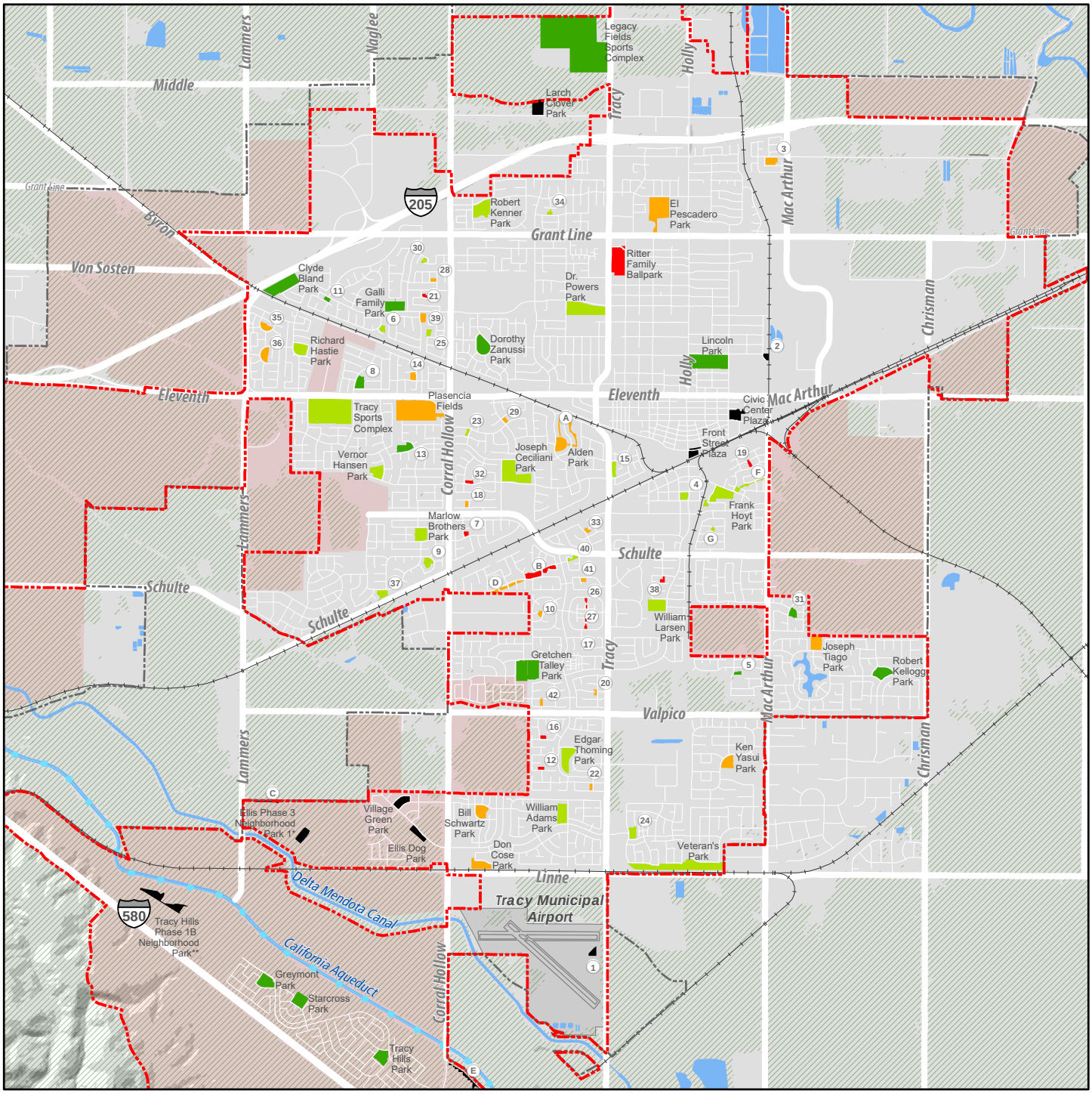
Clyde Bland Park has a walking loop that is partly shaded and is popular with people with children and dogs.



Florence Stevens Park has a linear path that creates a strong neighborhood connection.

Figure 2-8

Park Condition Assessment



Tracy City Limit
Sphere of Influence
Aqueduct
Rivers/ Canals/ Ponds
Agriculture / Undeveloped
Airport
Future Development Area

Condition Rating

Excellent
Poor
Unknown / Unclassified Condition

Existing Mini Parks

1. American Legion Park
2. Fine Park
3. A.R. Glover Park
4. McDonald Park
5. Clyde Abbott Park
6. Dr. Ralph Allen Park
7. Bailor/Hennan Park
8. Daniel Busch Park
9. J. Kingsley Chadeayne Park
10. Evelyn Costa Park
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35. Souza Family Park North
36. Souza Family Park South
37. Joan Sparks Park
38. Larry Sullivan Park
39. Dorlane Thrasher Park
40. Tracy Press Park
41. Valley Oak Park
42. Westside Pioneer Park

Existing Linear Parks

A. Alden Park Greenway
B. Henry Barboza Park
C. Ellis Phase 3 Neighborhood Park 2*
D. Dorothy Evans Park
E. Hillview Linear Park**
F. LMD Zone 17 Greenway
G. Florence Stevens Greenway

*Under construction at the time of Master Plan adoption
**Based on Vesting Tentative Maps already approved at the time of Master Plan adoption

N
0 0.225 0.45 0.9 Miles

HOW OUR PARKS ARE FUNDED AND MAINTAINED

CREATING PARKS

The City of Tracy funds the acquisition and development of neighborhood and community parks through impact fees from new residential development. This long-standing practice has been successful in attracting new homeowners and providing recreation opportunities for a diverse community as it grows.

The Development Impact Fee (DIF) is based on the relationship between the estimated cost to develop new parks and the estimated service population of new parks. Development fees fund only the construction of new parks and cannot cover the costs of maintenance of new and/or existing parks or the re-development or renovation of existing parks. The City's park land impact fee will be updated following this Master Plan update.

Tracy voters passed a half-cent sales tax in 2016 (Measure V), which raises approximately $10 million per year to fund City services, including but not limited to parks. As a result, park acquisition and development projects rely on a combination of development impact fees, Measure V, and contributions from the City's General Fund.

MAINTAINING PARKS

The City of Tracy maintains all of the city's parks, but funding for maintenance is split. A majority of the city's parks (50) are funded through Landscape Maintenance Districts (LMDs) or Community Facilities Districts (CFDs) established for various neighborhoods, typically at the time of development. This includes nearly all of the city's mini parks as well as 14 neighborhood parks. Funding levels vary among the LMDs and CFDs, which has resulted in different levels of maintenance in different neighborhoods.

The remaining 27 parks are funded through the General Fund. This includes all of the City's community parks, and 80 percent of the City's park land.

Clarifying lifecycle maintenance standards and achieving a more consistent level of care is a goal this Master Plan Update will help to achieve.

THE CITY MAINTAINS ALL OF OUR PARKS, BUT FUNDING FOR MAINTENANCE COMES FROM SEVERAL SOURCES, RESULTING IN DIFFERENT LEVELS OF CARE.

OUR PROGRAMS & SERVICES

The Parks and Recreation Department offers over 240 programs and services from athletics to aquatics, summer camps to teen programs and therapeutic recreation.

Our professional staff are responsible for managing all recreation programs and special community-wide events, and operating multiple facilities. We also partner with other organizations on shared initiatives. All of this requires year-round planning and coordination as well as evaluation of all programming and activities.







GETTING THE MIX RIGHT

Our mission is to ensure access to outstanding programs, services and community amenities that contribute to the quality of life in Tracy. To realize this vision, it is important to identify and understand our Core Program Areas. This provides a way to focus on the activities and outcomes of greatest importance to the community as informed by current and future needs.

Today, what we offer in our core program areas of after-school programs, aquatics, athletics, camps, community events, enrichment classes, and health and wellness meet many of the recreation needs of community. Our program mix must be evaluated on a regular and recurring basis to ensure that the offerings align with changing leisure and recreation trends, demographics, and the needs and wants of residents.

PROGRAM LIFECYCLE

A lifecycle analysis involves reviewing every program to determine the stage of growth or decline for each as a way of informing strategic decisions about the overall recreation program portfolio. The various stages of program lifecycles are as follows:

- Introduction - New program; modest participation
- Take-Off - Rapid participation growth
- Growth - Moderate, but consistent participation growth
- Mature - Slow participation growth
- Saturated - Minimal to no participation growth; extreme competition
- Decline - Declining participation

We find that today nearly a quarter of our programs fall into the Saturated and Decline categories, where we would aim to have fewer progams.

It is important to have a stable core of programs in the Mature stage. Currently, about a quarter of programs fall in this category significantly lower than the recommended 40%.

A little over half our programs are in the Introduction, Take-Off and Growth stages, which is in line with the recommended distribution of 50-60%. Allowing these programs one to two years to reach the maturation stage will prevent the City from canceling programs too soon after introducing them to the community.

Table 2-3
City of Tracy Recreation Core Program Areas

CORE PROGRAM AREA	BRIEF DESCRIPTION
AFTER SCHOOL PROGRAMS	Provide a safe and fun environment for participants during after-school hours on school campuses. Providing affordable enrichment opportunities that include homework help, arts and crafts, and recreational activities.
AQUATICS	Provide aquatics classes, water exercise, camps, and programs for youth and adults ages 6 months and up. Provide life saving water safety skills though aquatic classes, for youth, teens, and adults.
ATHLETICS	Provide physical activities and fitness related to sports, competition, and physical activity for youth and adults ages 5 and up.
CAMPS	Provide enrichment, health, and wellness and specialty courses for children, youth, and teens.
COMMUNITY EVENTS	Provide events to engage the community and local vendors and businesses.
ENRICHMENT	Provide enrichment classes and programs for children, youth, teens, adults, and older adults.
HEALTH AND WELLNESS	Provide health and wellness classes and programs for children, youth, teens, adults, and older adults.

OUR TRAILS

EXISTING AND PLANNED TRAILS

Tracy has some 23 miles of multiuse trails and 16 miles of walking paths outside of parks. Today, the backbone of the trail system is the north-south trail along Sycamore Parkway, connecting to the east-west path along Eleventh Street.

Another trail runs along MacArthur Drive in the industrial northeast between the 11th Street Bridge and Pescadero Avenue, connecting to the Northgate Village retail area.

Over the years, the City has sought to extend the reach of these paths and build them into a more complete system. The City is currently in the process of updating its Bikeways Master Plan. The overaching goal of the Bikeways Master Plan is to provide an attractive environment that fosters biking for recreation and transportation. The plan's key strategies may include (1) closing gaps in the existing bikeway system, (2) creating multi-use paths along railroad rights-of-way where feasible, (3) creating paths along canal easements and (4) requiring bike facilities in new developments.

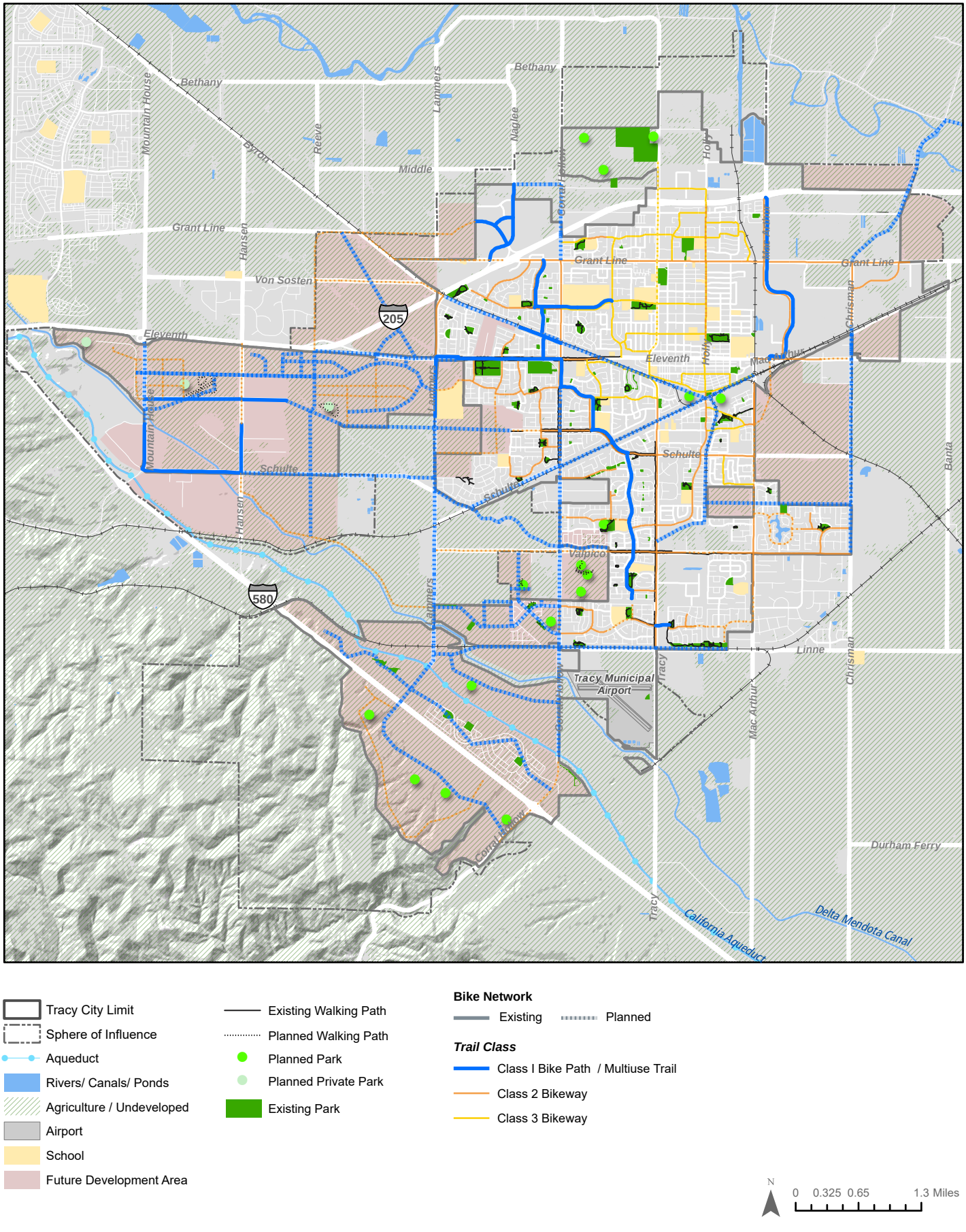
Bikeways or greenway trails have also been included in plans for future development. The Cordes Ranch and Tracy Hills Specific Plans have established more detailed direction for multiuse trails along canal and utility rights-of-way.



Multiuse trail

Figure 2-9

Bike Network (Existing and Planned)



BIOLOGICAL & CULTURAL RESOURCES

In addition to opportunities for recreation and maintaining our health and wellness, our parks also provide valuable habitat for wildlife and help preserve our natural resources. We are all part of a larger ecosystem that we depend on for fresh water, food, medicine, pollination, soil fertility and a host of other services. Loss of biodiversity can lessen the ability of our ecosystems to provide these services. Let's take a look at the biological resources that can be found in our parks.



Water and wet meadow vegetation attract wildlife at the Tracy Nature Park site.



Coast Live Oak



Deodar Cedar



Western Sycamore



Strawberry Clover

BIOLOGICAL RESOURCES

PLANTS

Tracy's parks support a rich variety of native and ornamental trees, shrubs, landscaping, and turf grass. A few of the plant species that you will find include coast live oak (Quercus agrifolia), coast redwood (Sequoia sempervirens), California black walnut (Juglans californica), western sycamore (Platanus racemosa), deodar cedar (Cedrus deodara), sweet gum (Liquidambar styraciflua), cherry plum (Prunus cerasifera), pine (Pinus sp.), Callery pear (Pyrus calleryana), African iris (Dietes bicolor), strawberry clover (Trifolium fragiferum), white clover (Trifolium repens), rosemary (Rosmarinus officinalis), broadleaf plantain (Plantago major).

WILDLIFE HABITAT

Most of the wildlife occupying Tracy's parks have adapted to human-modified habitats, and will vary depending on the vegetation, season, and habitat in an area. At any given time, you may find birds such as the Canada goose (Branta canadensis), green heron (Butorides virescens), American coot (Fulica americana), killdeer (Charadrius vociferus), northern mockingbird (Mimus polyglottos), house finch (Haemorhous mexicanus), and lesser goldfinch (Spinus psaltria).

Other common urban-adapted bird species include the mourning dove (Zenaida macroura), rock pigeon (Columba livia), European starling (Sturnus vulgaris), house sparrow (Passer domesticus), red-tailed hawk (Buteo jamaicensis), red-shouldered hawk (Buteo lineatus), Cooper's hawk (Accipiter cooperi), and Anna's hummingbird (Calypte anna).

The burrowing owl (Athene cunicularia) is a California Species of Special Concern that is closely associated with California ground squirrel burrows (Otospermophilus beecheyi). California ground squirrels are known to occur within the City along the railroad corridors, edges of fields, and banks of the aqueducts.

Several amphibian and reptile species may also share our parks if suitable cover is present. Ornamental shrubs, leaf litter, and well-watered lawns provide cover and foraging habitat for the western fence lizard (Sceloporus occidentalis), common garter snake (Thamnophis sirtalis), southern alligator lizard (Elgaria multicarinatus), Pacific tree frog (Hyliola regilla), arboreal salamander (Aneides lugubris), and California slender salamander (Batrachoseps attenuatus).

You might also come across mammals like the Virginia opossum (Didelphis virginiana), Botta's pocket gopher (Thomomys bottae), and striped skunk (Mephitis mephitis).

Larger trees and snags with hollows may occasionally support roosting bat species, such as pallid bat (Antrozous pallidus), which is a California Species of Special Concern.



San Joaquin Kit Fox is a Federally Endangered and California State Threatened species that is rare in Tracy, but could live in the open grasslands around the city edges.



Burrowing Owl prefer open grasslands and short vegetation, like many Tracy landscapes



Swainson's Hawks are known to nest in and around Tracy

CULTURAL RESOURCES

Tracy's landscape is also enriched by cultural resources that distinguish its identity and sense of place and by resources that may need to be conserved with development.

A total of 54 cultural resources were identified as part of our analysis of the City of Tracy. Of these, 44 were buildings and structures (none in existing City parks), and ten were previously recorded archaeological cultural resources.

Care must be taken during consideration of proposed modifications to Tracy's parks, recreation and trails system. Project activities such as excavation, new construction, and site clearance have the potential to result in direct and indirect impacts to cultural resources.

When designs are finalized for improvements to existing parks, trails, and facilities, or new facility construction, qualified personnel who meet the appropriate Secretary of the Interior's Professional Qualifications Standards should conduct site-specific study, including possible background research, map and aerial photograph review, and field survey, to identify potential impacts to cultural resources on the project level.

OUR NEEDS

RECREATION DEMAND IN TRACY

LEARNING FROM NATIONAL TRENDS

Understanding what is happening at the national level helps us anticipate potential demand at the city level. The Sports & Fitness Industry Association's (SFIA) Sports, Fitness & Recreational Activities Topline Participation Report 2018, which draws upon extensive surveys by the Physical Activity Council, informed our analysis of:

- National Trends in Sport and Fitness Participation
- Core vs. Casual Participation (an added layer of consideration that takes into account frequency of participation and whether active or casual)
- Activity by Generation

GENERAL SPORTS

The sports most heavily participated in the United States were Golf (23.8 million in 2017) and Basketball (23.4 million), well above other activities, in part because of the relatively small number of participants required. Tennis and Baseball rank 3rd and 4th respectively in terms of total participation. It is interesting to note that while participation in tennis has increased slightly over the last five years, participation in baseball has increased by over 20 percent.

Rugby and other niche sports, like Boxing, Lacrosse, Roller Hockey, Cricket and Pickleball have seen strong growth since 2012.

During the last five years, the sports that are most rapidly declining include Ultimate (Frisbee) (-39.1%), Touch Football (-22.8%), Tackle Football (-16.0%), and Racquetball (-13.4%).

GENERAL FITNESS

Overall, national participation in fitness has experienced strong growth in recent years. These activities have very few barriers to entry, which provides a variety of options that are relatively inexpensive to participate in and can be performed by most individuals.

The most popular fitness activity, by far, is Fitness Walking, which had about 110.8 million participants in 2017. Other leading fitness activities based on participation include Treadmill (52.9 million), Free Weights (52.2 million), Running/Jogging (50.7 million), Weight/Resistance Machines (36.2 million), and Stationary Cycling (36.0 million).

Over the last five years, the activities growing most rapidly are Non-Traditional / Off-Road Triathlons (74.7%), Trail Running (57.6%), and Aerobics (32.7%).

OUTDOOR RECREATION

Much like general fitness activities, outdoor recreation encourages an active lifestyle, can be performed individually or within a group, and is not as limited by time constraints.

In 2017, the most popular activities, in terms of total participants, include: Day Hiking (44.9 million), Road Bicycling (38.8 million), and Freshwater Fishing (38.3 million). From 2012-2017, BMX Bicycling (83.4%), Adventure Racing (56.3%), Backpacking Overnight (38.3%), and Day Hiking (30.1%) have undergone the largest increases in participation. The five-year trend shows activities declining most rapidly were In-Line Roller Skating (-20.7%), Camping within ¼ mile of Home/Vehicle (-16.5%), and Birdwatching (-9.2%).

AQUATICS

Swimming is unquestionably a lifetime sport. In 2017, Fitness Swimming was most popular in terms of overall participation (27.1 million) for aquatic activities, due in large part to its broad, multigenerational appeal. Over the past five years, all forms of aquatic exercise experienced significant growth Fitness Swimming, Aquatic Exercise, and Competitive Swimming.

WATER SPORTS AND ACTIVITIES

Particpation in other water-based activities tends to vary based on regional, seasonal, and environmental factors. As you imagine, a region with greater access to water and a warmer climate is more likely to have a higher participation rate than a region that has long winter seasons or limited water access. The most popular water sports and activities based on total participants in 2017 were Recreational Kayaking (10.5 million), Canoeing (9.2 million), and Snorkeling (8.3 million).

Over the last five years, Stand-Up Paddling (138.9%) was by far the fastest growing water activity, followed by White Water Kayaking (33.1%), Recreational Kayaking (28.7%), and Sea/Tour Kayaking (20.8%). During the same time, Jet Skiing (-22.6%), Water Skiing (-19.4%), and Wakeboarding (-10.8%) declined the most.

FITNESS WALKING IS THE MOST POPULAR ACTIVITY NATIONALLY AND WILL LIKELY GROW IN POPULARITY IN TRACY AS OUR TRAIL SYSTEM GROWS.

RECREATION TRENDS: KEY TAKEAWAYS

Here are some major takeaways for local and national recreation trends. These are worth considering as we update Tracy's master plan:

- Pickleball has surged in popularity, in community centers, physical education classes, public parks, private health clubs, YMCA facilities, retirement communities - and parks.
- Nationally, rugby has emerged as the overall fastest growing sport over the past five years although it has yet to make its presence felt in Tracy.
- Ultimate, tackle football and touch football are losing participants both locally and nationally.
- Aquatic activities have experienced strong participation growth, both locally and nationally, although swimming on a team saw significant increases in casual participation.
- Outdoor recreational activities are on the rise nationally. Hiking is extremely popular both nationally and locally.
- Based on national measurements, income level has a negative impact on inactivity rate. Lower income households tend to have higher inactivity rate.
- Age is also a significant factor to inactivity level. Generation Z (age 6-17) had the lowest inactivity rate while the boomers (age 55+) had the highest inactivity rate.
- Besides income and age factors, non-participants are more likely to join sports or fitness activities if a friend accompanies them.

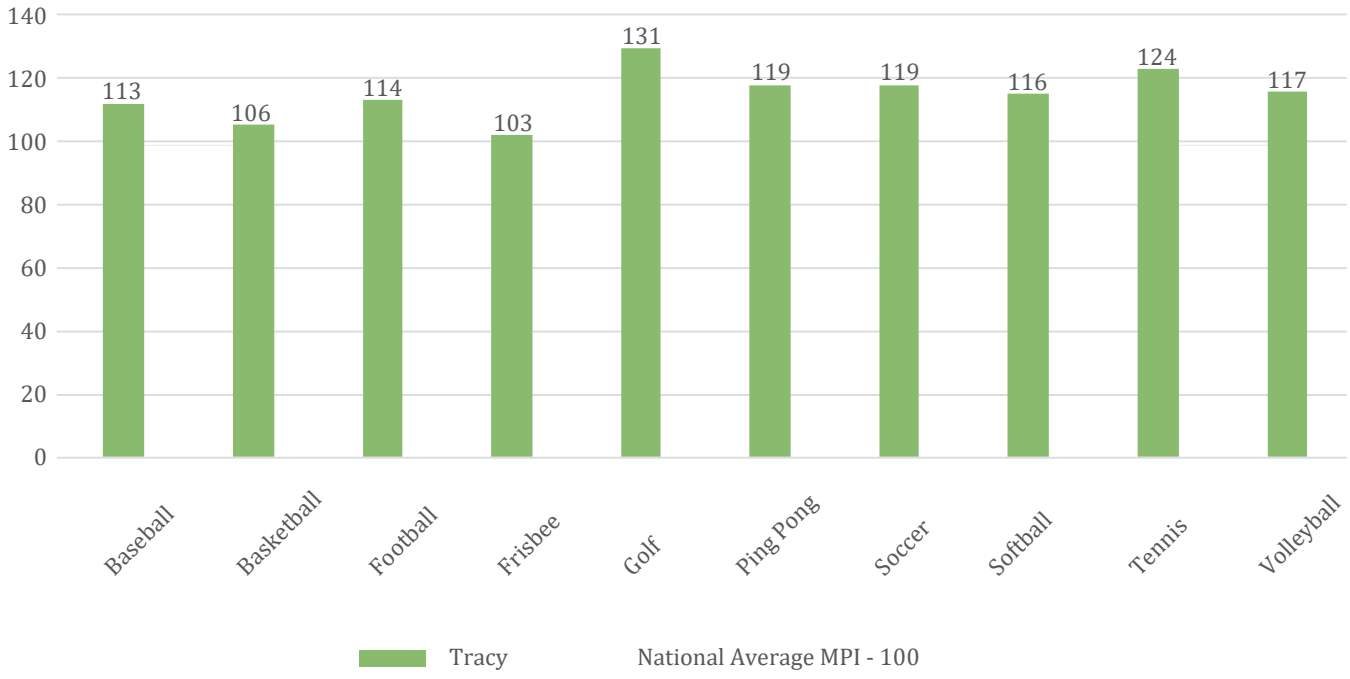
LOCAL RECREATION MARKET POTENTIAL

How do these trends look at the local level?

Overall, Tracy demonstrates above average potential for many activities. The three charts below illustrate Market Potential Index (MPI) data measuring the probable demand for recreation in the City of Tracy, using data from ESRI.

Looking at three categories—general sports, fitness and outdoor activity—a majority of the activities' scores are well above 100. This number indicates the likelihood of an adult participating in certain activities when compared to the US National average. The data indicate that Tracy is an active place with very strong potential participation rates when it comes to recreational activities. In particular, there is great interest projected in golf, weights, jogging, tennis, and yoga.

Figure 2-10
General Sports Market Potential



High index numbers (100+) indicate greater potential that residents of Tracy will actively participate in offerings provided by the City.

Figure 2-11
General Fitness Market Potential

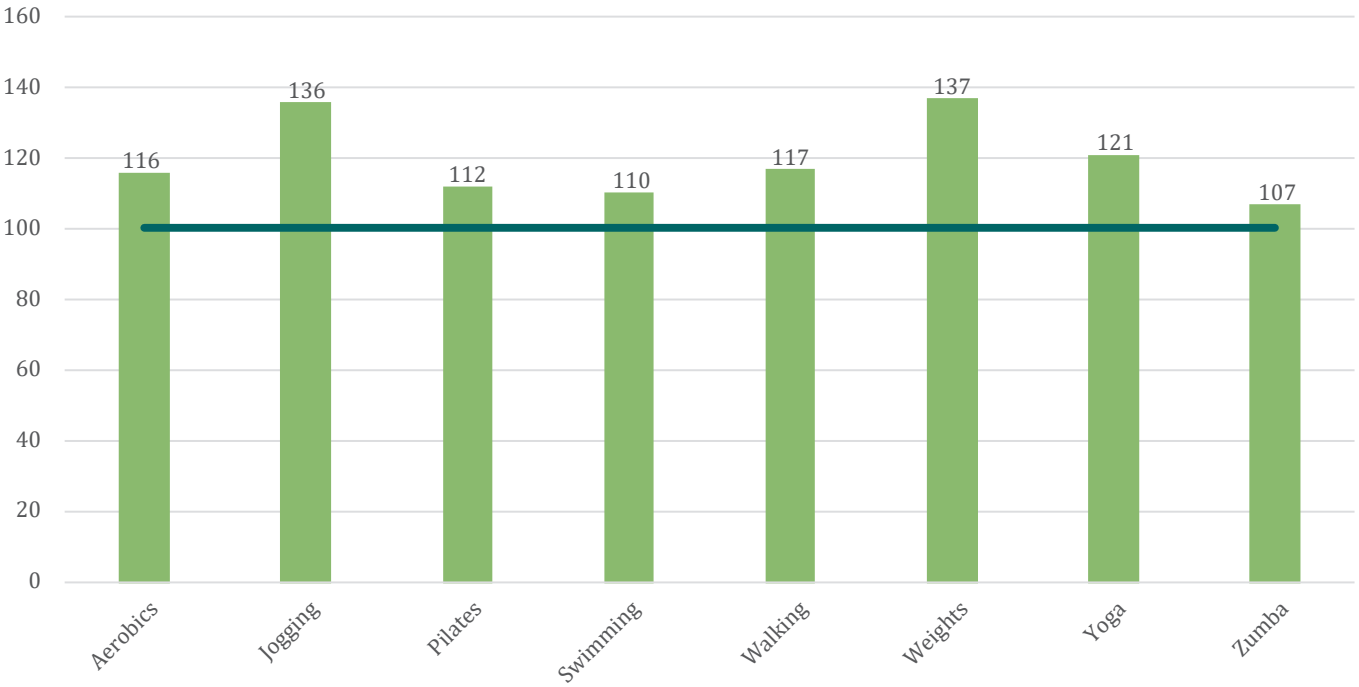
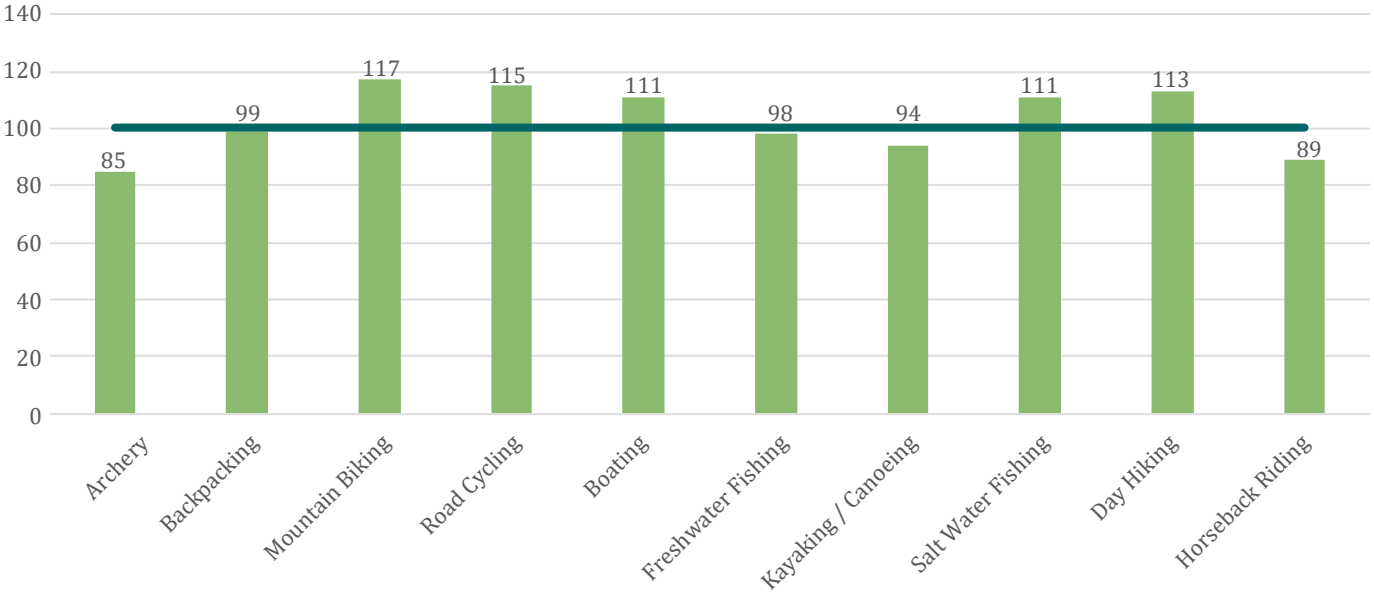


Figure 2-12
Outdoor Activity Market Potential



Tracy
National Average MPI - 100

OUR ASPIRATIONS

The Citywide Parks, Recreation & Trails Master Plan is our blueprint for new and improved parkland and recreation in Tracy for the next 15 years. With this in mind, it was critical to hear the vision, concerns and priorities of members of the community. What should we focus on achieving in the years ahead?

This section summarizes what we heard during our engagement of the community, step by step. We start with what we heard in our conversations with stakeholders and Commissioners, proceed with the input we got doing pop-up outreach at events and meeting with local groups. We cover the two community workshops done at key stages of the process. Finally, and maybe most importantly, we report what we learned from the survey we conducted of a statistically-valid sample of Tracy residents.



Community workshop on the Tracy Nature Park, September 2019

ENGAGEMENT AT A GLANCE

FOUNDATIONAL MEETINGS
June - August 2019

COMMISSION MEETINGS
Parks & Community Services Commission: April 4, 2019
Youth Advisory Commission: September 11, 2019

POP-UP AND TARGETED OUTREACH
Community Partnership for Families: June 13, 2019
Block Party: June 14, 2019
Tracy Farmers Market: June - August, 2019

COMMUNITY WORKSHOPS
Nature Park Workshop: August 28, 2019
Workshop 1: October 2, 2019
Workshop 2: August 27, 2020
Online extension of workshops

SURVEYS
Statistically-Valid Survey: May 15th – May 22nd, 2019
Online Survey: July 15 – September 3, 2019

FOUNDATIONAL MEETINGS

The planning team met with a cross-section of park users and Tracy community members. Two meetings with a total of 17 community members took place at the Tracy Transit Center on June 15, 2019. Participants represented a range of interests, from public agencies to high school athletics, club sports, park advocates, and representatives of segments of the Tracy community.

The planning team also had conversations with four members of the Tracy Parks and Community Services Commission. Themes of these conversations follow.

OPEN SPACE AND TRAILS

Stakeholders wanted access to open space—something that has become scarce as Tracy has grown. People talked about wide open expanses, passive natural areas, access to water, and walking trails. Trails were seen as a way to be out in nature, but also a great resource for running and walking right in town, and being able to bike and walk safely to get around. Stakeholders pointed to the Iron Horse Trail and the Consumnes River Parks District in Elk Grove as things to aspire to. The Tracy Nature Park was a specific aspiration!

COMFORT, BEAUTY, AND RESPONDING TO THE CLIMATE

To be usable in all seasons, Tracy's parks need to have ample shade. Water features would provide a great respite from summer heat. People mentioned shade structures, bathrooms, seating, and lighting that allows people to play basketball or go for a stroll when it's dusk or dark.

DOWNTOWN ACTIVATION

Stakeholders saw a role for parks in helping to catalyze downtown revitalization, and being social glue for Tracy residents. Downtown public spaces would be a diverse mix, from public plazas to informal social spaces, trails, and an enhanced Lincoln Park. People pointed out that Lincoln Park gets used again and again for events, and that Tracy needs more options for performances or large gatherings.

"Tracy needs to do a better job of capturing attention and keeping people local. Everyone leaves for entertainment. Sunday it's a ghost town but it shouldn't be."

"A lot of people get home late and it'd be great to walk around the park, but you can't because it's too dark."

"As a coach and lifelong runner, I'd be excited for something like the Iron Horse Trail. We need shaded places to run, away from traffic and pollution."

"We have a lot of sports parks that families go to because children are playing in a game. There's nothing at the sports parks for little ones to occupy themselves with."

INCLUSIVE PLACES WITH MULTIGENERATIONAL APPEAL

Even at a smaller scale, Tracy's parks should have features and characteristics that appeal to people of all ages so that families, active seniors, and the hard-to-please teens among us (and others) are all served. People loved the idea of co-locating libraries, gyms, parks, and other features. Parks need to be inclusive places that feel welcoming and safe to all members of the community.

PLAYGROUNDS AND FEATURES FOR YOUNG CHILDREN

Stakeholders painted a detailed picture of what's needed to make our playgrounds and play areas better. Play areas for different ages should be nearby so parents can watch siblings. Play and exercise equipment should be shaded to stay cool. We need special-needs equipment, interactive and imaginative equipment, educational features, sensory features, natural features and splash pads.

SPECIFIC PARK IMPROVEMENTS

Stakeholders said they loved Lincoln Park for its large expanse of green ("a crown jewel"), Larson Park for its mature tree canopy, Dr. Powers Park for its community activity, and Veterans Park for its linear quality. They look forward to the expansion of Gretchen Talley Park, and point to El Pescadero Park and Ritter Family Ball Park as ones that need work.

MEETING RECREATIONAL NEEDS

Tracy needs to be sure to align recreation facilities and programming with what people want in the community. This means understanding the needs of under-represented segments, and looking beyond traditional sports to embrace all kinds of recreation. Pickleball. Disc golf. Parcour. Ziplines. Community gardens and demonstration gardens. Bike trails and walking loops. Good old-fashioned four-square. Some felt that Tracy's parks need to have more space for informal recreation and passive enjoyment.

PROGRAMMING

Some people pointed out opportunities to collaborate with schools, the Boys & Girls Club, the Library and others to cross-pollinate programming and parks. Parks can be home to yoga, tai chi, Zumba and nature classes, science days and movie nights.

DELIVERING AND SUSTAINING PARKS

Parks commissioners, especially, were thinking about the opportunity to provide new and relevant guidance for delivering new parks through the development process that truly contribute to the parks system. They also talked about the challenge of maintaining parks whose operational funding is coming from a whole range of Landscape Maintenance Districts with different fee structures.

COMMISSION MEETINGS

The Citywide PRTMP Update was presented to the Parks and Community Services Commission in April 2019, and to the Youth Advisory Commission in September 2019. Feedback from these Commissioners included...

PARKS AND COMMUNITY SERVICES COMMISSION

- Support more connective paths and trails.
- Current park system has been shaped by (1) developer-driven neighborhood parks and (2) strong interest in youth sports
- Need to find good balance between scheduled park use and casual enjoyment of parks
- Want diverse park features like greenbelts, rail trails, a memorable central park
- Want to see more contemporary amenities
- Tracy needs an all-inclusive park welcoming to people with special needs.
- Excited about a nature park, and envision educational components related to sustainability
- Need for more shade in parks
- Plan Update should address cost of enhancements
- Recognition that homeless use the parks, and there's a challenge in accommodating everyone
- Plan Update should include outreach to Tracy's diverse communities and seniors, and that takes into account the long commutes that many in Tracy experience

YOUTH ADVISORY COMMISSION

What do we love about Tracy parks, trails, and recreation programs?

- Sports and exercise for teenagers
- Large number of parks in the city
- Open to many people of many ages, welcoming
- Playgrounds and hangout spots
- Normal maintenance, maybe to slightly higher standard
- More trails, with a better understanding and communication of where those trails are

How can Tracy parks and recreation better support youth?

- More events with creative themes
- Additional lighting to have a safe nighttime hangout spot
- Classes for the sort of education not typically taught at school
- Embracing the idea that children and teenagers are on their phones, and use that as an opportunity for mapping locations or teaching environmental awareness.

POP-UP AND TARGETED OUTREACH

The planning team conducted a variety of "pop-up" outreach and outreach to community organizations between June and August 2019. We asked:

What do you love about Tracy parks?

What would you like to see?

About 60 community members sounded off with a great range of responses.

There are many things people love about Tracy's parks. Parks are abundant and convenient, and good places to bring children. People love the friendliness of park staff. In the summer, there is the community pool, splash pads, and 4th of July celebrations. In the spring and fall, there are plenty of recreation facilities and activities for school-aged children. In the mild winters, everyone can enjoy the all the sunny open spaces.

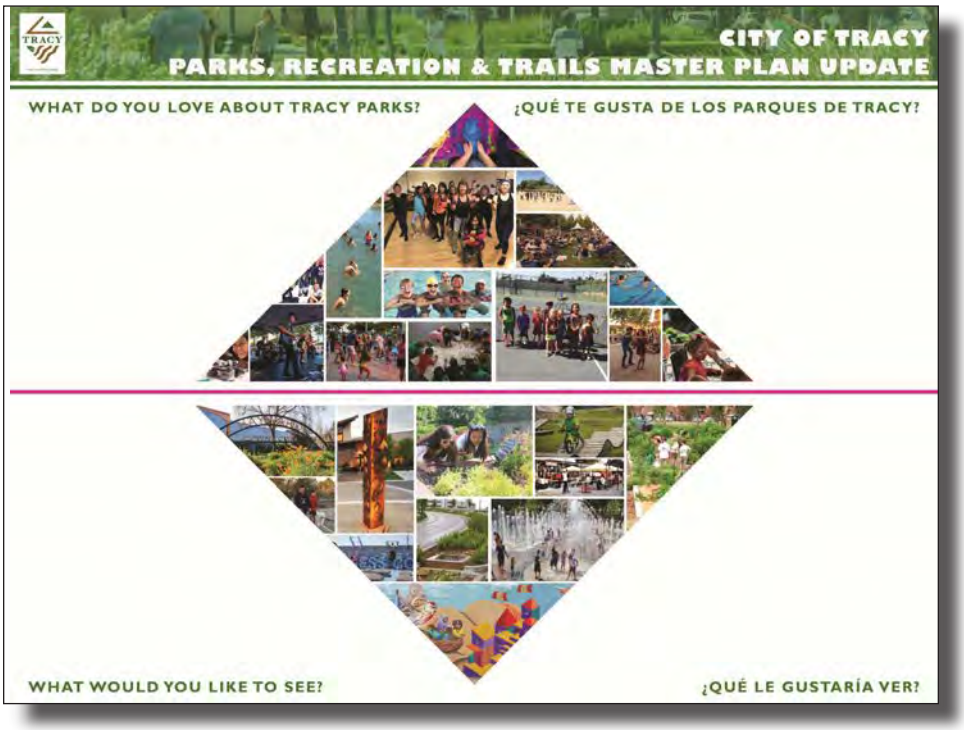
People also offered lots of ideas for how Tracy can improve our parks. For many, this starts with adding more trees, shade, and water features to make parks more comfortable in the summer. More gathering spaces, picnic areas, and barbecue areas would be great places to bring the whole family. To enjoy the parks even more, a well-marked trail system

would enhance the convenience people already love.

People also want to see a wider range of events available for parks and recreation, including block parties, art classes, inexpensive day camps for children, cultural events, fitness classes, and performances.

Some features that already exist are so important, people felt that they needed upgrades or even more attention to maintenance. This applies to water fountains, bathrooms, grass and planted areas. Lighting and cleanliness were areas of concern.





The planning team conducted a variety of "pop-up" outreach and outreach to community organizations between June and August 2019.

COMMUNITY WORKSHOPS

COMMUNITY WORKSHOP 1

The City hosted a community workshop on October 2, 2019 at the Lolly Hansen Senior Center. The workshop consisted of a series of interactive "stations" on each of the big themes of the Plan Update - parks, recreation, and trails – as well as access to nature and parks as places to come together as a community. Following the workshop, the activities were reproduced online.

PARKS

I WOULD USE PARKS MORE OFTEN IF WE HAD...

Community members would use parks more often if parks were more comfortable, with more shade and bathrooms, and felt safer, cleaner, and better lit.

WHAT AMENITIES WOULD YOU LIKE TO SEE IN TRACY PARKS?

Popular responses were picnic facilities, natural play areas, and water play features. These are features that can accommodate gatherings of family and friends and appeal to people of all ages.

RECREATION

WHAT ARE YOUR FAVORITE TIMES FOR RECREATIONAL ACTIVITIES?

This set of Tracy residents tends to use park in the early morning or late afternoon on weekdays, to bring kids to the playground, walk dogs, or simply get a little exercise. Weekend activities at the park are often more social and span more of the day.

WHAT ACTIVITIES DOES TRACY NEED MORE OF?

People reported that Tracy's recreation programming serves school-aged children best, as well as active adults. Activities that people wanted more of included yoga, teen programs, and art ("painting in the park.")

WHAT BARRIERS KEEP YOU FROM ENJOYING THE RECREATION YOU LOVE?

Many people noted not feeling safe, or feeling uncomfortable with some of the people in the park. On another note, people also mentioned not knowing what programs the City offers and suggesting better communications.

TRAILS

TRAILS IN TRACY SHOULD CONNECT ME TO...

When asked to draw lines between landmarks that should be connected by trails, many people drew lines from "home" to all the other destinations. People especially want trails to connect to community parks and nearby natural areas.

TRAILS IN TRACY SHOULD INCLUDE...

Community members want trails to be accessible for all user groups and have benches and shade. They emphasized the importance of safe places to walk and bike.

TRACY + NATURE

The current parks system has a variety of recreation opportunities. One that is missing—and missed—is good access to natural places.

WHAT DO YOU WANT IN A NATURE PARK?

People noted that they want natural habitat, long, uninterrupted trails, and places to sit and enjoy the environment. Some people mentioned getting involved with the process: community planting days and other volunteer opportunities.

TRACY TOGETHER

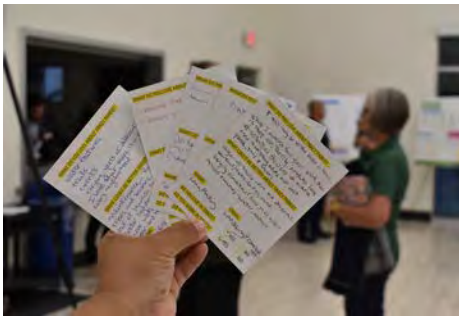
WHAT TYPES OF PLACES AND EVENTS WOULD MAKE TRACY MORE VIBRANT?

People were enthusiastic about markets, food festivals, concerts and movies in the park. These activities could be inclusive for a wide range of age groups.

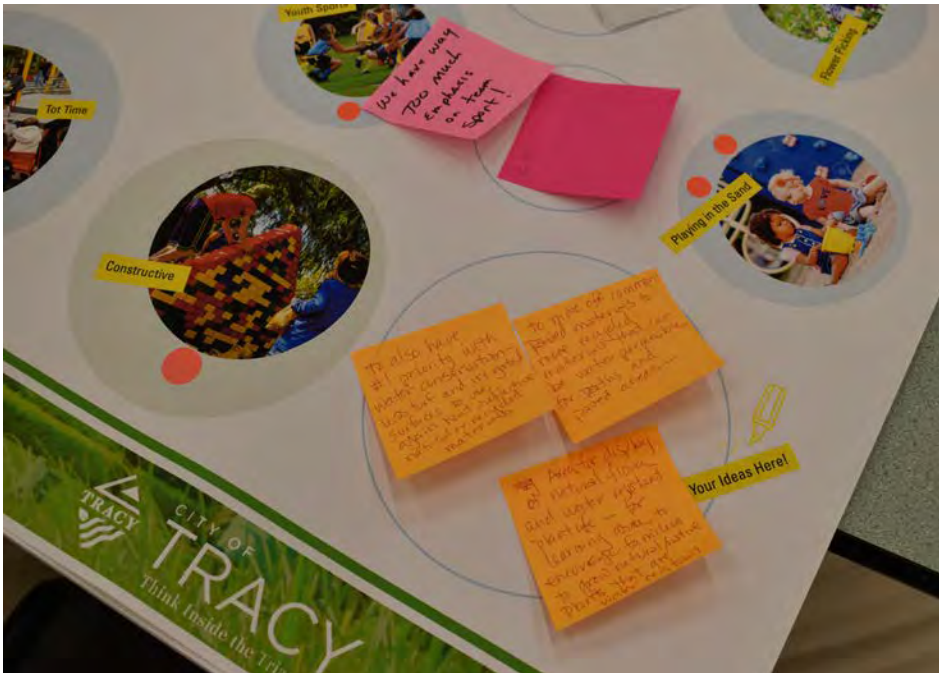
TRACY AT PLAY

People of all ages contributed their thoughts about the state of play in Tracy parks, using post-it note and dots on inspiration images.

People noted their desire for a greater range of play areas, and perhaps less of an emphasis on team sports. In the dot exercise, participants indicated adventure play, water play, and creative activities.









The first community workshop was a hands-on affair,

COMMUNITY WORKSHOP 2

By summer 2020, the planning team had developed goals and policies and preliminary park improvements—together, the heart of what will guide the development of the parks and recreation system in the years ahead. These goals, policies and projects were the focus of a virtual community workshop and an online survey in August and September 2020.

City Staff publicized the August 27 virtual workshop with posters, email blasts, social media posts, and direct outreach to stakeholders. While only 8 participants attended the virtual workshop, feedback was valuable. The workshop's activities were then translated into an online survey, which was completed by 26 community members.

ACTIVITY 1: GOALS

Twelve draft goals for Tracy's parks, recreation and trails were presented, with images to convey what each goal might mean for the City's park system. Participants were asked to rate the importance of each goal on a statement of 1 (not a priority) to 5 (high priority).

All of the draft goals were generally felt to be important by participants, earning average ratings of between 4 and 5. Well-Maintained Parks emerged as the goal with the greatest support, followed by Access to Natural Places, Comfortable and Attractive Parks, Safe Parks, and Trails for Recreation and Active Transportation.

ACTIVITY 2: PARK-BY-PARK PRIORITIES

In a second activity, community members took a virtual tour through a selection of Tracy parks where significant improvements could be made, and asked to provide input on (1) how much of a priority it should be to improve each park, and (2) which potential improvements they felt most positive about.

Parks that were mentioned by workshop and survey participants but not included in the activity were:

- William Adams Park
- Veterans Park
- Joseph Tiago Park
- Dorlane Thrasher Park
- Bill Schwartz Park
- William Adams Park

Figure 2-13
Priorities for Gretchen Talley Park
Priority Score: 3.48

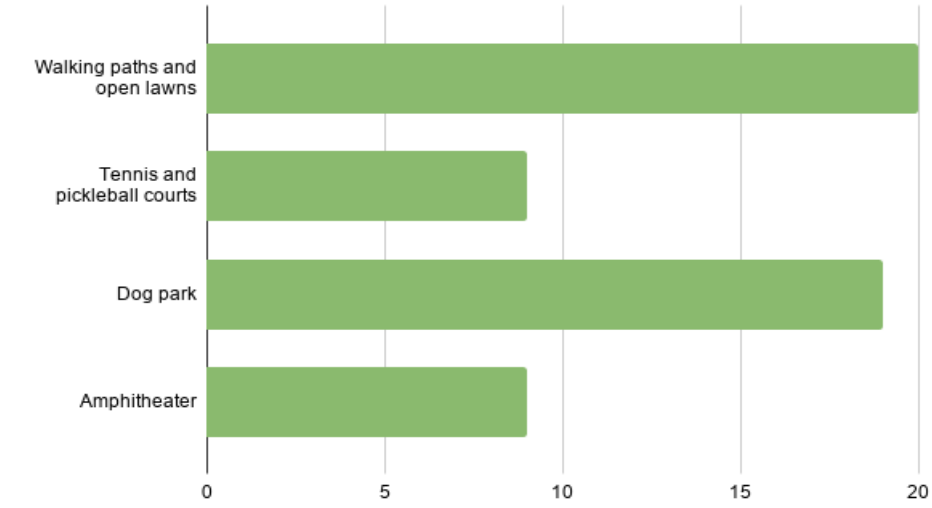


Figure 2-14
Priorities for Lincoln Park
Priority Score: 3.35

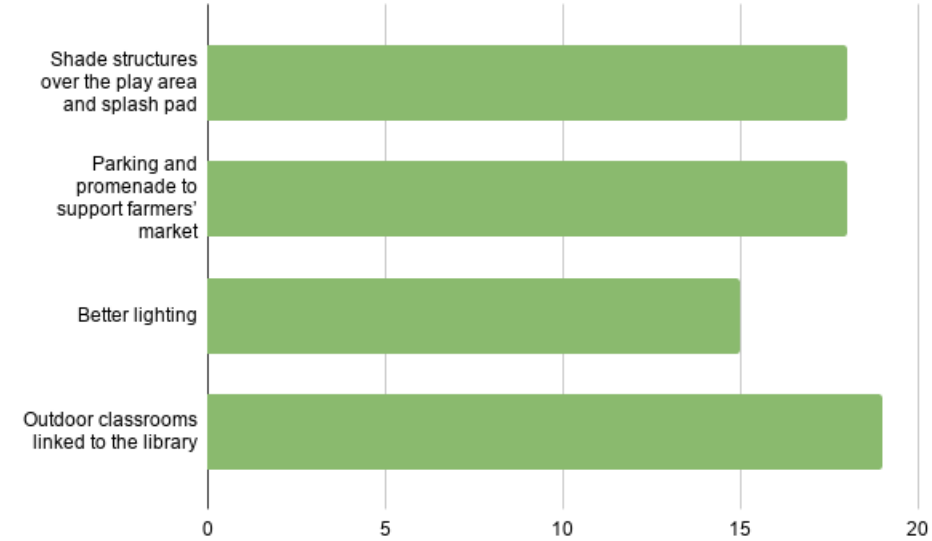


Figure 2-15
Priorities for Ritter Family Ball Park

Priority Score: 3.32

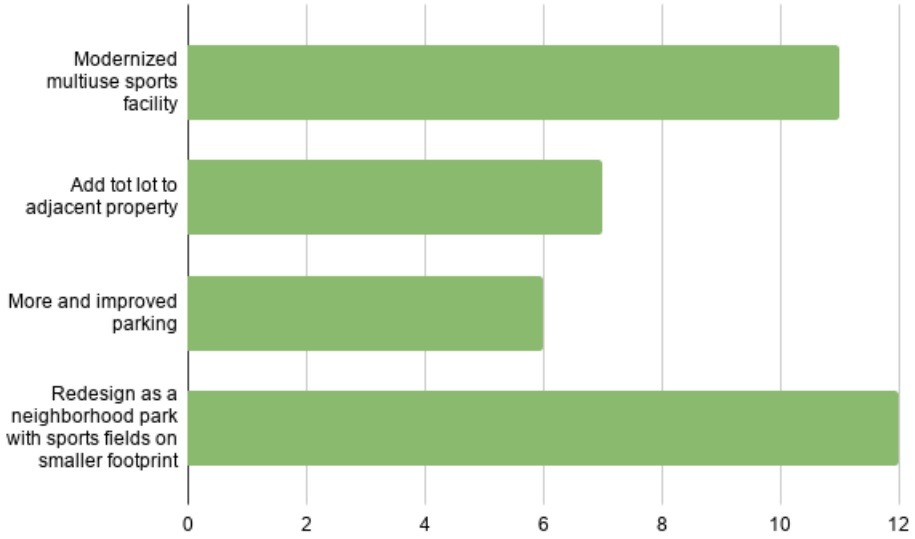


Figure 2-16
Priorities for El Pescadero Park

Priority Score: 3.17

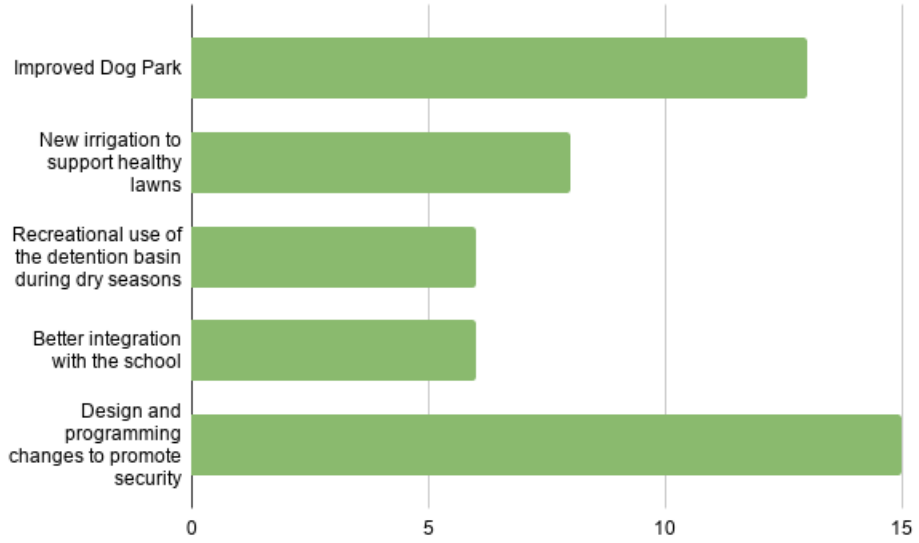


Figure 2-17

Priorities for Plasencia Fields

Priority Score: 3.12

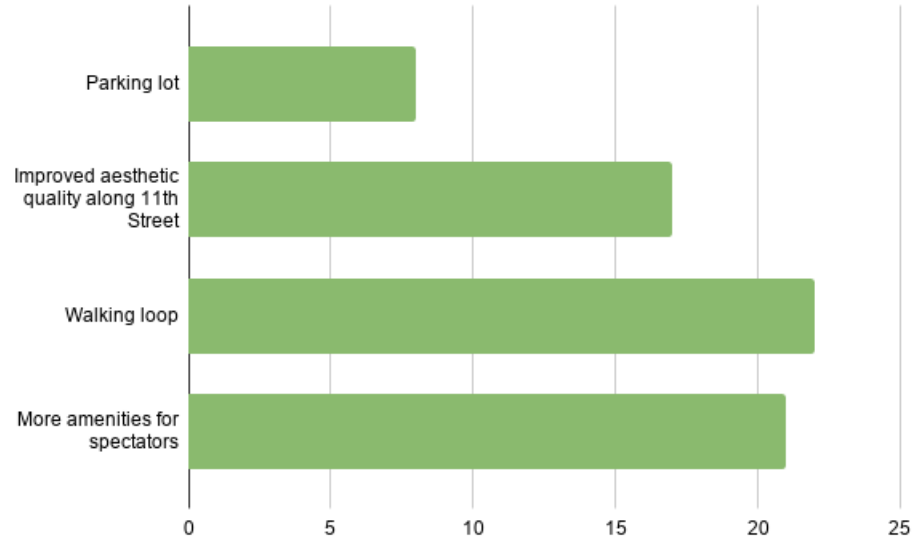
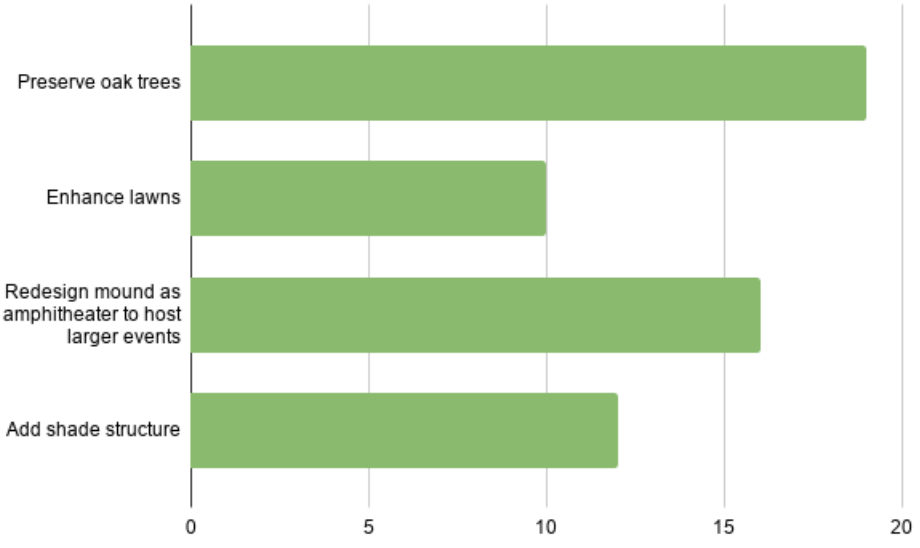


Figure 2-18

Priorities for Dr. Powers Park

Priority Score: 2.96



SURVEY

A phone and email-to-web hybrid survey of adult Tracy residents was conducted in May 2019. The survey resulted in 472 interviews conducted live in English and Spanish by trained, professional interviewers; land lines and mobile phones were both included. A web survey was made available in English and Spanish.

Tracy Parks and Recreation facilities are well-used by Tracy residents, with two-thirds using them frequently or often and most living within a ten-minute walk to a park. While a majority of residents are satisfied with Tracy Parks and Recreation overall, some express concerns over maintenance and safety, and park users rank those as top priorities for park improvements. Other priorities for the Master Plan Update include expanding recreation programs for teens and creating open space areas and nature trails. A substantial portion of residents would like additional sports and exercise programs. Over two-thirds say that a linked park system would make them more likely to utilize nearby parks. The most frequently cited reasons for not using parks include lack of time, safety concerns, cleanliness, homeless issues, and heat in the parks.

KEY FINDINGS

TRACY PARKS AND RECREATION USAGE

Two-thirds of residents (66%) currently use City parks and recreation facilities frequently or occasionally. Those with children in their household and those in their 30s are the most frequent park users, while homeowners and people who have lived in Tracy for over 20 years are less likely to be frequent park users than their counterparts. Playgrounds, picnic areas, and athletics fields are among the most-used facilities in Tracy parks among all residents.

Three-in-ten people cite bringing their children to playgrounds and other facilities as the top reason to use parks. One-fifth of residents (21%) indicate that a lack of time is a major barrier to visiting parks. Improving safety and maintenance and providing more shaded areas are the top changes that would encourage residents to use parks more often. Of the 22% of people that have reserved a park or recreation facility, one-in-ten suggest an improvement in communication and assistance.

SATISFACTION WITH PARKS

A majority of residents (60%) are satisfied with City parks and recreation facilities overall, compared to 19% who are not satisfied. Women, younger residents, and infrequent park users are slightly less satisfied with parks. Residents are satisfied with the availability of parks and recreation opportunities close to home, with 25% of residents saying they are extremely satisfied. Only four-in-ten residents (41%) are satisfied with the recreation programs and activities offered.

MASTER PLAN UPDATE PRIORITIES

Improving and maintaining existing parks is the highest priority, with half of respondents ranking it as a 7, the highest possible priority score. Path safety, ensuring recreation opportunities for all, creating nature trails and open space, improving accessibility and restrooms are also high priorities for residents. Programs for teens are the highest-ranked age-specific priority, with almost four-in-ten residents (39%) considering this a very high priority, followed by programs for kids aged twelve and under. Park priorities are similar, regardless of how frequently residents use the parks.

Though a large number of residents have no suggestions for additional recreation classes, close to one-fifth of respondents (18%) say that sports and exercise classes are their most desired recreation classes. Almost seven-in-ten residents (68%) say that a linked park system would make them more likely to use the park system, with support highest among younger residents (77% for those in their 30s; 72% for under 30) and those with children (70%).

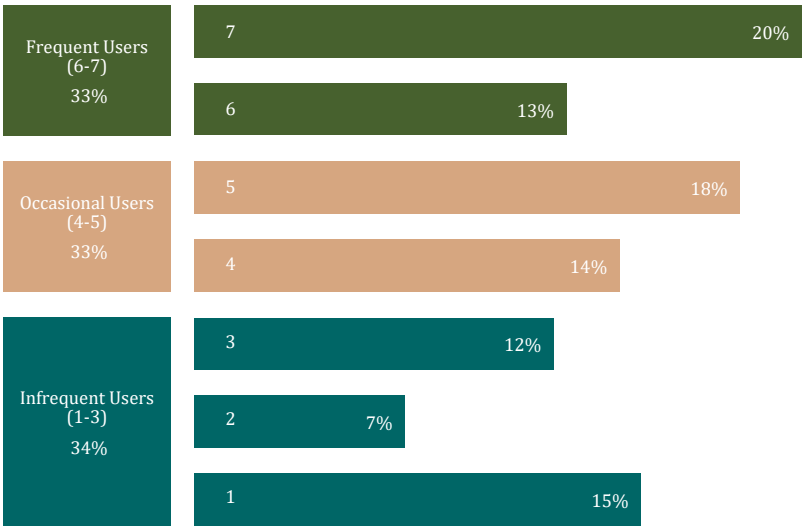
SURVEY QUESTIONS

This section summarizes just a few of the many findings of the survey. For more information, see the Comprehensive Profile.

How frequently do you or others in your household use Tracy parks and recreation areas? Please answer on a scale of 1 to 7 where 1 means very infrequently and 7 means very frequently.

Those with children in the household, and those in their 30s are more frequent park users.

Figure 2-19
Frequency of Park Use

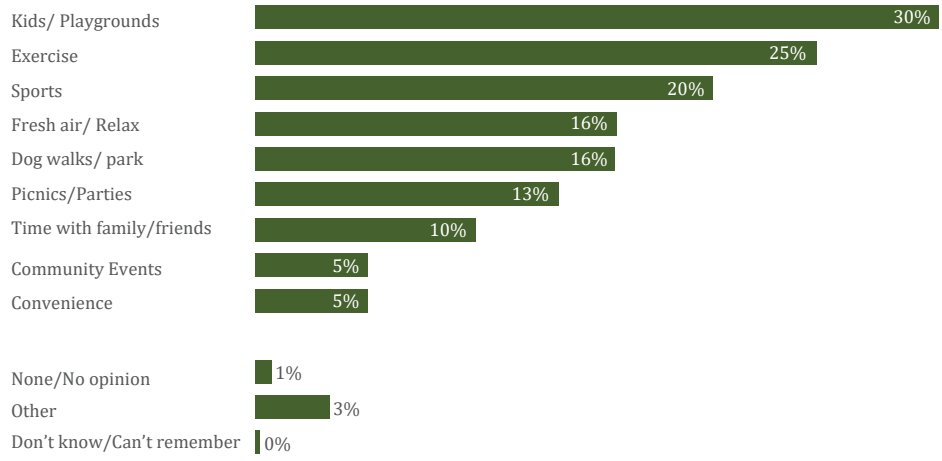


Responses indicated frequency of use on a scale of 1 to 7, where 1 means very infrequently and 7 means very frequently.

What are the top two reasons that you and your household visit or use Tracy parks and recreation facilities?

Bringing children to the parks/ facilities, exercise, and sports are the most commonly stated reasons for using parks and recreation.

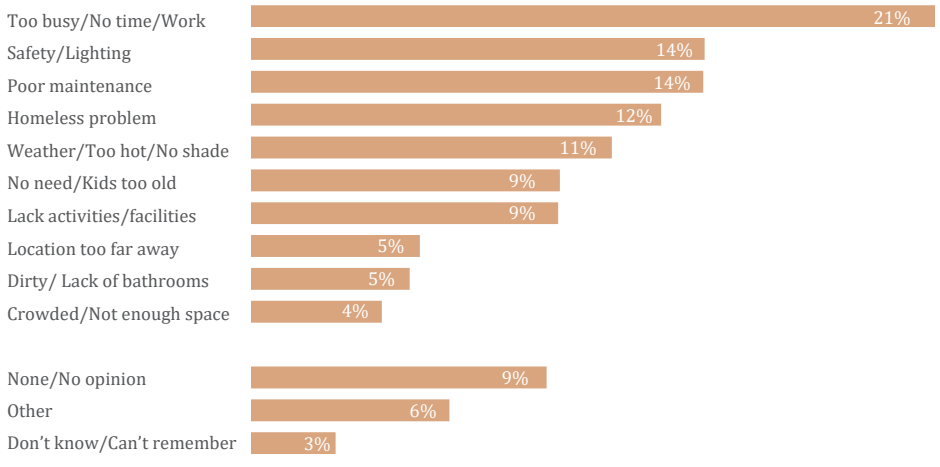
Figure 2-20
Reasons to Use Parks



What are the top two barriers that keep you from visiting public parks in Tracy more often?

The most common reason why residents don't visit parks more often is because they are busy; however, safety and cleanliness are also concerns for many.

Figure 2-21
Barriers to Park Use



The City of Tracy is updating the Parks, Recreation, and Trails Master Plan. How much of a priority do you think each of the following should be for the Parks, Recreation, and Trails Master Plan Update using a scale from 1 to 7 where 1 is not at all a priority and 7 is a very high priority?

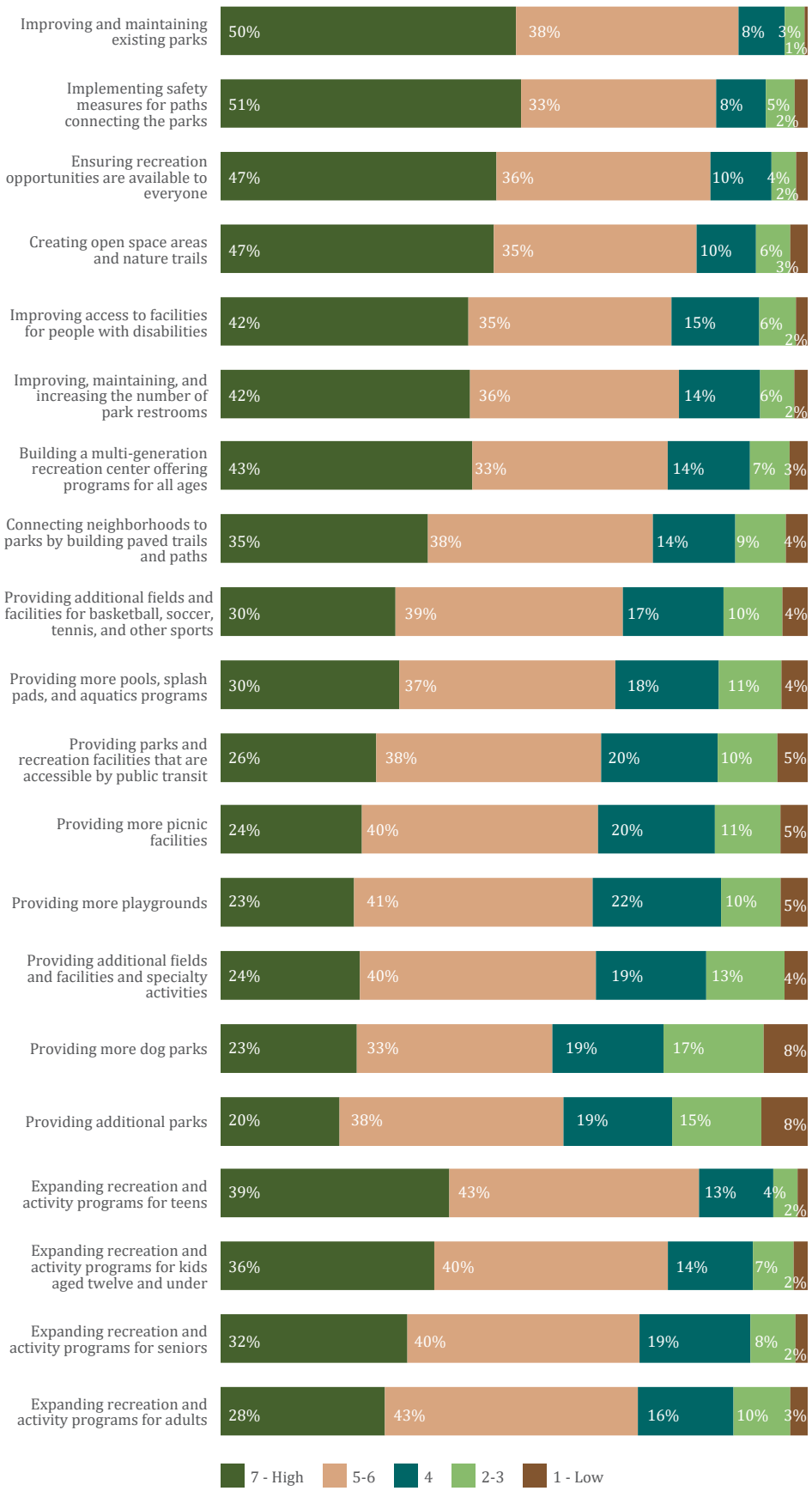
Improving and maintaining existing parks is the highest priority tested. Path safety, ensuring opportunities are available for all, creating nature trails and open space, improving accessibility, and improving restrooms are also priorities.

Priorities like a multi-generation recreation center, connecting neighborhoods to parks with trails and paths, and providing additional fields/facilities for sports are second-tier priorities.

Providing more facilities for specialty activities and dog owners and providing additional parks are lower priorities.

Programs for teens are the highest-ranked age-specific priority.

Figure 2-22
Master Plan Update Priorities



PARKS

CHAPTER 03



This chapter outlines the vision and goals for the City of Tracy's parks. It is accompanied by a set of policies designed to bring the vision to life. Community input gathered through the surveys and public meetings directly shaped the vision and goals, laying the groundwork for the plan's policies and strategies. Additional goals and policies for Recreation and Trails are described in Chapters 4 and 5, respectively.

IN THIS CHAPTER:

- The Future of our Parks
- Goal 1: A Park System for a Growing City
- Goal 2: Well-Maintained Parks
- Goal 3: Safe Parks
- Goal 4: Equitable + Inclusive Parks
- Goal 5: Comfortable + Attractive Parks
- Goal 6: Interesting + Diverse Parks
- Goal 7: Sustainable Parks
- Park Design Guidelines

THE FUTURE OF OUR PARKS

A VISION SHAPED BY THE COMMUNITY

Listening to the voices of the community was at the forefront of the planning process. Several themes emerged for our parks as we developed the Master Plan Update through our conversations and workshops with the community, including accessibility, maintenance, safety, equity, comfort, variety, and sustainability. These themes form the foundation of the update and are carefully woven into the vision and goals.

With regard to our parks, the majority of residents who participated in the surveys and events as well as our stakeholders agreed that Tracy is fortunate to have many beautiful parks. Residents generally live within ¾ of a mile of a park so these green spaces truly shape our daily lives. The overwhelming desire is to maintain and enhance Tracy's existing parks while continuing to provide a similar level of park access equitably across the city and to all of Tracy's growing population. Safety is a top concern and the primary barrier to increasing park usage. It is therefore, front and center in our overarching vision for the future. Another priority is ensuring our facilities are comfortable and attractive with amenities such as well-maintained bathrooms and ample shade so that park users can enjoy the facilities.



MacDonald Park

A VISION THAT PROTECTS NATURAL RESOURCES

Our parks are also home to valuable natural resources. Preserving wildlife habitat, expanding the tree canopy and protecting water quality are just a few of the additional benefits that our parks provide, which enhance the quality of life in Tracy. Caring for and protecting these natural systems for generations of Tracy residents to enjoy is another cornerstone of the Master Plan Update.

A VISION BASED ON RIGOROUS ANALYSIS

To get where we want to go, we needed to take an honest look at where we are today and identify the gaps to map out a strategy to reach our vision. The specific priorities, recommendations, and policies described in this document respond to a comprehensive

analysis of existing conditions. This included a park by park assessment; an inventory of park types, amenities, character, programs, and participation rates; and a close examination of how our parks are distributed across the city and accessed by residents.

A VISION BASED ON THE CITY'S PROFILE & TRENDS

Tracy is growing. Understanding how the population is projected to grow is another critical component of the analysis that informed the Master Plan Update. As described in Chapter 2, a thorough review of both national and local trends in recreation as well as the potential demand across all age segments informed the recommendations outlined by the Update with the intent that Tracy's parks will continue to offer something special for all residents, young and young at heart.







Village Green Park

GOAL 1

A PARK SYSTEM FOR A GROWING CITY

Tracy's racially and ethnically diverse population is projected to grow by 48,341 between 2020 and 2040. Tracy's park system will continue to grow and be enriched to meet the needs of a growing community with a high quality of life.

POLICIES:

1A. Park Classification

1B. Park Acreage Level of Service

1C. Access to Parks

1D. Park Land Dedication & Park Development Impact Fees

1E. Flexibility to Meet City Goals

1F. Conformance with City Standards & Guidelines

1G. Concurrent Development

1H. Public Access

GOAL 1: A PARK SYSTEM FOR A GROWING CITY

POLICIES

1A. Park Types

The Citywide Parks, Recreation and Trails Master Plan creates an updated park classification system and updated park definitions and standards. These standards will guide how the City and its partners locate and design new parks, from neighborhood parks to downtown activated plazas to sports complexes to open spaces featuring natural conditions. The City may, as appropriate and at its discretion, make modifications and exceptions when justified in writing. The City has final approval of park designs and amenities.

Park types are defined here.

Neighborhood Parks

Medium-sized parks that provide recreation opportunities within walking or biking distance for residents in one or more neighborhoods.

- **Park Size and Shape:** 2 to 10 acres. Ensure that the park site is of a shape suitable for park use. Neighborhood Parks between 2 and 4 acres in size must be connected via a continuous accessible route through a linear park or greenbelt/open space to another existing park or planned park at or above 4 acres in size. Proposed connections using standard city sidewalks will not be considered.
- **Location Characteristics:** Neighborhood parks should generally be central to the neighborhoods they serve, with positive, synergistic relationships with adjacent land uses. Parks should be well-integrated into the larger park system. Relevant considerations include good spacing of park sites and the potential for linear park and trail connections.
- Opportunities for colocation with schools and other community facilities, stormwater detention basins, and trail corridors should be optimized.
- Avoid elements that restrict the function, development or usability of the land, such as underground or overhead utilities, gas/fuel transmission lines, unsuitable topography, contamination, or development restrictions that would limit park use.
- Avoid sites with excessive slopes, swales, drainage courses, creeks, wetlands/biological habitat and similar landscapes, where these conditions would not also accommodate recreational use or add to the aesthetics and enjoyment of the park experience.
- **Frontage and Access:** Provide at least two street frontages, preferably on local or collector streets with sidewalks. Where feasible, the park should be linked to the City's trail and bikeways system.
- Minimize physical barriers, such as steep slopes and the crossing of major arterials.
- **Recreational Capacity:** At least 80% of the site should be relatively level, developable and usable.
- **Required Amenities:** All new neighborhood parks should include the following amenities. Exceptions may be made at the City's discretion.
- Site identification signage consistent with City standards.
- Appropriate site furnishings (benches, drinking fountains, trash receptacles, picnic tables, etc.) for the intended size and

use of the park.

- Playground equipment or comparable creative play environment for ages 2-5 and ages 6-12 (or a play environment serving ages 2-12), including climbing apparatus and swings.
- Flat, open, contiguous turf area for unstructured play; minimum one acre.
- At least 10 picnic tables, with 75% of tables under one shade structure.
- At least one active use amenity, such as a sport court (lighted or unlighted), such as basketball, tennis, volleyball, handball, pickleball, futsal, bocce, shuffleboard, horseshoes, etc.), skate spot, or other compatible active use facility, chosen with City guidance based on need.
- Accessible pathway connecting park elements and creating an appealing walking loop.
- General landscape improvements in natural or open space areas, including ground covers, plantings and trees for shade and windbreaks.
- Bike parking, with a minimum of 5 spaces per developed park acre.





Neighborhood parks include playgrounds, shaded seating areas, open lawns, and other features that add to a neighborhood's quality of life (Ken Yasui and Edgar Thoming parks, above).

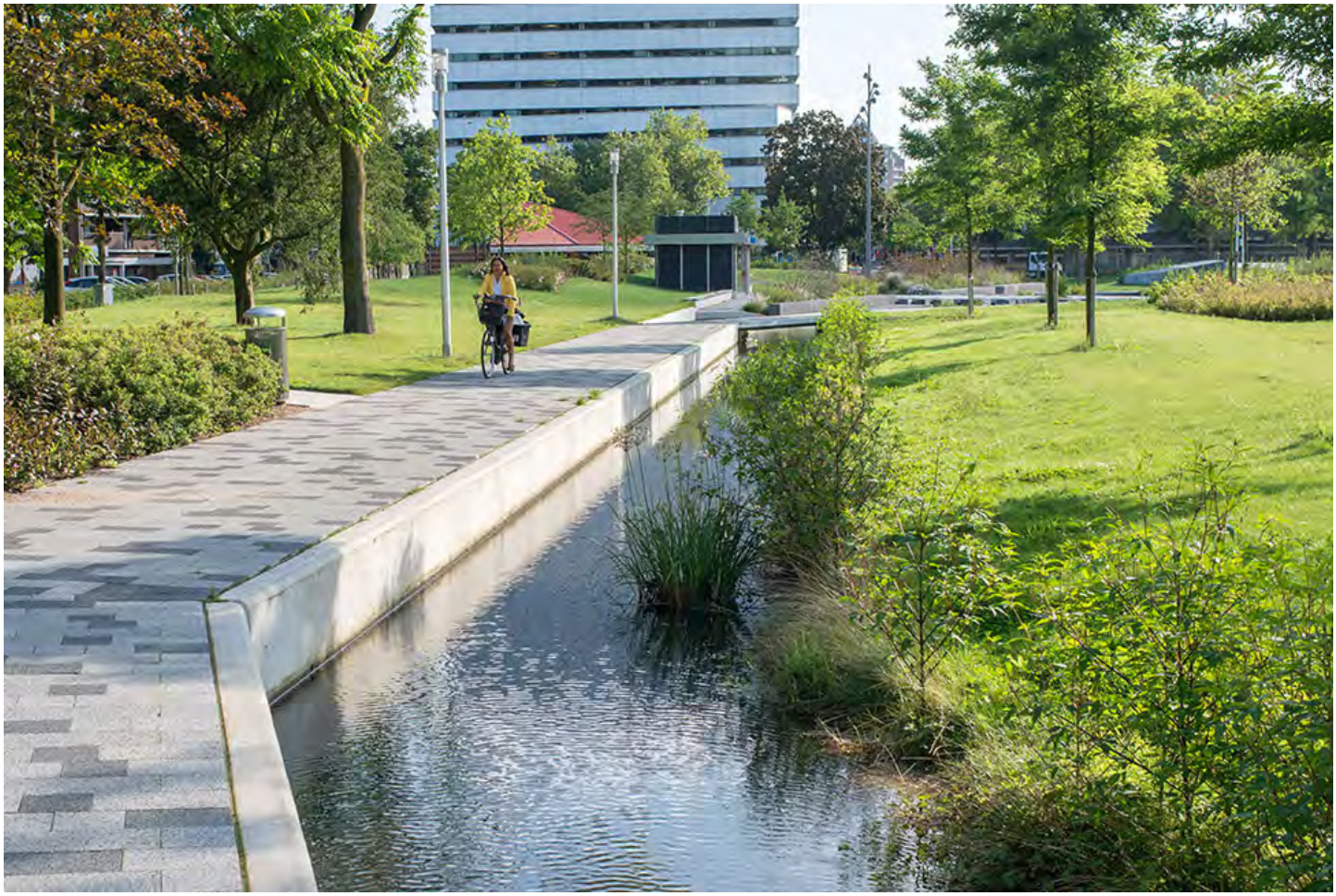
- **Additional Amenities to Consider:** All new neighborhood parks shall also include additional amenities, approved at the City's discretion, including but not limited to the following:
- Additional contiguous turf area for unstructured play (to create a larger play space than required).
- Additional covered picnic tables.
- Additional small or mid-sized picnic shelter and barbecues (serving 25-40 people or 40-60 people).
- Additional sport courts or active use facilities selected with City guidance to meet recreation needs and provide geographical equity.
- Non-lighted sports fields for organized league practice and play (e.g. baseball/softball, soccer, or multi-purpose field overlays).
- Small-scale spray or water-play area.
- Seatwalls or hillside seating.
- Gazebo trellis or arbor.
- Interpretive signage.
- Permanent restrooms; highly encouraged for neighborhood parks with active recreational amenities that encourage park users to stay at the park for longer than 1 hour. The number of restrooms should be determined based on park capacity and demand.
- Parking. Where parking is provided, it is necessary to provide accessible parking.
- Any additional amenities must be consistent with higher maintenance and funding expectations for this site.
- **Amenities to Avoid:**
- Community or regional-scale recreation facilities, such as recreation centers, stadiums, sports complexes, synthetic turf fields, swimming pools, aquatic centers or other indoor activity space.
- High-maintenance landscaping improvements (e.g., rose gardens).
- **Natural Areas and Open Space:** Natural areas for passive recreation, resource/habitat protection, windbreaks, and site aesthetics/character may typically occupy 10-20% of the site. Non-developed, non-natural park areas should be designed as attractive open space, with appropriate ground covers, grasses, and plantings consistent with City water conservation and landscaping guidelines.

Linear Parks

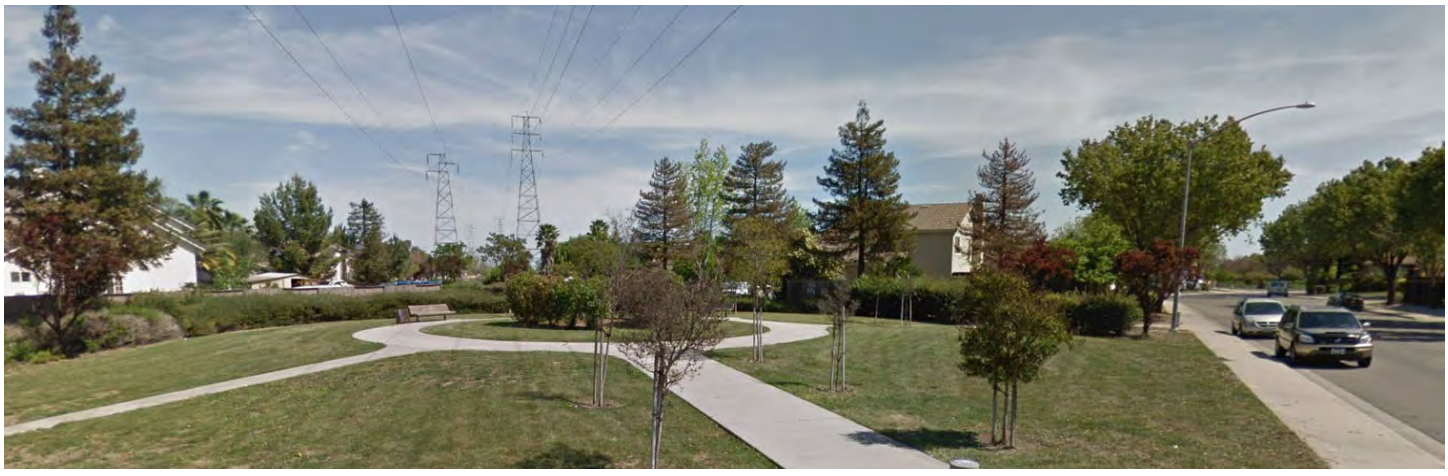
A linear park provides trails and other recreational opportunities, allows for uninterrupted and safe pedestrian and bicycle movement throughout the community, and protects open space corridors.

Linear parks are recognized by the City of Tracy as a type of neighborhood park, and treated as such for the purposes of parks planning and development.

- **Park Size and Shape:** Linear Parks should be at least 50 feet wide, to accommodate both a multiuse trail and a natural or park-like environment with additional recreational amenities, with greater width and amenities at entry points or connections. Lengths or segments less than 0.5 miles may not be able to support the intended recreational use and purpose of linear parks. If linear parks are designed to be integrated into utility easements and corridors, the park widths shall be in addition to widths of the easements.
- **Location Characteristics:** Linear parks shall be integrated with the City's system of trails and Class I bikeways, and provide connections to neighborhood and community parks, open spaces, and/or key community destinations.
- Proposed linear parks cannot be located within active transportation, utility, or stormwater corridors, but may be adjacent to these features or connect to proposed trails in these areas.
- **Frontage and Access:** Linear parks must provide off-street trail corridors for pedestrians and bikes, and also provide drivable access for maintenance and emergency vehicles.
- **Required Amenities:** Linear parks shall include:
- Site identification signage consistent with City standards. In addition, a monument shall be placed at each main entry point as determined by Parks & Recreation Staff.
- Walking and biking or multiuse trail with a 16-foot overall right-



Linear parks/greenbelts have multiuse trails, and connect between parks or other destinations or protect valued open space,.



Linear park extending from Hoyt Park. Where linear parks are integrated with utility corridors, park width shall be in addition to the easement.

of-way including 6-foot multiuse travel lanes and 2-foot soft shoulders

- Appropriate site furnishings (benches, bike racks, drinking fountains, trash receptacles, etc.)
- Wayfinding signage and mileage markers
- Natural landscape areas.
- Some combination of additonal recreational amenities such as those listed below, selected in coordination with the City.
- **Amenities to Consider:** Linear parks may include additional amenities. These may include:
- Viewpoints
- Picnic areas
- Par course/outdoor fitness equipment
- Disc golf
- Public art walks
- Interpretive signage
- Turf area for unstructured play
- **Amenities to Avoid:**
- Sports fields
- Community or regional-scale recreation facilities
- High-maintenance landscaping improvements
- **Natural Areas and Open Space:** Natural areas for passive recreation, resource/habitat protection, windbreaks, and site aesthetics/character may typically occupy 50% of a linear park site.

For more detail on trails, see Chapter 5: Trails.

Community Parks

Large parks that provide opportunities for community-scale facilities to serve a substantial portion of the City.

- **Park Size:** 10 to 30 acres. Ensure that the park site is of a shape suitable for recreation amenities.
- **Location Characteristics:** Community parks should:
- Be well-connected to the City's transportation network, with a synergistic relationship with other community-oriented uses such as middle or high schools, public facilities that draw people from around the city, and community-oriented retail.
- Be well-integrated into the larger park system. Relevant considerations include good spacing of park sites and the potential for greenway and trail connections.
- Avoid elements that restrict the function, development or usability of the land, such as underground or overhead utilities, gas/fuel transmission lines, unsuitable topography, contamination, or development restrictions that would limit park use.



Community parks include special recreation amenities that serve the whole community (Joe Wilson Pool at Dr. Powers Park, above).

- Avoid sites with excessive slopes, swales, drainage courses, creeks, wetlands/biological habitat and similar landscapes, where these conditions would not also accommodate recreational use or add to the aesthetics and enjoyment of the park experience.
- Opportunities for colocation with schools and other community facilities, stormwater detention basins, and trail corridors should be optimized.
- **Frontage and Access:** Provide two major street frontages with at least 200 feet of frontage each. Provide direct connections to sidewalks, bike facilities, and preferably, to the planned trail system. The site should also be served by transit, with a transit stop incorporated.
- **Recreational Capacity.** Approximately 75% of the site should be relatively level, developable and usable.
- **Required Amenities:** All new community parks should include the following amenities. Exceptions may be made at the City's discretion.
- Site identification signage consistent with City standards.
- Appropriate site furnishings (benches, bike racks, drinking fountains, trash receptacles, etc.) for the intended size, scale and use of the park.
- Unique, thematic, or innovative play equipment for ages 2-5 and ages 6-12, including climbing apparatus, swings, and shade structures over play area.
- Sprayground or water play area.
- Flat, open, contiguous turf area for unstructured play; minimum one acre.
- At least one dedicated lighted, regulation sports field for league practice and games for youth/adult softball, baseball, football, and/or soccer, selected to meet recreation needs and provide geographical equity.
- At least three sports courts (e.g. basketball, sand volleyball, tennis), selected to meet recreation needs and provide geographical equity.
- One special recreation amenity such as a community garden, climbing spire/wall, disc golf course, skate park, or dog park.
- Large group picnic area, with shade shelter, tables, barbecues, and appropriate amenities.
- Permanent restrooms; the number of restrooms should be determined based on park capacity and demand.
- Accessible pathway system connecting park elements, and hard-surfaced path that provides an attractive walking loop or series of loops (1 mile or more).
- Soft-surfaced jogging path or nature trail (1/2 mile or more).
- General landscape improvements in open space areas, including ground covers, plantings and trees for shade and windbreaks.
- Bike parking, with a minimum of 5 spaces per developed park acre.
- On-site vehicular parking, at 5 spaces per developed park acre, with additional parking to support large group facilities and/or multiple sport fields. This parking may be provided on-street as well as on-site. Accessible parking must make up the ratio of total on-street and on-site parking spaces required by ADA standards.
- Lockable trash enclosure with integrated shade cover. The enclosure shall be architecturally compatible with other park elements. Dumpster needs to be provided as well. Location shall be in an area away from main park attractions and be coordinated with Public Works Department.
- **Additional Amenities to Consider:** All new community parks shall also include additional amenities pproved at the City's discretion, including but not limited to the following.
- Additional contiguous turf area for unstructured play
- Destination playground.
- Topographic element with features such as a tumbling hill, viewpoint, hillside slide, or hillside seating
- Additional lighted sports fields for scheduled organized sports play or practice, selected to meet recreation needs and provide geographical equity.
- Additional sports courts selected to meet recreation needs and provide geographical equity.
- Indoor recreation center, gymnasium, or community center.
- Additional recreation amenities,

such as a disc golf course, running track, skate park, freestyle BMX park or pump track, dog park, roller hockey, climbing wall or spire, par course, or outdoor fitness equipment.

- Specialty facilities, such as R/C car track or airfield, miniature golf, fishing pond, mountain bike trail, BMX dirt track, or other compatible use.
- Additional covered picnic tables.
- Additional small or mid-sized picnic shelter and barbecues (serving 25-40 people or 40-60 people).
- Outdoor amphitheater.
- Interpretive signage or trail.
- Public art or memorial.
- Environmental education facility or nature kiosk.
- Community garden.
- Special or display gardens (rose gardens, pollinator gardens, California natives gardens, demonstration gardens, etc.).
- Storage or maintenance buildings and yard. If visible, these should be architecturally compatible with other park elements. Any exterior work areas should be screened from view.
- Any additional amenities must be consistent with higher maintenance and funding expectations for this site.
- **Natural Areas and Open Space:** Natural areas for passive recreation, resource/habitat protection, windbreaks, and site aesthetics/character may typically occupy 15-25% of the site. Non-developed, non-natural park areas should be designed as attractive open space, with appropriate ground covers, grasses, and plantings consistent with City water conservation and landscaping guidelines.

Sports Complexes

Sports complexes are parks that are primarily devoted to sports fields, play courts, and other facilities for organized athletics. Sports complexes should also include elements that create a positive and enjoyable park experience for families and spectators.

Sports complexes are recognized by the City of Tracy as a type of community park, and treated as such for the purposes of parks planning and development.

- **Park Size:** 10 to 100+ acres. Ensure that all land within park site is of a shape suitable for park use.
- **Location Characteristics:** Sports complexes will:
- Be well-connected to the City's transportation network and .integrated into the larger park system. Relevant considerations include equitable distribution and the potential for greenway and trail connections.
- Encourage the co-location of sports complexes and detention basins, allowing for dual recreational use.
- Avoid elements that restrict the function, development or usability of the land, such as underground or overhead utilities, gas/fuel transmission lines, unsuitable topography, contamination, or development restrictions that would limit park use.
- Avoid sites with excessive slopes, swales, drainage courses, creeks, wetlands/biological habitat and similar landscapes, where these conditions would not also accommodate recreational use or add to the aesthetics and enjoyment of the park experience.
- **Frontage and Access:** Site should front an arterial street with at least 200 feet of frontage. A minimum of two major street frontages is desirable.
- Directly connect to sidewalks, bike facilities, and preferably, to the planned trail system. The site should also be served by transit, with a transit stop incorporated.
- **Recreational Capacity:** Approximately 90% of the site should be relatively level, developable and usable.
- **Required Amenities:** Sports complexes include the following amenities:
- Site identification signage consistent with City standards.
- Appropriate site furnishings (benches, bike racks, drinking fountains, trash receptacles, etc.) for the intended size, scale and use of the park.
- At least one family picnic area with a minimum of 10 tables, barbecues and individual shade structures for at least half of all tables.
- Dedicated lighted, regulation



Legacy Fields will continue to be developed, providing more sports facilities for our growing community.

sports fields for league practice and games for youth/adult softball, baseball, football, and/or soccer.

- Permanent restrooms; the number of restrooms should be determined based on park capacity and demand.
- Accessible pathway system connecting park elements
- General landscape improvements in open space areas, including ground covers, plantings and trees for shade and windbreaks.
- On-site parking to adequately meet the demand generated by park elements. 50 parking spaces per field should be a minimum guideline. Accessible parking must make up the ratio of total on-street and on-site parking spaces required by ADA standards.
- Lockable trash enclosure with integrated shade cover. The enclosure shall be architecturally compatible with other park elements. Dumpster needs to be provided as well. Location shall be in an area away from main park attractions and be coordinated with Public Works Department.
- **Additional Amenities to Consider:** Sports complexes may include additional amenities, including the following. Exceptions may be made at the City's discretion.
- Large group picnic area, with shade shelter, tables, barbecues, and appropriate amenities to serve a minimum of 100 people.
- Small or mid-sized picnic shelter and barbecues (serving 25-30 people or 40-60 people).
- Destination playground.
- Flat, open, contiguous turf area for unstructured play
- Sports courts (lighted or unlighted), such as basketball, tennis, volleyball, handball, pickleball, futsal, bocce, shuffleboard, horseshoes, etc.
- Indoor recreation center, gymnasium, or community center.
- Additional recreation amenities such as a community garden, disc golf course, running track, skate park, freestyle BMX park, pump track, dog park, roller hockey, climbing wall or spire, par course, or outdoor fitness equipment.
- Soft-surfaced jogging path or nature trail. One-half mile (or longer) is preferable.
- Outdoor amphitheater or hillside seating.
- Interpretive signage.
- Interpretive trail, environmental education facility, nature kiosk.
- Public art or memorial.
- Storage or maintenance buildings and yard, sized and amenitized appropriately for site needs. If visible, these should be



Front Street Plaza creates a downtown gathering place for festivals and events.



Tracy Nature Park site. This park will create a special kind of experience in Tracy.

architecturally compatible with other park elements. Any exterior work areas should be screened from view.

- **Natural Areas and Open Space:** Sports complexes may typically contain natural areas for passive recreation, resource/habitat protection, windbreaks, and site aesthetics/character on 10% of the site.

Special Use Parks

Special use parks are designed around a specialized facility or site use, such as an aquatic center or indoor recreation /community center, or to create a unique experience, such as a nature park or a downtown plaza. The ideal size, street frontage, recreational capacity, and proportion of recreational and natural areas of a special-use community park/facility will vary depending on the purpose and function of the site. Special use parks may incorporate a variety of specific active and passive use opportunities.

Special use parks are recognized by the City of Tracy as a type of community park, and treated as such for the purposes of parks planning and development.

- **Park Size:** Less than 1 acre to 100+ acres
- **Location and Access Characteristics:** Special use parks vary widely. Each park or plaza may have its own distinct characteristics.
- **Typical Amenities:** Downtown parks and gathering spaces may include hardscape areas, water features, amphitheaters, shade structures, water features, ample seating, and public art, among other features.
- Elsewhere, special use parks may be designed around one non-traditional program, with features to support that program, such as a standalone off-leash dog area or a park designed to provide an experience of the natural environment. Special use parks may include parking, including accessible parking as required to meet ADA standards, and should include bike racks and good bike access.

Mini Parks

Mini parks are small-sized parks that provide basic recreation amenities for nearby residents in a specific neighborhood or subdivision. The PRTMP does not endorse the creation of additional mini parks. As existing mini parks are updated, it is important to ensure that they create locally-desired amenities and achieve the goals for all parks in this master plan, including comfort, inclusivity, maintenance, and sustainability.

New mini parks may be provided as part of new development, but will not earn credit toward park acreage requirements and shall be the sole responsibility of an HOA to manage and maintain.

- **Park Size:** Less than 2 acres
- **Location Characteristics:** They may be located where they create transitions and connections, such as:
- Adjacent to schools, libraries, or other community facilities
- At trailheads, where an extended linear park is not provided
- **Typical Amenities:**
- Site identification signage consistent with City standards.
- Appropriate site furnishings (benches, bike racks, drinking fountains, trash receptacles, picnic tables, etc.)
- Flat, open, contiguous turf area for unstructured play
- Individual covered picnic tables.
- At least one active use amenity, such as a sport court, skate spot, or other compatible active use facility.
- Accessible pathway connecting park elements and creating an appealing walking loop.
- General landscape improvements in open space areas, including ground covers, plantings and trees for shade and windbreaks.
- **Additional Amenities to Consider:**
- Playground equipment or comparable creative play environment for ages 2-5 and ages 6-12,, including climbing apparatus and swings.
- Additional contiguous turf area for unstructured play.
- Additional small or mid-sized picnic shelter and barbecues.
- Additional sport courts or active use facilities.
- Small-scale spray or water-play area.

- Seatwalls or hillside seating.
- Gazebo trellis or arbor.
- Interpretive signage.
- Public art.
- **Amenities to Avoid:**
- Community or regional-scale recreation facilities.
- High-maintenance landscaping improvements.

1B. Park Acreage Level of Service

Tracy currently meets the goal of 4 acres per 1,000 established in the 2013 Parks Master Plan (New Developments). The City shall continue to meet this park acreage standard for new development, under Quimby Act and park development impact fee provisions, while working to diversify the types of park experiences that are created. Park allocation shall be as follows:

- **3 acres per 1,000 residents for new neighborhood parks and linear parks.** Up to half of this amount may be provided in the form of linear parks, at the City's discretion and provided that parks meet size, locational and access characteristics and typical amenities defined in Policy 1A.
- **1 acre per 1,000 residents for new community parks, sports complexes and special use parks.** The amount of land and/or development impact fee in this category may be assigned at the City's discretion. Parks must meet size, locational and access characteristics and typical amenities defined in Policy 1A.
- **Parks that are collocated with schools** or other community facilities must be fully open to the public during regular park hours to be counted as park acreage.
- **Park acreage that is collocated with stormwater detention basins** may be counted if it is designed and programmed for recreational use. This acreage should be counted at a percentage equivalent to the percentage of the year the basin is designed to be available for recreation based on anticipated drainage.
- **Parks that are collocated with trails** must meet park size and locational characteristics requirements.

In addition, the City will continue to pursue other means of creating park land to suit community-wide recreation needs and special uses.

1C. Access to Parks

Today, many Tracy residents do not live within 3/4 mile of a neighborhood park, as recommended by the 2013 Parks Master Plan. This Master Plan Update provides a new

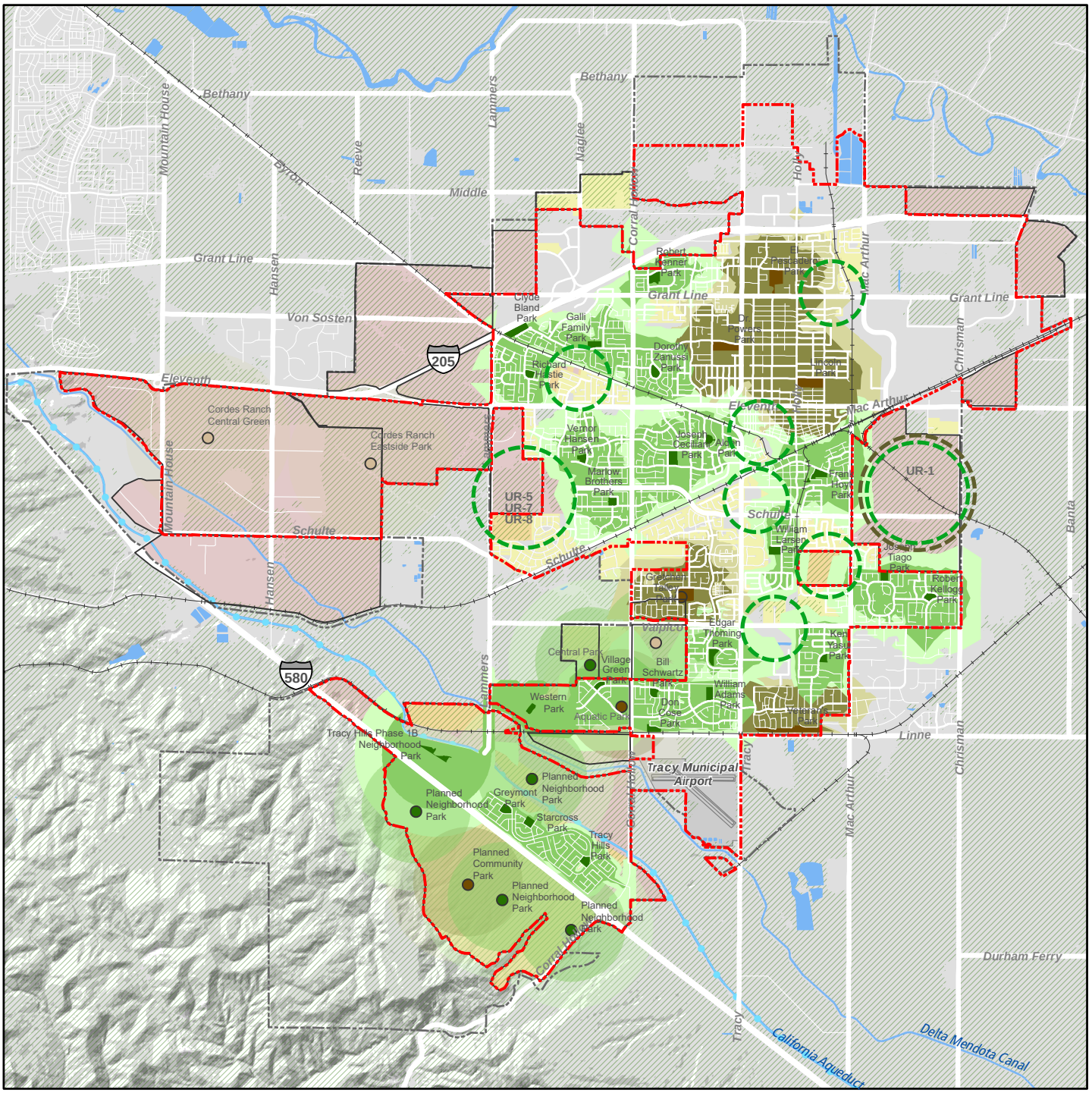
Table 3-1
Tracy Park Acreage Level of Service

PARK TYPE	SITES	AREA (AC)	EXISTING LEVEL OF SERVICE (AC/1,000)[a]	LEVEL OF SERVICE STANDARD	ACRES NEEDED TO MEET STANDARD TODAY[a]	ADDITIONAL ACRES NEEDED TO MEET STANDARD IN 2040[b]	PLANNED PARK ACREAGE	ADDITIONAL ACRES NEEDED TO MEET STANDARD IN 2040 IF PLANNED PARKS ARE DEVELOPED[c]	LOS, 2040
NEIGHBORHOOD PARKS AND LINEAR PARKS	31	119.3	1.33	3.0	150.6	304.7	30.1	274.6	1.06
COMMUNITY PARKS, SPORTS COMPLEXES AND SPECIAL USE PARKS	12	205.2	2.28	1.0	-	-	232.0	-	3.09
MINI PARKS	42	39.8	0.44	0.0	-	-	2.8	-	0.30
TOTAL	85	364.3	4.05	4.0	150.6	304.7	264.9	274.6	4.45

SOURCES: WRT, 2021; CITY OF TRACY, 2021.
NOTES:
A BASED ON 2018 POPULATION OF 89,965
B BASED ON PROJECTED 2040 POPULATION OF 141,341
C BASED ON PROJECTED 2040 POPULATION OF 141,341 AND ASSUMING DEVELOPMENT OF PLANNED PARKS

Figure 3-1

Park Access Gaps and Neighborhood Park Opportunity Areas



- Tracy City Limit
- Sphere of Influence
- Aqueduct
- Rivers/ Canals/ Ponds
- Agriculture / Undeveloped
- Airport
- Future Development Area (Outside Service Areas)
- Residential
- Neighborhood Park
- Service Area: 1/2 Mile
- Service Area: 3/4 Mile
- Planned Neighborhood Park
- Neighborhood/Linear Park Opportunity Area
- Community Park
- Service Area: 1/2 Mile
- Service Area: 3/4 Mile
- Planned Community Park
- Planned Private Park
- Community Park Opportunity Area

UR-1 should include a minimum of 4 neighborhood parks and 1 community park. UR-5, UR-7 and UR-8 must be served by adequate neighborhood parks.

N

0 0.325 0.65 1.3 Miles

approach to park access, recognizing that walkability to parks with a variety of recreational features is the intention. Therefore, the City should seek to provide a neighborhood or community park within a shorter, ½-mile walking distance of all Tracy residents. Figure 3-1 shows ½-mile and ¾-mile "walksheds" around all of Tracy's existing neighborhood and community parks, using City streets, showing which areas of the City are within comfortable walking range. The map also shows ½-mile-radius circles around future parks that are currently in the planning stages, showing generalized park walkability in future development areas.

Areas that appear as gaps on this map should be a focus for potential future neighborhood park opportunities.

In particular, within Urban Reserves 1 and 5, 50% of neighborhood/ linear park development shall be integrated and/or adjacent to the stormwater basins dedicated to that development.

Where existing development precludes the creation of new neighborhood parks, existing mini parks, special use parks, and sports complexes should be prioritized for the addition or improvement of neighborhood-serving recreation amenities.

1D. Park Land Dedication and Park Development Impact Fees

The City of Tracy is in the process of updating its citywide development impact fee. The updated impact fee's park acreage, amenity, design, and cost assumptions will be based on the policies in this Plan.

All new developments must pay park development impact fees. Parks that are located behind gates (e.g. in gated communities) are not reimbursed and do not count toward meeting park requirements as they are not open to use by the entire community. (See also Policy 1H.: Public Access).

The City will provide flexibility to ensure that required parks and amenities are provided while recognizing challenges resulting from changes to the impact fee during buildout of large master planned areas.

The City may also allow for cost recovery by developers who provide parks that meet all City standards and are delivered at below the cost assumptions underlying impact fees.

Park land dedication and development impact fees will cover some but not all of Tracy's park needs in the years to come. Development fees do not pay for renovation of existing parks.

1E. Build in Flexibility

As the City of Tracy seeks to balance a variety of recreational needs and to achieve a diverse system of parks and trails, we will maintain flexibility in how and whether to require land dedication or the payment of in-lieu fees, and the use of those fees or dedicated land, provided the use meets State legal requirements.

This includes the use of dedicated land or impact fees for special use parks, sports complexes, trails outside of linear parks, or public benefit funds, in addition to neighborhood and community parks.

1F. Conformance with City Standards and Guidelines

The design and development of proposed new parks and facilities shall take into account City standards and guidelines and goals for park maintenance, recreation programming, sustainability,

ADA accessibility, connectivity, parking, resource conservation and community development. The City shall involve all affected or interested departments, and applicable stakeholders such as the Parks and Community Services Commission, in the review and approval of park master plans to ensure that parks effectively address these elements.

1G. Concurrent Development

Parks that are created as part of planned development must be designed and built in tandem with the development they are meant to serve. The City will not permit parks to be left to the end of development projects, putting greater strain on existing facilities and failing to serve new residents. As an approval condition of development, a park must be completed and open for public use when 50% of the homes in a new development are occupied, or sooner. If a development is built in phases, the park must be completed and open for public use when 50% of the homes are occupied in that phase.

1H. Public Access

Parks that are created to satisfy City requirements for new park land as part of development must be fully open to the general public, with reasonable limitations on hours of operation. Parks will be operated by the City of Tracy unless special circumstances support a different operational model.

1I. Specific Plans and the Citywide Parks Master Plan

Specific Plans can be a tool for developers to enhance a neighborhood's "sense of place" making it more vibrant and livable. These planning documents shall not be used to circumvent minimum standards, however they can be used to enhance parks, recreation and trail planning subject to approval by the City.



Clyde Bland Park. Tracy looks to create more neighborhood parks in the years ahead.





Robert Kellogg Park

GOAL 2
WELL-MAINTAINED PARKS

The City of Tracy will remain committed to maintaining our existing parks at a high level. This includes design that considers maintainability, achieving efficiency in operations, and providing equitable and reliable funding for both maintenance and capital replacement of amenities and infrastructure.

POLICIES:

2A. Maintainable Design, Planting and Amenities

2B. Efficient Operations

2C. Adequate Funding for Park Improvements and Maintenance

THE PARKS MAINTENANCE FUNDING PICTURE

Parks maintenance for the majority of our parks (49, as of 2020) comes from the Landscape Maintenance District (LMD) or Community Finance District (CFD). These districts were set up as part of development, and have varying funding levels depending on the fees charged to local residents.

Most of our neighborhood parks and all of our community parks and sports complexes are funded through the General Fund.

Measure V, passed by Tracy voters in 2016, raises about $10 miillion each year to fund City services - which could potentially include operations and maintenance of parks.

Tracy is comprehensively studying its financing structure.

GOAL 2: WELL-MAINTAINED PARKS

POLICIES

2A. Maintainable Design, Planting and Amenities

Well-maintained parks start with design that considers ease of maintenance. Maintenance can be eased by access for maintenance vehicles; use of durable materials; plant selection and grouping; and quality and efficient irrigation systems, among other ways. The City will review all park plans and designs to assess requirements for long-term maintenance, sustainability and stewardship. Design modifications will be proposed where needed.

2B. Efficient Operations

The City will continue to do high-quality work maintaining Tracy's parks, sports complexes and trails, and continue to pursue strategies for greater efficiency in its practices, staffing, systems, materials and equipment.

Specific actions to improve maintenance and lifecycle replacement practices are provided in Chapter 6: Implementation. See pages 206-207.

2C. Adequate Funding for Park Improvements and Maintenance

Tracy's General Fund supports maintenance and improvements at most of the City's community and neighborhood parks and sports complexes. The Landscape Maintenance Districts and Community Facilities District that support over half of Tracy's parks do so at varying funding levels, resulting in uneven capacity across the system.

Tracy is comprehensively studying its LMD financing structure, and will follow this with a study of park financing from General Fund and Community Facilities District.

A high-level analysis of expected capital improvement and lifecycle maintenance costs associated with each park type is provided in Chapter 6: Implementation.

GENERAL FUND PARKS



Veterans Park



Edgar Thoming Park



William Larsen Park



Galli Family Park

SPECIAL DISTRICT PARKS



Tom Slayter Park



Daniel Busch Park



Bill Schwartz Park



Village Green Park





Lincoln Park

GOAL 3
SAFE PARKS

Tracy residents must feel safe in our parks. The City will continue to embed safety into park design, programming and operations.

POLICIES:

3A. Design For Safety

3B. Park Activation

3C. Lighting for Safety

3D. Security Cameras

3E. Park Monitoring

WHERE DOES SAFETY COME FROM?

Park safety is a product of good planning, design, day-to-day use, and management.

Natural Surveillance. Parks should have good sight lines, and "eyes on the park" from adjacent streets, homes and businesses. Good lighting is important too.

Defensible Space. Entrances should be clear - and so should edges where access is not permitted.

Park Features. Park features should be in demand, attracting people to use the park, which brings us to...

Day-to-Day Use. **People using parks is the best guarantee for safe parks.** If there are reasons for people to be there, people will be safe. This might mean park programming: movies in the park, recreation classes, food festivals...

Park maintenance, security patrols and security cameras all help complete the safety picture.

GOAL 3: SAFE PARKS

POLICIES

3A. Design for Safety

Safety will be built into the design of new parks and as existing parks are rehabilitated. Safe parks can be achieved by creating natural surveillance and ensuring defensible space. This means maintaining good sight lines from public streets and buildings and throughout parks and creating clear entrances and clear boundaries. Parks will also be designed to reduce hazards from vehicles by establishing safe crosswalks and safe bike access, placing active use and play areas away from busy streets, and using planting and fencing as a buffer.

The principles and practices of Crime Prevention Through Environmental Design (CPTED) will be considered in the design and maintenance of future parks and new amenities.

3B. Park Activation

People using parks is the greatest guarantee for safety. Parks that are equitable, inclusive, attractive, comfortable, and interesting, with recreation features people want to use will be safe parks. More directly, the Department will activate parks by providing recreational and community programming.

3C. Lighting for Safety

The City will assess lighting quality throughout the park system with a focus on providing high-quality lighting along paths and eliminating areas where glare or excessive darkness create safety concerns.

All new parks will have a main walkway or circulation path that is lighted.

3D. Security Cameras

The City will study the efficacy and sustainability of placing security cameras in or adjacent to parks, and continue to implement the Park Camera Program.

3E. Park Restroom Safety

The City will ensure that park restrooms have regular maintenance and should be self-locking whenever possible to reduce unauthorized use after hours.

3F. Park Monitoring

The Parks and Recreation Department and its public safety partners will work together to ensure that all Tracy residents feel welcome in parks and that safety concerns are addressed effectively.











Lincoln Park

GOAL 4

EQUITABLE & INCLUSIVE PARKS

The Parks and Recreation Department is committed to creating and promoting inclusion across all the public spaces, facilities and programs we manage. We aim to ensure that everyone has access to the benefits of quality parks and recreation, including persons of color, persons with cognitive and physical disabilities, LGBTQ+ individuals, and people who have immigrated from other countries.

POLICIES:

4A. Equitable Distribution of Parks and Facilities

4B. Inclusive Places

4C. Accessibility and Universal Design

GOAL 4: EQUITABLE & INCLUSIVE PARKS

POLICIES

4A. Equitable Distribution of Parks and Facilities

The City will strive for all residents to be within a one-half mile walk of a neighborhood or community park. Where this level of access is not possible, the City will prioritize improvements to other recreation facilities (mini parks, special use parks, or sports complexes) to provide enhanced neighborhood amenities. The City will also prioritize park investments in neighborhoods with a larger share of persons experiencing poverty and communities of color.

See also Policy 2c: Adequate funding for park improvements and maintenance.

4B. Inclusive Places

Tracy will work to make its parks and facilities feel inclusive for all members of the community. This may involve:

- Cultural representation through signage, artwork and murals, with involvement from the Tracy Arts Commission;
- Play equipment that is usable by people with cognitive and physical disabilities;
- Gender-neutral restrooms and changing rooms;
- Programming that meets the needs of diverse users;
- Other elements that remove barriers that may deprive some people of the opportunity to enjoy the benefits of parks and recreation.

Funding for care and replacement/repair of these items must be identified.

The City will strive to create parks that enable diverse users to interact and recreate together.

4C. Accessibility and Universal Design

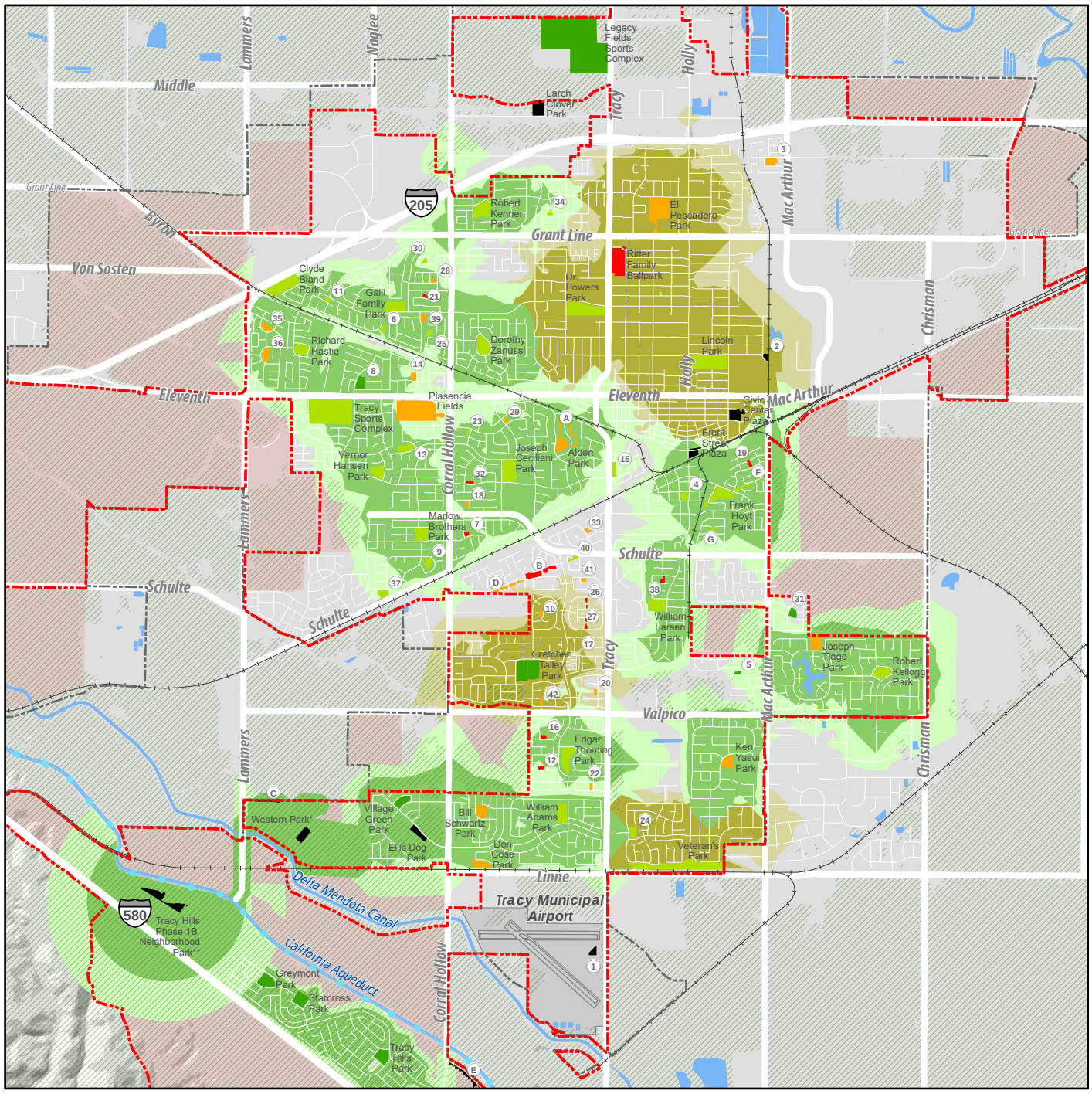
Tracy's parks and facilities will be improved as needed to ensure that people with disabilities are able to arrive on the site, approach facilities and amenities, and enter as freely as everyone else. Improvements will address issues such as paving, ramps, doorways, handrails, and signage.

The Americans with Disabilities Act (ADA) standards and/or published guidelines and the California Code of Regulations are strongly adhered to by the City of Tracy where such may apply in the built environment. As such, all City structures, elements and facilities constructed where programs, services and activities are provided by the City, shall strictly comply with such standards and be constructed as accessible for all persons with disabilities to the greatest extent possible. This would include accessible parking as a Title II program requirement and obligation where such would be a reasonable expectation. Additionally, accessibility standards shall be included in any newly constructed or remodeled employee-only areas.

More broadly, parks and amenities will be designed so that they can be accessed, understood and used to the greatest extent possible by all people regardless of their age, background or ability. Accessibility should be integrated into park design and function.

Figure 3-2

Access to Neighborhood and Community Parks and Park Condition (August 1, 2019)



- Tracy City Limit
- Sphere of Influence
- Aqueduct
- Rivers/ Canals/ Ponds
- Agriculture / Undeveloped
- Airport
- Future Development Area
- Neighborhood Park Service Area: 1/2 Mile
- Neighborhood Park Service Area: 3/4 Mile
- Community Park Service Area: 1/2 Mile
- Community Park Service Area: 3/4 Mile

August 1, 2019 Condition Rating

- Excellent
- Poor
- Unknown / Unclassified Condition

(#) Existing Mini Parks

1. American Legion Park
2. Fine Family Park
3. A.R. Glover Park
4. McDonald Park
5. Clyde Abbott Park
6. Dr. Ralph Allen Park
7. Bailor/Hennan Park
8. Daniel Busch Park
9. J. Kingsley Chadeayne Park
10. Evelyn Costa Park
11. Eagan Family Park
12. Albert Emhoff Park
13. John Erb Park
14. Fabian Family Park
15. Jack Fisher Park
16. Barbara Fitzpatrick Park
17. Golden Spike Park
18. Harvest Park
19. Lester Huck Park
20. Fred Icardi Park
21. George Kelly Park
22. John Kimball Park
23. Kit Fox Park
24. William Lowes Park
25. McCray Family Park
26. Mount Diablo Park
27. Mount Oso Park
28. New Harmon Park
29. Robert Patzer Park
30. Pombo Family Park
31. Jim Raymond Park
32. Naomi Rippin Park
33. Sister Cities Park
34. Tom Slayter Park
35. Souza Family Park North
36. Souza Family Park South
37. Joan Sparks Park
38. Larry Sullivan Park
39. Dorlane Thrasher Park
40. Tracy Press Park
41. Valley Oak Park
42. Westside Pioneer Park

(A) Existing Linear Parks

A. Alden Park Greenway
B. Henry Barboza Park
C. Orchard Park*
D. Dorothy Evans Park
E. Hillview Linear Park**
F. LMD Zone 17 Greenway
G. Florence Stevens Greenway

*Under construction at the time of Master Plan adoption
**Based on Vesting Tentative Maps already approved at the time of Master Plan adoption

N

0 0.225 0.45 0.9 Miles





Hoyt Park

GOAL 5

COMFORTABLE & ATTRACTIVE PARKS

Tracy's parks will feature an expanded tree canopy, shaded amenities, and restrooms located in close proximity to play areas when installed. Lighting will extend parks' usability to winter evenings and nights year-round.

POLICIES:

5A. Expanded Tree Canopy

5B. Shaded Amenities

5C. Water Features

5D. Restrooms

5E. Lighting for Activation

GOAL 5: COMFORTABLE & ATTRACTIVE PARKS

POLICIES

5A. Expanded Tree Canopy

Trees provide shade, seasonal color, natural character, and habitat. They reduce the urban heat island effect and create buffers from noise. The City will continue to develop the tree canopy in parks, guided by the Urban Forestry Management Plan.

5B. Shaded Amenities

Play areas, picnic areas, walking loops and spectator seating areas need shade to be usable throughout the year in Tracy's hot summer climate. Providing shade, particularly in children's play areas, reduces health concerns related to extended sun exposure. New parks and park improvements should increase shade in these areas by adding shade structures and/or trees. In particular, play areas should be substantially shaded from Day 1, with shading integrated into play equipment structures where possible.

5C. Water Features

The City will seek ways to add water to the experience of parks, with water features, splash pads, misters, and access to and along canals where resources and regulations allow.

Water features are considered high-water-use elements when calculating a landscape's water budget following the City's Model Water Efficient Landscaping Ordinance (MWELO). The City requires that splash pads be designed to recirculate water, and will be mindful of the need to conserve water, especially during drought years.

5D. Restrooms

Restrooms should be included in all community parks and at sports complexes, and should be provided in neighborhood parks with active recreational amenities that promote park users staying longer than 1 hour and placed in close proximity to playgrounds. The City will ensure that park restrooms have regular maintenance and should be self-locking whenever possible to reduce unauthorized use after hours.

See also Policy 3E. Park Restroom Safety.

5E. Lighting for Activation

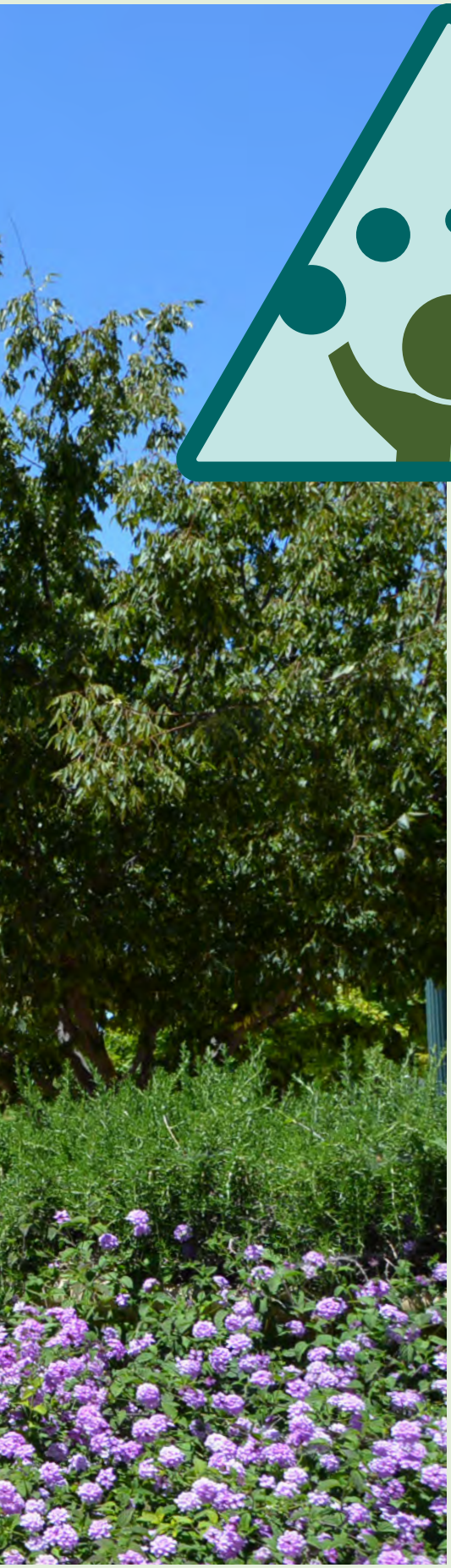
Lighting is a key feature both for safety and to make parks usable during the shorter days of late fall through early spring. Pedestrian-scaled lighting should be provided along all walking paths, street frontages, and amenity areas in parks. Lighting should be strategically added to recreation facilities to create more opportunities for active recreation (e.g. basketball, tennis, track, and field sports) distributed around the city.

See also Policy 3C: Lighting for Safety.

Shade is essential to making parks comfortable and attractive in Tracy. Veterans Park (facing page).







Front Street Plaza

GOAL 6

INTERESTING & DIVERSE PARKS

Tracy's parks will provide recreational opportunities for everyone. They will support a diversity of experiences, have multi-generational appeal, and be successful gathering places for the whole community.

POLICIES:

6A. Balance of Programmed and Unprogrammed Spaces

6B. Non-Traditional Elements

6C. Downtown Plazas and Community Gathering Spaces

6D. Nature Park and Preserved Open Spaces

6E. Gardens

GOAL 6: INTERESTING & DIVERSE PARKS

POLICIES

6A. Balance of Programmed and Unprogrammed Spaces

Tracy's parks should support organized sports as well as plenty of places for informal active recreation, areas for picnicking and walking, as well as flexible, passive use areas conducive to a range of experiences, from gathering with friends, to playing pick-up soccer, to simply taking a walk or being outdoors.

6B. Non-Traditional Elements

While neighborhood and community parks may have a set of "typical" amenities, the City will seek to create a distinct experience at each place, drawing on the character of the site, the desires of the local community, and evolving ideas in park design and programming. Examples may include:

- Recreation facilities for sports like badminton or cricket
- Adventure, educational, and sensory play areas and equipment
- Outdoor classrooms

6C. Downtown Plazas and Community Gathering Spaces

Community members want more gathering places where events, concerts and performances can take place. The City should optimize Front Street Plaza and the Civic Center for community gatherings, and ensure that attractive and diverse new public spaces are created as part of future transit-oriented development in the "Bowtie." These spaces may feature a greater proportion of hardscaped areas, and a strong connection to sidewalks, linear parkways, outdoor seating, restaurants and cafes, and performance venues.

6D. Nature Park and Preserved Open Spaces

Tracy Nature Park, and open spaces preserved in Tracy Hills and Cordes Ranch, will create new opportunities to experience open, undeveloped landscape and natural processes—experiences that are increasingly sought as Tracy grows. These areas should include trails, interpretive signage, and features to promote environmental education and passive enjoyment.

6E.Gardens

The City's park system should include demonstration gardens that show how native plants and pollinators can be used to reduce water use and support environmental health. The City will explore partnerships to support gardens, environmental and horticultural education.

6F. Public Art

Public art can add beauty, wonder and meaning to our everyday environment. If the City establishes a requirement or in-lieu fee for public art, developers should incorporate public art into future parks, in coordination with the City. Fees should also be used to bring art into existing public spaces, especially downtown and at community parks.

Facing page: Grand Center for the Performing Arts


GRAND
WILLY WONKA
AND THE CHOCOLATE FACTORY
4/5-6 7PM AND 4/6-7 2PM
5 MIN LOADING ZONE
30 MIN PARKING





Tracy Nature Park Site

GOAL 7

SUSTAINABLE PARKS

Parks can have great ecological value by preserving natural vegetation, providing suitable habitat, reducing water use, and cooling the air. By enabling more people to walk and bike, our trail system will help us reduce greenhouse gas emissions. The City will preserve and enhance natural environments in future parks, and employ ecological strategies in the design and maintenance of existing parks.

POLICIES:

7A. Create Habitat Value

7B. Support Water Quality and Groundwater Recharge

7C. Water and Energy Conservation

7D. Support Walking and Biking

GOAL 7: SUSTAINABLE PARKS

POLICIES

7A. Create Habitat Value

Tracy's park system should be designed and managed to create habitat value. Opportunities include:

- Incorporating and protecting existing natural elements such as hillsides and drainages;
- Creating relationships between mature trees and open meadows that are conducive to nesting and foraging birds;
- Incorporating native plant species;
- Creating pollinator gardens;
- Creating green corridors that support wildlife movement

7B. Support Water Quality and Groundwater Recharge

Parks provide areas where water can infiltrate and recharge groundwater basins. Parks may conserve natural drainage conditions, or may manage stormwater to slow infiltration and filter out contaminants. Parks provide opportunities to link the City's larger storm drainage and recreation systems, creating dual purpose environments. The City will seek to optimize this process by continuing the implementation of Integrated Pest Management (IPM) practices and using stormwater best management practices.

7C. Water and Energy Conservation

The design, development, and construction of park and recreation facilities will be based on sustainable guidelines that support resource, water and energy conservation practices and help to reduce greenhouse gas emissions. They may include:

- Grouping plantings based on water need (hydrozones);
- Substituting or replacing turf with low-water-use plants;
- Achieving LEED silver or higher rating for new recreation buildings;
- Ensuring that any new water features are on a recirculating system and meet state requirements;
- Limiting the use of water features during drought periods;
- Including energy efficiency upgrades in building rehabilitation projects;
- Improving the fuel economy of the vehicle fleet.

All new landscape projects will comply with the City's Water Ordinance and requirements of AB 1881.

7D. Support Walking and Biking

Tracy will emphasize accessibility of parks and trails for people on foot and using non-motorized transportation, by locating parks adjacent to bus stops, trails and bikeways; emphasizing park entrances from sidewalks; providing bike parking, maintenance stations, and (potentially) bike share docks; and incorporating biking into recreational programming. In this way, the parks system can help shift travel to non-automobile modes and help to reduce greenhouse gas emissions.

Facing page: Tracy's park system will be linked with trails and greenways, and feature amenities for walking and biking.



PARK DESIGN GUIDELINES



Design guidelines and standards are used to ensure that parks and their individual elements support the goals of this Master Plan.

In the Park Design Guidelines included here, general planning and development guidelines for all parks are presented first, followed by guidelines for each park type.

For more detail, refer to the City's Parks and Streetscape Standards.

Identity

P-1 Establish and follow a baseline vocabulary for attractive, well-designed, commonly placed site elements for standard, system-wide identity. Baseline elements include signage and standard furnishings.

P-2 Working within that overall system identity, develop distinct themes for each park site to establish a unique character. Themes may be expressed through the use of colors, materials, custom furnishings, structures, and plant selections.

P-3 Items of historic or cultural significance, public art and historic and environmental interpretive elements should be considered for inclusion in all park sites to contribute to individual character.

Entry and Perimeter Treatment

P-4 Direct connections to the street and/or sidewalk should be visible and part of the park entry sequence. Where possible, locate entry near bus stop or crosswalk.

P-5 Provide a main entry that gives a sense of arrival and encourages park use, including accent planting and attractive signage consistent with City standards. Where feasible, lighting should promote the park name and presence during evening hours.

P-6 Ensure that the exterior appearance of parks is attractive from adjacent public areas. Signage, openness, fence materials if applicable, and planting should be carefully designed to enhance park appeal.

P-7 Use universal design principles to facilitate access and movement within parks for people of all ages and abilities:

- Elements within the park should be connected with an accessible hard-surfaced trail where possible.
- Primary pathways should be able to accommodate maintenance and emergency vehicles. Secondary pathways need to be wide enough to minimize user conflicts. See Park & Streetscape Standard Plans for detailed requirements.

P-8 Place trash enclosures, backflow devices, and aboveground utilities away

from the entry or carefully conceal in other park features. When feasible, include a separate entry for maintenance vehicles away from the main entry and away from active play areas.

P-9 Include secure bicycle parking at all parks.

Site Organization and Relationships

P-10 Provide a diversity of site amenities that attract different types of recreation activity at various times of day. Provide program elements that encourage site activation among different age groups.

P-11 Locate high-use amenities such as playground equipment and basketball courts in areas that are visible from adjoining streets to promote safety and encourage use, but far enough away to ensure user safety.

P-12 Provide amenities including sports, play, and picnicking, throughout a site so "dead" zones do not welcome anti-social behavior.

P-13 Create highly visible spaces by designing park elements, including pathways, play areas, picnic areas and benches, to allow for natural surveillance among users.

- Design pathways with unobstructed sight lines, and locate seating and play elements in areas with unobstructed views.
- Design buildings and facilities so that entries, windows, staffed areas and programmed activity overlooks populated public spaces.

P-14 Locate permanent restrooms in highly utilized and visible areas to reduce vandalism risks and deter undesirable behavior.

P-15 Position play spaces a minimum of 50' from street or parking areas, when park configuration permits. Enclose play areas that are closer than 25' to arterial or collector streets and parking areas with 3' high non-climbable fence. Safety fencing will be required if playground is within 50 feet of a street. Park design shall also discourage direct path of travel from play area to street, no matter the distance.

P-16 Design sports fields and sports courts with a north-south orientation, yet allow for the re-orientation of fields in order to disperse wear and tear. Avoid sports field lighting in neighborhood parks.

P-17 Install drinking fountains near play areas and sports fields. Add bottle fillers, misters, and dog basins to drinking fountains in order to expand usefulness.

P-18 Provide seating elements that are located to take advantage of hospitable conditions including shade, views, and sound.

P-19 Employ mitigation measures for sound, air quality, views, and safety at parks located near highways and major roadways. Measures may include dense tree canopy, dense vegetation buffers, water features, or art elements with screening features.

P-20 Through placement of recreation features and use of mitigation techniques, design parks in a way that minimizes impacts such as noise and lighting on neighboring properties.

Features and Amenities

P-21 Provide both active and passive recreation opportunities. Passive recreation opportunities may include seating, picnicking, and nature viewing. Active recreation opportunities may include play areas, jogging/walking loops, aquatic and sport facilities.

P-22 Design parks for multi-generational use, with features that appeal to people of different ages placed in proximity to each other.

P-23 Design play areas to support activities for children of varied ages including tots, young children, and teenagers.

P-24 Create unique play experiences by including a variety of visual and physical elements that incorporate sight, sound and texture exploration. These features may provide increased value to special-needs children.

P-25 Provide creative play opportunities that incorporate natural features and non-traditional play environments.

P-26 Use local and recycled materials in buildings and park furnishings where appropriate.

P-27 Achieve LEED silver or higher rating for construction in the development of new recreation facilities (preferred, not required).

P-28 Shade seating wherever possible.

P-29 Select all paving, site furnishing, and landscape materials based on durability as well as aesthetic value. Integrate park equipment that is specifically designed to withstand vandalism, graffiti, and fire, as noted on a City-approved list of site furnishings.

P-30 Where feasible, incorporate existing unique or significant natural, cultural, historical, or agricultural elements in proposed parks (e.g. a water tower, barn, or rock outcroppings).

P-31 Ensure that proposed park design and construction, including park amenities and facilities, are consistent with Park and Streetscape Standard Plans.

P-32 Park amenities such as playgrounds, picnic tables, drinking fountains and benches shall be accessible to all users and abilities and comply with current state and national design standards that meet or exceed the requirements of



Create unique play experiences and provide creative play opportunities.

the Americans with Disabilities Act (ADA) Standards for Accessible Design and the California Building Code.

P-33 Safety surfacing beneath swings and playground equipment shall meet safety and ADA requirements, without a drop-off from the surrounding surface. Refer to the US Consumer Product Safety Commission (CPSC) and/or American Society for Testing and Materials (ASTM) for playground standards.

Lighting and Fencing

P-34 Use lighting to promote public safety and security, following the principles of Crime Prevention through Environmental Design (CPTED).

P-35 Where appropriate, provide lighting to extend the use of outdoor facilities at night, such as sports fields, skate parks, basketball courts and children's play areas.

P-36 Design lighting systems and select fixtures to minimize light pollution/spillage.

P-37 Require energy-efficient technology when replacing existing or installing new technologies, including light elements. Use "smart" technology when possible, i.e. lighting systems that adjust automatically depending upon user patterns in buildings and parks.

P-38 Limit fence and gate use to areas where such elements are necessary (such as select entry points and play areas to protect young children). Where fences and gates are used, use the least sight-limiting fence and gate heights possible, and the least sight-limiting fence and gate materials possible.

Signage

P-39 Provide standard entry signage that identifies the park name and promotes a positive and consistent identity for Tracy's park system. New parks created through a specific plan have the option of creating a unique park monument.

P-40 Place a standard, legally confirmed set of rules in a visible and secondary location that does not negatively impact the welcoming nature of the park entry.

P-41 Establish a standardized wayfinding system to clearly identify amenities and facilities within the park as well as nearby civic, historic, cultural or ecological landmarks.

P-42 Provide other park signage that is consistently applied across the system and is attractive, simple, and adaptive to many uses. Consider strategies to eliminate the need for a standalone sign altogether by employing better design or embedding into another object.

P-43 Use established graphic communication components, including park agency and site logos, colors, fonts, etc., in promotional material related to park events and programming.

Landscape

P-44 Use landscape as an element of Crime Prevention through Environmental Design (CPTED), including:

- Allowing unobstructed views of surrounding areas and promoting public safety and security.
- Following a planting strategy to avoid the need to maintain plants to size smaller than their natural habit, i.e. avoid plants that will limit clear sightlines into the park.

P-45 Increase plantings of trees with large canopies to provide more shade and reduce urban heat island effect.

P-46 Implement a water efficiency program in compliance with AB 1881, the Water Conservation in Landscaping Act, and all other water efficiency legislation in effect at the time of design such as:

- Develop water-efficient irrigation systems linked to a centralized, irrigation control system.
- Explore options for on-site water harvesting and rainwater capture
- Provide bubblers to trees for the establishment period and beyond as appropriate

P-47 Employ Low Impact Design (LID) practices to increase opportunities for stormwater and groundwater recharge by

utilizing:

- Bioretention areas, to provide soil- and plant-based filtration that removes pollutants
- Permeable pavers, to allow rainwater to infiltrate on site
- Soil amendments, including the addition of compost and mulch, topsoil, lime and gypsum to help offset erosion and make soil more effective for stormwater management
- Green roofs, where feasible, which help mitigate negative effects of urbanization on water quality by filtering, absorbing, or detaining rainfall

P-48 Integrate sustainable plant materials in landscaping, including:

- Minimize turf areas that are not designed to support active or passive recreation use.
- Use lawn/turf substitutes in all park areas not required for recreation. These include grasses and ground cover plants that require less water, fertilizers, and maintenance (mowing) than traditional turf.
- Use drought tolerant, low-maintenance plants for 95% of all on-site plant material (excluding turf/lawn).
- Provide mulch in plant beds and tree rings to help conserve water and suppress weeds, preferably recycled from the City's Urban Forestry program.
- Establish or follow construction guidelines for the preparation of site soil that is suitable for healthy plant growth including depth of planting soil, soil amendment, and compaction limitations, and perform soil testing to determine the necessary amendments and nutrients needed.
- Establish or follow guidelines for suitable trees and plant materials to be planted in parks, and consult the City Arborist when needed.

P-49 Preserve and create habitat and natural resources within parks.

- Design "no-mow" zones within parks in appropriate places.
- Protect existing habitat for native species where appropriate.
- Employ plants with habitat value for pollinator species
- Consider interpretive value of plantings as part of public educational program

P-50 Reduce and/or eliminate chemical use in landscape areas when possible. This may include:

- Following the City's established Integrated Pest Management (IPM) program to target pests and reduce chemical inputs where possible.
- Using organic fertilizer with humic acid and mycorrhizea fungi when possible.

Dual-Use Drainage Basins

P-51 Encourage the co-location of parks and detention basins, bioswales, or other approaches to stormwater management, allowing for dual recreational use wherever practical.

P-52 Only portions of detention basins that are designed and programmed for recreational use are eligible for park acreage credit, at a percentage equivalent to the percent of the year the basin is designed to be usable. ***See also Policy 1B: Park Acreage Level of Service.***

P-53 In order for storm drainage basins to successfully serve as dual-use park space, they must have typical recreation amenities. These amenities may include sports fields, play areas, picnic areas, nature viewing areas, shade structures, and enhanced landscape (including trees with large canopies that provide shade).

P-54 Playground equipment and related equipment shall not be placed in any area that fills with water.

P-55 Maintain topographic design that allow basins to operate functionally for storm drainage. Use this topography as an opportunity for park design. Capitalize on site topography

by, for example, designing for views from the basin edge; play areas that use the slope as a play element; and seating opportunities on slopes facing recreation activities below.

P-56 Provide clear signage and a welcoming entry and perimeter design that communicate the status of the site as a park.

P-57 Ensure universal access to recreational features in all areas of the basin site without compromising the basin's flood control use.

P-58 Minimize fencing, allowing landscape elements to act as buffers where needed for safety and access control.





A shallow bowl can function as a playfield in summer and a detention pond in winter, allowing for the slow infiltration of stormwater. An outlet keeps the basin from flooding in large storms (Bruno Canziani Park, Livermore.)

Wireless Communication Facilities

P-59 Wireless communication facilities shall be thoughtfully and strategically integrated into the park site. The facility, and required maintenance access, cannot negatively affect the current and/or future programming areas within the park without the approval of the City.

P-60 The developer shall make every attempt to mitigate the visual impacts created on the park by the facility. This may include, but is not limited to the construction or installation of walls, screens, plant material, tower facades (ie. faux trees) or other design features that will help mitigate the visual impacts of the facility. All design decisions related to aesthetics as well as other elements of the facility design such as tower height, lighting requirements and maintenance of equipment are subject to approval by the City.

P-61 Any impacts to the park either physical or visual shall be mitigated to the satisfaction of the City. Enhancements and/or improvements to the existing park site and its amenities may be required at the determination of the City. This may include improvements such as in-kind replacement of existing landscaping and/or amenities impacted by the project.

CHAPTER 04

RECREATION





From the youngest residents to the oldest, Tracy strives to provide a wide array of sports programs and fitness activities to keep the community active, healthy, and well. This chapter describes how the recreation program offerings are carefully monitored, evaluated, and refined, and how new programs are introduced to keep Tracy residents interested, inspired, and moving.

IN THIS CHAPTER:

- Recreation for a Diverse Community
- Full Range of Recreation Facilities
- Programs that Fit the Community

RECREATION FOR A DIVERSE COMMUNITY

STRIKING A BALANCE

It is no surprise that residents of Tracy like to keep moving. Feedback gathered during the planning process indicates a high demand for sports and fitness activities from traditional team-oriented sports such as basketball and soccer to individual activities such as fitness walking and lifting weights, as well interest in some new activities. Just as important, there is a desire for these spaces to be available not just for organized sports but for pick-up games and casual use.

The Master Plan Update used a data-driven approach not only to understand current offerings and potential future demand but to analyze how programs are monitored, evaluated, refined and weighed with regard to available resources—both physical and financial.

PROVIDING EQUITABLE ACCESS

The Plan Update process involved mapping existing recreation resources and exploring how they serve the community. The analysis identified gaps and pointed to strategies to fill in those gaps.

The first Recreation goal is focused on meeting the community's recreation needs equitably across the city as well as across the full spectrum of ages and levels of desired activity.

TAILORING PROGRAMS TO FIT TRACY

The second major Recreation goal is focused on tailoring programs and activities to the community's aspirations and needs. This entails classifying programs and services and taking into account the full cost involved to offer and host programs.

Facing page: Downtown Tracy Block Party







Joe Wilson Pool

GOAL 8

FULL RANGE OF RECREATION FACILITIES

Tracy's profile indicates a high demand for sports and fitness activities across the board. The City will deliver new facilities for aquatics, indoor recreation, and sports, while broadening our recreation amenities to keep pace with changing preferences and new trends. Recreation facilities will also be updated to provide full accessibility.

POLICIES:

- ***8A. Recreation Facility Level of Services***
- ***8B. Diverse Recreation Needs***
- ***8C. Equitable Access***
- ***8D. Aquatics Complex***
- ***8E. Multi-Generational Recreation Center***
- ***8F. Legacy Fields***

GOAL 8: FULL RANGE OF RECREATION FACILITIES

POLICIES

8A. Recreation Facility Level of Service

The City will seek to meet population-based level of service standards for a range of recreation facilities as shown in Table 4-1. These standards are informed by the standards set in the 2013 Parks Master Plan, and updated to reflect current needs.

8B. Diverse Recreation Needs

Tracy's parks currently serve traditional recreation needs well. In the years ahead, the City will seek to provide new facilities that meet emerging demand and serve this diverse community. These facilities include dog parks, community gardens, adventure and educational play areas, bike parks/pump tracks, and cricket pitches.

8C. Equitable Access

Tracy's recreation facilities are not evenly distributed around the city. As part of developing the program for new and remodeled parks the City will consider equitable access as part of park programming decisions.

See also policies in Goal 4.



Golden Spike Park

Table 4-1

Recreation Facility Level of Service

RECREATION FACILITY	PARKS WITH FACILITY	TOTAL NUMBER	EXISTING LEVEL OF SERVICE (PEOPLE PER FACILITY)[A]	LEVEL OF SERVICE (LOS) STANDARD IN PARKS MASTER PLAN (NEW DEVELOPMENTS), 2013	UPDATED LEVEL OF SERVICE (LOS) STANDARD[B]
SPORTS FIELDS					
BASEBALL/SOFTBALL FIELDS	6	19	4,735	4,000	4,000
SOCCER FIELDS	6	20	4,498	5,500	5,500
SPORTS COURTS					
BASKETBALL COURTS[C]	35	36	2,499	2,250	2,750
BOCCE COURTS	2	4	22,491	20,000	20,000
HORSESHOES COURTS	6	6	14,994	20,000	20,000
TENNIS COURTS	9	16	5,623	5,000	5,000
PICKLEBALL	0	0	NA	NA	10,000
SAND VOLLEYBALL COURTS	5	5	17,993	15,000	15,000
SHUFFLEBOARD	1	1	89,965	40,000	40,000
OTHER RECREATIONAL FACILITIES					
CLIMBING WALLS/ROCKS	8	9	9,996	10,000	10,000
COMMUNITY GARDENS[D]	0	0	-	20,000	50,000
DISC GOLF	0	0	-	40,000	50,000
DOG PARKS	1	1	89,965	15,000	15,000
ENVIRONMENTAL EDUCATION FACILITIES	0	0	-	40,000	100,000
GROUP PICNIC AREAS	48	56	1,607	2,000	NA
GROUP PICNIC SHELTERS (LARGE)	1	1	89,965	20,000	20,000
INDOOR RECREATION SPACE	3	4	22,491	40,000	1.5 SQ FT PER PERSON
PLAYGROUNDS	70	95	947	NONE	1,000
ROLLER HOCKEY	2	2	44,983	40,000	50,000
SHADE STRUCTURES	62	99	909	NONE	NA
SKATE ELEMENTS	6	6	14,994	13,000	25,000
BMX BIKE PARKS/PUMP TRACKS	0	0	-	NA	50,000
SPECIAL EVENT VENUES	0	0	-	40,000	NA
SWIMMING POOLS	1	1	89,965	40,000	50,000
WATER PLAY AREAS	3	3	29,988	20,000	20,000
HARD-SURFACED PATHS[E]	32	32	2,811	3,000	NA
SOFT-SURFACED PATHS[F]	1	1	89,965	10,000	NA

SOURCES: WRT, 2020; CITY OF TRACY, 2020; TRACY PARKS MASTER PLAN (NEW DEVELOPMENTS), 2013.

NOTES:

A BASED ON ESTIMATED 2018 POPULATION OF 89,965.

B BASED ON PROJECTED 2033 POPULATION OF 106,509.

C INCLUDES HALF COURTS AND FULL COURTS.

D PRIVATELY-OPERATED COMMUNITY GARDENS ARE NOT COUNTED.

E LOOP TRAILS IN PARKS.

F FITNESS, NATURE, BIKE OR INTERPRETIVE TRAILS IN PARKS.

TO REALIZE OUR VISION WE WILL NEED...



6
SOCCER FIELDS



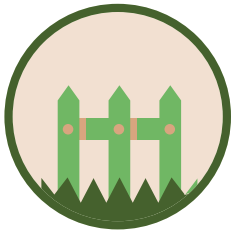
212,000
SF OF INDOOR REC SPACE



16
BASEBALL/ SOFTBALL FIELDS



8
DOG PARKS



3
COMMUNITY GARDENS



1
ENVIRONMENTAL CENTER

Following the updated recreation facility standards, the City would need 16 new baseball/softball fields; 6 new soccer fields; a variety of new sports courts and other recreation facilities, including some 212,000 square feet of indoor recreation space. When facilities that are already being planned are accounted for, a more limited need for additional facilities can be seen, including dog parks, community gardens, tennis and pickleball courts, large group picnic shelters, disc golf, and an environmental education center. See Table 4-2.



12
TENNIS COURTS (& **14** PICKLEBALL COURTS!)



6
LARGE GROUP PICNIC SHELTERS



3
DISC GOLF COURSES



3
BMX/PUMP TRACKS

&
MORE

Table 4-2

Recreation Facility Needs

RECREATION FACILITY	RECOMMENDED LOS	ADDITIONAL FACILITIES NEEDED IN 2040 BASED ON RECOMMENDED STANDARDS[A]	PLANNED FACILITIES	ADDITIONAL FACILITIES NEEDED IN 2040 IF PARKS ARE DEVELOPED AS PLANNED
SPORTS FIELDS				
BASEBALL/SOFTBALL FIELDS	4,000	16	13	3
SOCCER FIELDS	5,500	6	7	0
SPORTS COURTS				
BASKETBALL COURTS[B]	2,750	15	2	1 3
BOCCE COURTS	20,000	3	1	2
HORSESHOES COURTS	20,000	1	1	0
TENNIS COURTS	5,000	12	1	11
PICKLEBALL	10,000	14	0	14
SAND VOLLEYBALL COURTS	15,000	4	0	4
SHUFFLEBOARD	40,000	3	0	3
OTHER RECREATIONAL FACILITIES				
CLIMBING WALLS/ROCKS	10,000	5	0	5
COMMUNITY GARDENS[C]	50,000	3	0	3
DISC GOLF	50,000	3	0	3
DOG PARKS	15,000	8	2	6
ENVIRONMENTAL EDUCATION FACILITIES	100,000	1	0	1
GROUP PICNIC AREAS	NA	NA	7	NA
GROUP PICNIC SHELTERS (LARGE)	20,000	6	0	6
INDOOR RECREATION SPACE	1.5 SQ FT PER PERSON	212,000 SQ. FT.	30,000 SQ. FT.	182,000 SQ. FT.
PLAYGROUNDS	1,000	46	9	37
ROLLER HOCKEY	50,000	1	0	1
SHADE STRUCTURES	NA	NA	9	NA
SKATE ELEMENTS	25,000	0	0	0
BMX BIKE PARKS/PUMP TRACKS	50,000	3	0	3
SPECIAL EVENT VENUES	NA	NA	0	NA
SWIMMING POOLS	50,000	2	2	0
WATER PLAY AREAS	20,000	1	2	0
HARD-SURFACED PATHS[D]	NA	NA	3	NA
SOFT-SURFACED PATHS[E]	NA	NA	4	NA

SOURCES: WRT, 2020; CITY OF TRACY, 2020; TRACY PARKS MASTER PLAN (NEW DEVELOPMENTS), 2013.

NOTES:

A BASED ON PROJECTED 2040 POPULATION OF 141,341.

B INCLUDES HALF COURTS AND FULL COURTS.

C PRIVATELY-OPERATED COMMUNITY GARDENS ARE NOT COUNTED.

D LOOP TRAILS IN PARKS.

E FITNESS, NATURE, BIKE OR INTERPRETIVE TRAILS IN PARKS.

Figure 4-1
Baseball and Soccer Fields

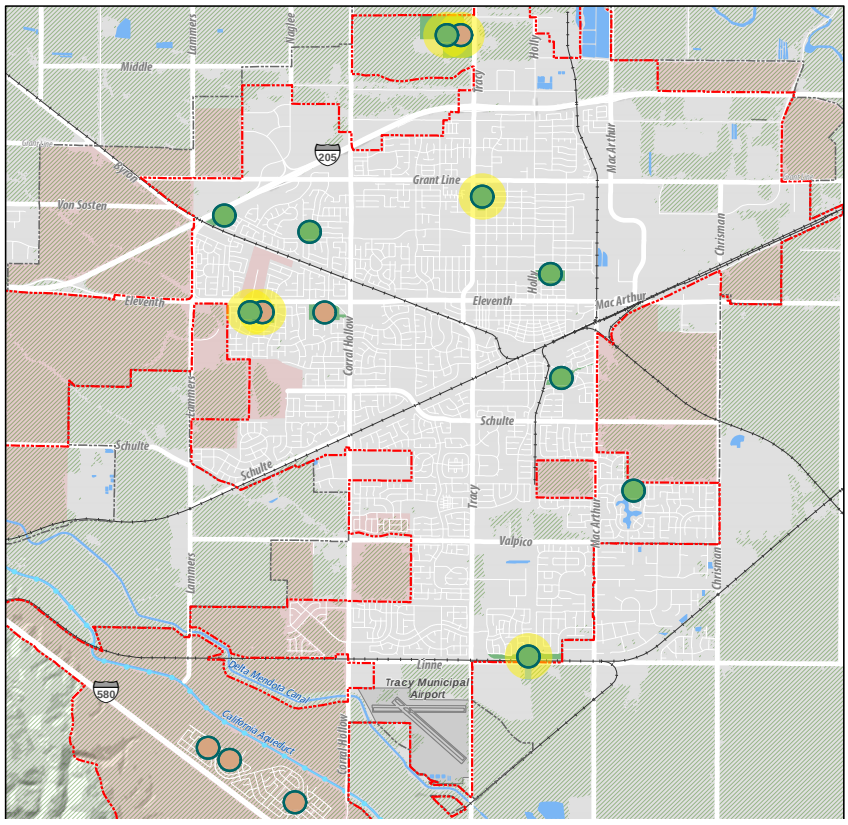


Figure 4-2
Basketball and Tennis Courts

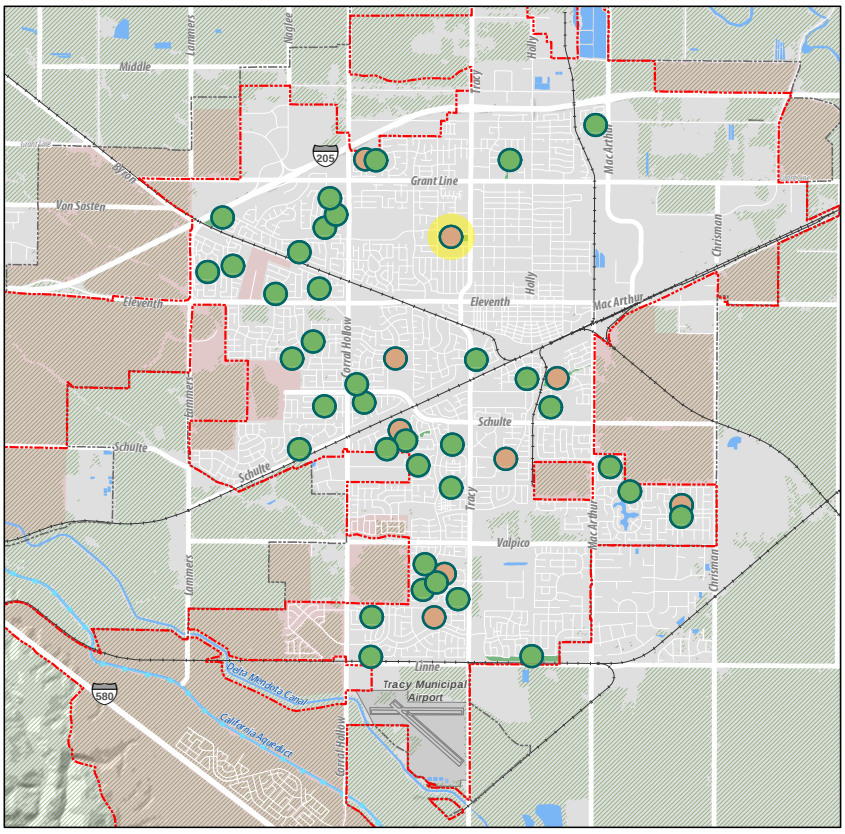
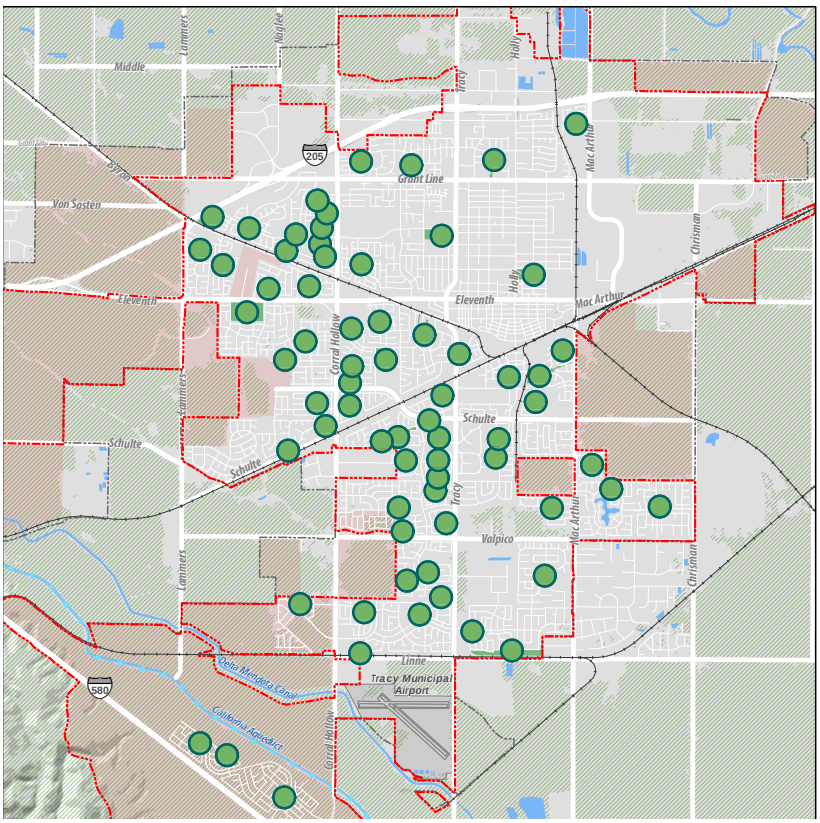


Figure 4-3
Playgrounds

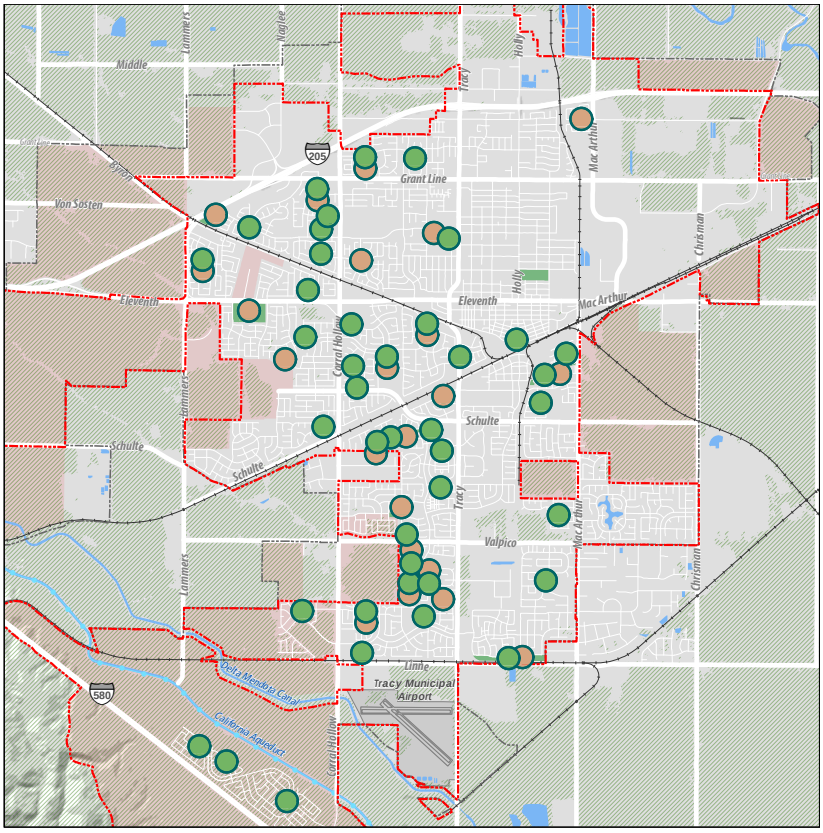


Tracy City Limit
Sphere of Influence
Aqueduct
Rivers/ Canals/ Ponds
Agriculture / Undeveloped
Airport
Future Development Area

Amenity
Playground
Park with Amenity

Tracy's recreation facilities are not evenly distributed around the city. As part of developing the program for new and remodeled parks the City will consider equitable access as part of park programming decisions.

Figure 4-4
BBQ and Picnic Areas



Tracy City Limit
Sphere of Influence
Aqueduct
Rivers/ Canals/ Ponds
Agriculture / Undeveloped
Airport
Future Development Area

Amenity
BBQ Grill
Picnic Area
Park with Amenity

8D. Aquatics Center

The City will continue work with our developer partner to create an aquatics center open to all City residents. The 16-acre facility will feature a 50-meter pool, a leisure/recreation pool, a lazy river, waterslides, a toddler pool and potentially a play structure and wet deck.



8E. Multi-Generational Recreation Center

The City will continue to work toward the creation of a high-quality indoor recreation space. This may be in the form of a single multi-generational recreation center, or multiple facilities that provide the desired amenities including a gymnasium, a library and educational spaces, a teaching kitchen, administration spaces, multi-purpose rooms, and a lobby and lounge space.

8F. Legacy Fields Sports Complex

The City will continue to develop the Legacy Fields Sports Complex in strategic phases. This includes completion of Phase 1's eastern ballfields, paving of parking lots, and wayfinding/signage. A future Phase 2 expansion would continue to expand active recreation including but not limited to soccer, baseball, and football to the west toward Corral Hollow Road.







Tracy's recreation facilities and programs give all Tracy residents ways to make friends , build confidence, stay healthy, and learn lifelong skills.





Dance class at Tracy Community Center

GOAL 9

PROGRAMS THAT FIT THE COMMUNITY

The Department will continue to evaluate and refresh its recreation programs. The Department will align its cost recovery goals and pricing strategy so that resources are focused on essential programs, while enabling "value-added" programs to emerge.

POLICIES:

- *9A. Recreation Program Priorities*
- *9B. Service Classification and Cost Recovery*
- *9C. Develop a Pricing Policy Based on Classification of Programs and Services*
- *9D. Develop Pricing Strategies*
- *9E. Program Monitoring and Updating*
- *9F. Equitable and Inclusive Programming*
- *9G. Staff Training and Organizational Support*
- *9H. Inclusion Policy Development*
- *9I. Performance Measures*

GOAL 9: PROGRAMS THAT FIT THE COMMUNITY

POLICIES

9A. Recreation Program Priorities

Tracy offers a good mix of recreation programs in a range of core program areas. Expanding recreation and activity programs for teens was the highest programming priority according to the survey conducted for the Master Plan Update, echoing themes we heard from stakeholders. Programs and activities for kids, seniors and adults were also broadly supported. Program priorities and associated needed facilities are summarized in Table 4-3.



The Department will continue to evaluate and refresh its recreation program offerings to ensure that community demand is being met.

Table 4-3
Recreation Program Priorities

HIGH PRIORITY		
RECREATION EXPERIENCE	**CORE PROGRAM AREA**	**CORRESPONDING FACILITIES / AMENITY NEEDED TO SUPPORT EXPERIENCE DESIRED**
WEIGHT LIFTING	EXERCISE AND FITNESS	MULTI-GENERATIONAL RECREATION CENTER - FITNESS CENTER
JOGGING/ RUNNING	EXERCISE AND FITNESS	TRAILS & MULTI-GENERATIONAL RECREATION CENTER - INDOOR WALKING TRACK
BASKETBALL	COURT SPORTS	OUTDOOR BASKETBALL COURTS/MULTI-GENERATIONAL RECREATION CENTER - GYMNASIUM
TENNIS/PICKLEBALL	COURT SPORTS	TENNIS & PICKLEBALL COURTS - OUTDOORS
YOGA	EXERCISE AND FITNESS	MULTI-GENERATIONAL RECREATION CENTER - GROUP EXERCISE STUDIOS
AFTER SCHOOL PROGRAMS	ENRICHMENT	MULTI-GENERATIONAL RECREATION CENTER - MULTIPURPOSE SPACE/ GYMNASIUMS/CLASSROOMS
CAMPS FOR KIDS	ENRICHMENT	MULTI-GENERATIONAL RECREATION CENTER - MULTIPURPOSE SPACE/ GYMNASIUMS/CLASSROOMS
COMMUNITY SPECIAL EVENTS	COMMUNITY SPECIAL EVENTS	EVENT VENUE OR LARGE REGIONAL PARK
SOCCER	RECTANGLE FIELD ATHLETICS	MULTI-PURPOSE FIELDS
WALKING FOR EXERCISE	EXERCISE AND FITNESS	TRAILS & MULTI-GENERATIONAL RECREATION CENTER - INDOOR WALKING TRACK
VOLLEYBALL	COURT SPORTS	MULTI-GENERATIONAL RECREATION CENTER - GYMNASIUM/OUTDOOR SAND OR GRASS COURTS
BICYCLING (MOUNTAIN)	OUTDOOR ADVENTURE	MOUNTAIN BIKE TRAILS; PUMP TRACK; BMX TRACK
AEROBICS	EXERCISE AND FITNESS	MULTI-GENERATIONAL RECREATION CENTER - GROUP EXERCISE STUDIOS
SOFTBALL	DIAMOND FIELD ATHLETICS	SOFTBALL FIELDS - 65' BASES
BICYCLING (ROAD)	EXERCISE AND FITNESS	TRAILS
FOOTBALL	RECTANGLE FIELD ATHLETICS	MULTI-PURPOSE FIELDS
BASEBALL	DIAMOND FIELD ATHLETICS	DIAMOND FIELDS; 60' AND 90' BASES
HIKING	OUTDOOR ADVENTURE	TRAILS CONNECTIONS TO HIKING AREAS
PILATES	EXERCISE AND FITNESS	SENIOR CENTER/MULTI-GENERATIONAL RECREATION CENTER
SWIMMING - OPEN RECREATION SWIM	AQUATICS	INDOOR/OUTDOOR RECREATION AQUATIC FACILITIES
SWIMMING - SWIM LESSONS	AQUATICS	INDOOR/OUTDOOR AQUATIC FACILITIES (WARM WATER)

Establishing clarity about what constitutes an “Essential Public Service”, “Important Public Service”, and “Value Added Service” provides the division and its stakeholders with a better understanding of why and how to manage each program as it applies to public value and private value.

Table 4-3
Recreation Program Priorities (continued)

SWIMMING - AQUATIC EXERCISE/ THERAPY	AQUATICS	INDOOR/OUTDOOR AQUATIC FACILITIES (WARM WATER)
MEDIUM PRIORITY		
RECREATION EXPERIENCE	**CORE PROGRAM AREA**	**CORRESPONDING FACILITIES / AMENITY NEEDED TO SUPPORT EXPERIENCE DESIRED**
SWIMMING - LAP SWIMMING	AQUATICS	INDOOR/OUTDOOR AQUATIC FACILITIES (MINIMUM OF 25 YARD)
SENIOR - EDUCATIONAL/INFORMATIONAL	SENIOR SERVICES	MULTI-GENERATIONAL RECREATION CENTER - MULTIPURPOSE SPACE/ CLASSROOMS/CUSTOMER SERVICE
SENIOR - CLUBS	SENIOR SERVICES	MULTI-GENERATIONAL RECREATION CENTER - MULTIPURPOSE SPACE/ CLASSROOMS
SENIOR - SPECIAL EVENTS	SENIOR SERVICES	MULTI-GENERATIONAL RECREATION CENTER - MULTIPURPOSE SPACE/ CLASSROOMS
SENIOR - SPECIAL INTEREST	SENIOR SERVICES	MULTI-GENERATIONAL RECREATION CENTER - MULTIPURPOSE SPACE/ CLASSROOMS
SENIOR - TRIPS	SENIOR SERVICES	MULTI-GENERATIONAL RECREATION CENTER - INFORMATION DESK/CUSTOMER SERVICE
SWIMMING - SWIM TEAMS	AQUATICS	INDOOR/OUTDOOR AQUATIC FACILITIES (MINIMUM OF 25 BY 25 YARD POOL)
ZUMBA	EXERCISE AND FITNESS	MULTI-GENERATIONAL RECREATION CENTER - GROUP EXERCISE STUDIOS
ENVIRONMENTAL EDUCATION PROGRAMS	ENVIRONMENTAL EDUCATION	NATURE AREA/NATURE CENTER
LOWER PRIORITY		
RECREATION EXPERIENCE	**CORE PROGRAM AREA**	**CORRESPONDING FACILITIES / AMENITY NEEDED TO SUPPORT EXPERIENCE DESIRED**
TARGET SHOOTING	OUTDOOR RECREATION	SPORTS SHOOTING CENTER
FRISBEE/DISC GOLF	DISC GOLF	DISC GOLF COURSE
CANOEING/KAYAKING	OUTDOOR RECREATION	ACCESS TO RIVERS AND LAKES (BOAT LAUNCHES)
FISHING (FRESH WATER)	OUTDOOR RECREATION	ACCESS TO RIVERS AND LAKES (FISHING PIERS)
HORSEBACK RIDING	EQUESTRIAN	EQUESTRIAN TRAILS/EQUESTRIAN EXERCISE RINGS
ARCHERY	OUTDOOR RECREATION	ARCHERY CENTER

Table 4-4
Service Classification Summary

SERVICE CLASSIFICATION	WHO BENEFITS?	WHO PAYS?
ESSENTIAL	GENERAL PUBLIC	THE PUBLIC THROUGH THE TAX SYSTEM, NO USER CHARGES
IMPORTANT	INDIVIDUALS WHO PARTICIPATE BENEFIT BUT ALL MEMBERS OF THE COMMUNITY BENEFIT IN SOME WAY	INDIVIDUAL USERS PAY PARTIAL COST
VALUE-ADDED	INDIVIDUAL WHO PARTICIPATES	INDIVIDUAL USERS PAY FULL COSTS

9B. Service Classification and Cost Recovery

With the Citywide Parks, Recreation and Trails Master Plan Update, the Department has begun the process of classifying its services according to a pyramid with essential services at its base, important services in the middle, and value-added services at the top. Essential services are defined as those that benefit all the public. Important services benefit individuals who participate, but the broader community benefits as well. Value-added services primarily benefit individuals who participate.

Of the programs Tracy considers essential, many are in Aquatics (for all ages), and Health & Wellness (for seniors) areas. Value-added programs are concentrated in the Athletic Programs and Enrichment Programs categories.

Tracy will align its cost recovery goals and pricing strategy to support this classification, so that Department resources are focused on "essential" programs, while "value added" programs can be expected to recover more of their costs with user fees. The percentage of cost recovery is based on the classification of services and will typically fall within these ranges, although anomalies will exist:

- Essential 0-25%
- Important 25-75%
- Value Added 75%+

9C. Cost of Service Analysis

To properly fund all programs, either through tax subsidies or user fees, and to establish the right cost recovery targets, a Cost of Service Analysis should be conducted on each program, or program type, that accurately calculates direct (i.e., program-specific) and indirect (i.e., comprehensive, including administrative overhead) costs. Completing a Cost of Service Analysis not only helps determine the true and full cost of offering a program but provides information that can be used to accurately price programs.

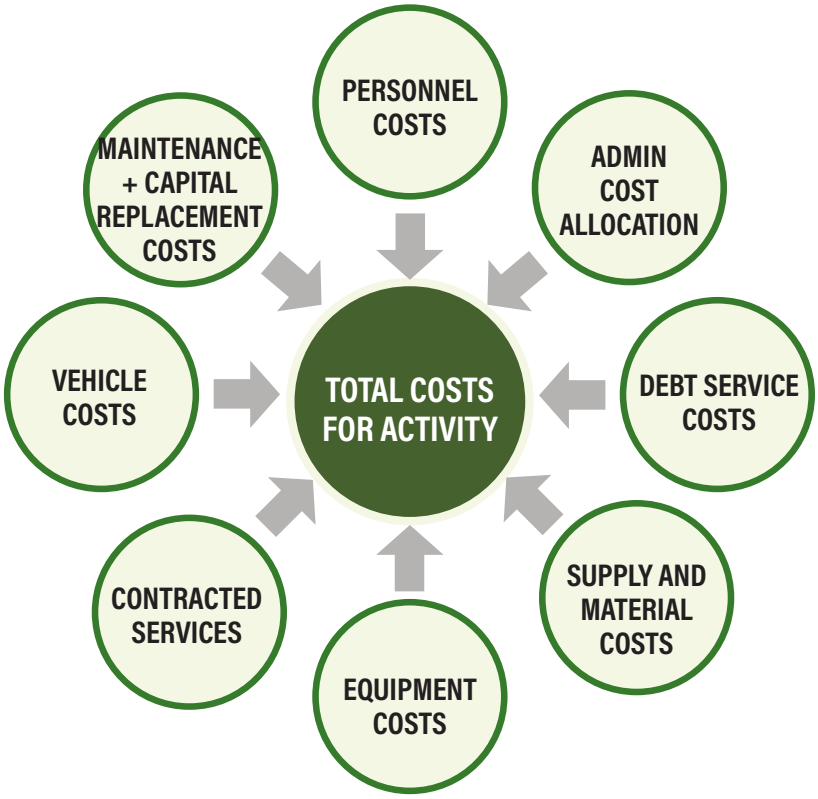


Table 4-5
Service Classification and Cost Recovery Goals

CORE PROGRAM / SERVICE AREA	BENEFIT LEVEL	CLASSIFICATION	PRICING STRATEGY	COST RECOVERY
AFTER SCHOOL PROGRAMS				
AFTER SCHOOL PROGRAM- POET	MERIT	IMPORTANT	USER FEE/GENERAL FUND	50%
AFTER SCHOOL PROGRAM- BOHN	MERIT	IMPORTANT	USER FEE/GENERAL FUND	50%
AFTER SCHOOL PROGRAM- HIRSCH	MERIT	IMPORTANT	USER FEE/GENERAL FUND	50%
S.A.F.E (STUDENTS ADDING FUN TO EDUCATION)	MERIT	IMPORTANT	USER FEE/GENERAL FUND	50%
AQUATICS				
ACTIVE ADULT 50+ SWIM	COMMUNITY	ESSENTIAL	GENERAL FUND	0-25%
ADULT & TEEN SWIM LESSONS	COMMUNITY	ESSENTIAL	GENERAL FUND	0-25%
ADULT/HIGH INTENSITY WATER EXERCISE	MERIT	IMPORTANT	USER FEES/GENERAL FUND	50%
ADVANCED SWIM SKILLS	MERIT	VALUE ADDED	USER FEES	75 - 100%
AQUATIC PRIVATE LESSONS	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
AQUATIC SPECIAL EVENTS	COMMUNITY	ESSENTIAL	GENERAL FUND	0-25%
DEEP WATER EXERCISE	COMMUNITY	ESSENTIAL	GENERAL FUND	0-25%
FREE SWIM LESSONS AT STAFF TRAINING	COMMUNITY	ESSENTIAL	GENERAL FUND	0-25%
LAP SWIM	MERIT	IMPORTANT	USER FEES/GENERAL FUND	50%
LIFEGUARD TRAINING	MERIT	IMPORTANT	USER FEES/GENERAL FUND	50%
PARENT/TOT SWIM CLASSES	COMMUNITY	ESSENTIAL	GENERAL FUND	0-25%
POOL SAFETY DAY	COMMUNITY	ESSENTIAL	GENERAL FUND	0-25%
RECREATIONAL SWIM IN-SEASON	COMMUNITY	ESSENTIAL	GENERAL FUND	0-25%
SCUBA CLASS - SEAL TEAM SCUBA CAMP	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
SWIM SKILLS	COMMUNITY	ESSENTIAL	GENERAL FUND	0-25%
TEEN NIGHT & POOL PARTY	COMMUNITY	ESSENTIAL	GENERAL FUND	0-25%
TINY TOTS SWIM LESSONS	COMMUNITY	ESSENTIAL	GENERAL FUND	0-25%
ATHLETICS				
ATHLETE JOE'S	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
ATHLETIC PERFECTION	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
BEGINNING STRENGTH AND CONDITIONING	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
BOOTY BOOTCAMP	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
CARDIO KICKS- CROSS FIT AND PERSONAL SAFETY	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
FUTURE STARS TENNIS LESSONS	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
GOLF INSTRUCTION	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
HOOP IT UP BASKETBALL CAMPS	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
KIDZ LOVE SOCCER	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
OLYMPIC STYLE TAE KWON DO	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
ADULT SOFTBALL	MERIT	IMPORTANT	USER FEES/GENERAL FUND	50%
JUNIOR WARRIORS/JUNIOR GIANTS	COMMUNITY	ESSENTIAL	USER FEES	0-25%
CAMPS				
EDUCATIONAL/LIFE SKILLS CAMPS	COMMUNITY	ESSENTIAL	GENERAL FUND	0-25%
EMPOWERMENT CAMPS	MERIT	IMPORTANT	USER FEES/GENERAL FUND	50%
SPORTS CAMPS	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
THEME CAMPS	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%

Table 4-5 (continued)
Service Classification and Cost Recovery Goals

CORE PROGRAM / SERVICE AREA	BENEFIT LEVEL	CLASSIFICATION	PRICING STRATEGY	COST RECOVERY
COMMUNITY EVENTS				
SPECIAL EVENTS (ALL COMMUNITY)	COMMUNITY	ESSENTIAL	GENERAL FUND	0-25%
RESOURCE FAIRS	MERIT	IMPORTANT	USER FEES/GENERAL FUND	50%
ENRICHMENT				
SENIOR - EDUCATIONAL/INFORMATIONAL	MERIT	IMPORTANT	USER FEES	50%
SENIOR - CLUBS	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
SENIOR - SPECIAL EVENTS	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
SENIOR - SPECIAL INTEREST	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
SENIOR - TRIPS	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
YOUTH - ARTS AND CRAFTS	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
YOUTH - SPECIAL INTEREST	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
HEALTH & WELLNESS				
SENIOR BARRE FOR ACTIVE AGING	MERIT	IMPORTANT	USER FEES/GENERAL FUND	50%
SENIOR BROWN BAG 2019	MERIT	IMPORTANT	USER FEES/GENERAL FUND	50%
SENIOR CHAIR PILATES	MERIT	IMPORTANT	USER FEES/GENERAL FUND	50%
SENIOR INTERVAL TRAINING	COMMUNITY	ESSENTIAL	GENERAL FUND	0-25%
SENIOR MEDICARE EVENT	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
SENIOR PING PONG	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
SENIOR YOGA	COMMUNITY	ESSENTIAL	GENERAL FUND	0-25%
SENIOR- TAI CHI	COMMUNITY	ESSENTIAL	GENERAL FUND	0-25%
SENIORS- CARDIO & SCULPTING	COMMUNITY	ESSENTIAL	GENERAL FUND	0-25%
SENIORS- DAILY NUTRITION LUNCH	COMMUNITY	ESSENTIAL	GENERAL FUND	0-25%
SENIORS-30/30 WORKOUT	COMMUNITY	ESSENTIAL	GENERAL FUND	0-25%
SENIORS-CARDIO & SCULPTING	COMMUNITY	ESSENTIAL	GENERAL FUND	0-25%
SENIORS-INTERVAL TRAINING	COMMUNITY	ESSENTIAL	GENERAL FUND	0-25%
SENIORS-MIND & MUSCLE	COMMUNITY	ESSENTIAL	GENERAL FUND	0-25%
SENIOR WALKING CLUB	MERIT	IMPORTANT	USER FEES/GENERAL FUND	50%
SENIOR CHAIR EXERCISE	COMMUNITY	ESSENTIAL	GENERAL FUND	0-25%
SENIOR TWIST & SHOUT	COMMUNITY	ESSENTIAL	GENERAL FUND	0-25%
DANCE FOR PARKINSON'S	MERIT	IMPORTANT	USER FEES/GENERAL FUND	50%
CPR/AED FIRST AID (AMERICAN HEART ASSOCIATION)	MERIT	IMPORTANT	USER FEES/GENERAL FUND	50%
ELEVATE YOGA - SPECIAL CLASS	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
PIYO STRENGTH	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
SENIOR - ZUMBA GOLD	MERIT	IMPORTANT	USER FEES/GENERAL FUND	50%
SENIOR- TAI CHI	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
STABILITY BALL MUSCLE SCULPTING	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
STRONG BY ZUMBA	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
TABATA - FIT FOR BEGINNERS	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%
WOMEN'S SELF-DEFENSE & PERSONAL VIOLENCE PREVENTION	MERIT	IMPORTANT	USER FEES/GENERAL FUND	50%
YOGA	INDIVIDUAL	VALUE ADDED	USER FEES	75 - 100%



Analysis of participation in our programs helps us refine our offerings.

9D. Pricing Policy and Strategies

Pricing based on established cost recovery goals will provide flexibility to maximize all pricing strategies to the fullest. Allowing the staff to work within a pricing range tied to cost recovery goals will permit them to set prices based on market factors and differential pricing (prime-time/non-primetime, season/off-season rates) to maximize user participation and also encourage additional group rate pricing where applicable.

To gain and provide consistency, a revised pricing policy should be adopted in order for the City of Tracy Parks and Recreation Department to operate effectively and efficiently to meet the program cost recovery goals. In order to achieve the cost recovery goals, efforts must be made to:

- Consistently deliver high quality programs and services
- Strategically price programs and services
- Solicit sponsorships and donations to develop a sustainable earned income stream
- Expand marketing to increase the volume of participation in programs and services

It is expected that introducing the classification methodology and a new pricing policy along with the refinement of Department's cost of service analysis will occur over the next five years, and will begin to affect cost recovery as changes are introduced. Additionally, external factors such as economic conditions and changes to the City's financial policies will have a bearing on achieving cost recovery goals.

As the Parks and Recreation Department embarks on the implementation of a new pricing policy, it will be necessary to develop pricing strategies that will not only increase sales but also maximize the utilization of the City of Tracy' parks, programs and recreation facilities. By creating pricing options, customers are given the opportunity to choose which option best fits their schedule and price point. The Department will continue to explore pricing strategies that create options for the customer.

The most appropriate strategies for the City of Tracy to consider are as follows:

- Primetime and Non-primetime pricing strategy. The price is set based on the time of the day. Primetime is considered to be the time of day in which the demand for the service is highest. Fees for the rental of a park or pool during this time would be set at rate that would recover 125-150% of costs incurred. To lessen the demand for "primetime", the Department can lower prices for rentals of the park or pool during times in which demand is lower. This will assist in maximizing the utilization of its facilities.
- Premium pricing. The price set is high to reflect the exclusiveness of the product. An example of this would be a user group paying higher rental fees for the exclusive use of a facility that prohibits the general public or other groups from participating.

9E. Program Monitoring and Updating

The City will continue to monitor recreation programming to ensure that program offerings meet the needs of Tracy residents. This will include:

- Participation Data Analysis. Through consistent participation data analysis across all core program areas, refine recreation program offerings to reduce low enrollment or cancelled programs due to no enrollment.
- Expand programs and services in the areas of greatest demand. Ongoing analysis of the participation trends of programming allows staff to focus efforts on the programs and services of the greatest need and reduce or eliminate programs and services where interest is declining.
- Partnerships. Memorialize all partnerships in formal agreements.
- Evaluation. Implement the program assessment and evaluation tool as recommended. The assessment/evaluation tool is provided as an Excel spreadsheet as a stand-alone separate document.

9F. Equitable and Inclusive Programming

Programming in parks can be made more inclusive by having the capacity to provide one-on-one support from trained staff; language interpretation; culturally sensitive program hours (i.e. women-only pool hours), and accessible transportation options.

9G. Staff Training and Organizational Support

City staff will regularly participate in trainings grounded in effective training models using evidence-based content. Training will be comprehensive (covers multiple topics), based on credible research and delivered by qualified personnel. All new staff members will be quickly oriented to inclusive policies and practices.

We will put in place organizational supports that create a social environment (including positive relationships among staff, youth, families and community) that encourages all to be inclusive. For Staff, this includes:



Tracy strives for inclusive programs that welcome and benefit all residents.

- Demonstrating an attitude of inclusion, including nondiscriminatory language and actions
- Determining and addressing any potential unintended outcomes of activities, programs or parks to ensure that they do not limit participation or cause worse outcomes based on ability, age, sexual orientation, identity, religion or country of origin
- Providing educational materials about inclusion to all constituents at community events
- Sharing and discussing practices during community meetings

For the Parks and Recreation Department, this means:

- Developing an advisory group and/or community network of groups that support inclusive behaviors in the community
- Assessing agency hiring practices to ensure staff is representative of the diverse community and is an equal-opportunity employer
- Communications
- Providing positive messages about diversity and inclusion through written and verbal messaging, posters, pictures and books.

9H. Inclusion Policy Development

The Parks and Recreation Department will initiate an equity and inclusion policy and strategy that builds on these. The policy will involve a study of community equity issues; an engagement process that includes people who can speak to a diversity of experiences; policy integration and rollout that ensures consistency across the Department and staff; and a plan for measurement and continuous improvement.



Concerts in the park, Front Street Plaza

9I. Performance Measures

Performance measures have become the backbone of successful organizations. The Department will use the template provided here to develop three to five key performance measures for each line of service, including but not limited to, cost recovery, program service delivery, facility maintenance, and marketing and technology solutions to determine and, in turn, communicate the level of success they are achieving on an annual basis.

Table 4-6
Template of Performance Measures

LINE OF SERVICE	ACTIVITY GOAL (WHAT, WHOM, WHY?)	INPUT (BUDGET AND RESOURCES)	OUTPUT (END PRODUCT-VOLUME)	EFFICIENCY (UNIT COST)	EFFECTIVENESS (SERVICE QUALITY)
FACILITY MAINTENANCE	DETERMINE, THEN STRIKE THE OPTIMUM BALANCE BETWEEN RESOURCES NEEDED TO MAINTAIN FACILITIES AND FACILITY OPERATION TO MINIMIZE UNPLANNED CLOSURES	INCLUSIVE OF ALL OPERATIONAL COSTS: STAFF, UTILITIES, PM, ETC AS WELL AS LOST REVENUE.	# OF DAYS OF UNPLANNED CLOSURES DUE TO MAINTENANCE	COST PER DAY OF FACILITY CLOSURE (INCLUDES FUNDS EXPENDED TO RE-OPEN FACILITY AS WELL AS LOST REVENUE)	UNPLANNED CLOSURE DAYS AS A % OF TOTAL ANNUAL OPERATING DAYS
PROGRAMS & SERVICES	PROVIDE FEE ASSISTANCE TO LOW-INCOME/ MARGINALIZED TRACY RESIDENTS TO MAXIMIZE THEIR PARTICIPATION IN PROGRAMS AND SERVICES PROVIDED BY THE DIVISION	FUNDING PROVIDED	# OF LOWINCOME/ MARGINALIZED TRACY RESIDENTS THAT RECEIVED FEE ASSISTANCE	COST/FUNDING PER PARTICIPANT	FEE-ASSISTED PARTICIPANTS AS % OF TOTAL PARTICIPANTS
BUSINESS SERVICES	PROVIDE AND MANAGE TECHNOLOGY SERVICES THAT AID THE COMMUNITY IN CONVENIENTLY REGISTERING FOR PRODUCTS AND SERVICES ONLINE	RESOURCES REQUIRED TO MANAGE AND MAINTAIN ONLINE SERVICES	# OF ONLINE REGISTRATIONS SUCCESSFULLY PROCESSED	COST PER SUCCESSFUL ONLINE REGISTRATION	ONLINE REGISTRATIONS AS A% OF TOTAL REGISTRATIONS ONLINE REGISTRATION COSTS AS A% OF TOTAL REGIST RATION COSTS

Source: PROS Consulting, 2019.

TRAILS

CHAPTER 05



Trails are a new chapter in the development of our park system. We have come to see how valuable a trail system is for our health and quality of life, and intend for trails to increasingly thread between parks and throughout our community.

IN THIS CHAPTER:

- Trails: Where and Why?
- Trails for Recreation and Active Transportation
- A Complete and Connected Trail System
- Trail Design Guidelines

TRAILS: WHERE AND WHY?

TRAILS IN TOWN

We think of hiking on trails when we're out in nature. What does it mean to have a trail system in an urban environment?

We see trails as a way to bring the joy of walking (and biking) into our everyday lives, while giving people more ways to get around. Our urban trail system will have three main contexts.

- Along roadways, where multiuse trails and good bikeways are already being planned.
- Along infrastructure corridors that cross through our community: rail lines, utility corridors, and irrigation canals.
- In linear parks and open spaces, including parks in town and open spaces that give us an experience of the rural surroundings.

HEALTH & HAPPINESS

We heard loud and clear that more trails will be welcomed by Tracy residents. And trails are in suited to our recreation mission: walking and biking contribute to our physical and mental well-being. Happy trails indeed.

TRANS-PORTATION CHOICES

Trails also provide transportation choices. Where people can walk and bike safely for day-to-day life, they are less dependent on driving. That's good for kids, seniors, and everyone in between. And it's good for our air and our larger environment.

This Master Plan focuses on trails that are separate from the roadway system. Additional information related to the City's bikeways can be found in the Transportation Master Plan.





Monterey Bay Coastal Trail



GOAL 10
TRAILS FOR RECREATION & ACTIVE TRANSPORTATION

Tracy's trail system will be planned and designed to support both recreation and travel, serving everyone from casual walkers to high school cross-country teams and cycling clubs to people of all ages who could use trails as a healthy transportation option.

POLICIES:

10A. Trails that Support Recreation

10B. Trails that Support Active Transportation

GOAL 10: TRAILS FOR RECREATION & ACTIVE TRANSPORTATION

POLICIES

10A. Trails that Support Recreation

Trails will be developed with recreational users in mind. This may include but not be limited to:

- Creating loops within and between parks and natural attractions;
- Connecting to high schools to support cross-country running programs;
- Providing fully accessible shared use trails as well as unpaved trails in open space areas;
- Providing trails and staging areas for equestrians;
- Connecting trails with parks that provide amenities including restrooms and picnic areas;
- Providing trails that are designed to be comfortable, attractive and unique
- Eating and resting areas, especially where they can take advantage of special views;
- Bike racks;
- Mileage markers;
- Working with San Joaquin County and others to establish safe and clearly-identified bike routes connecting Tracy with natural areas.

10B.Trails that Support Active Transportation

Trails will be developed that enable more people in Tracy to travel safely and comfortably to work, school, shopping areas, transit stations, and other destinations on foot or by bike. This may include but not be limited to:

- Creating trails along rail, canal and utility corridors providing direct travel routes within the heart of town;
- Creating trails along major corridors, providing safe, low-stress options for walkers and bikers;
- Creating trails that create safe routes to schools;
- Creating trails that connect residential neighborhoods to downtown Tracy and regional transit;
- Creating “mobility hubs” where trails, transit, pick-up/drop-off areas and docking stations come together.
- Evaluate bikeshare programs, e-bike charging stations, and other emerging micro-mobility options;
- Providing lighting that enables year-round use.













Tracy's trails will serve a variety of users , including people walking, running and biking; for travel and everyday exercise; children and adults.





Atlanta Beltline

GOAL 11

A COMPLETE & CONNECTED TRAIL SYSTEM

The City recognizes the strong community desire for trails, and will work to create a connected and complete network of multiuse trails along roadways, rail rights-of-way, and canals, and in future development areas.

POLICIES:

11A. Coordinate to Create a Complete Network

11B. Trail System Master Plan

11C. Linear Park and Open Space Trails

11D. Canalside and Railside Trails

11E. Trails along Multimodal Corridors

11F. Trails with New Development

11G. Signage for Wayfinding, Interpretation and Identity

11H. Safety on Trails

11I. Comfort on Trails

BIKEWAYS AND TRAILS

- Tracy's Bikeways Master Plan lays out an ambitious network of bikeways across the city and future development areas. These are shown on the map at right.
- That Plan's goal is to create a low-stress system that encourages the many "interested but concerned" riders among us feel safe pedalling around town.
- This plan for a trail system is about both walking **and** biking, and its focus is on recreation **and** transportation.
- We build on the Bikeways plan, and we focus especially on how to create and design great off-street multiuse trails.

GOAL 11: A COMPLETE & CONNECTED TRAIL SYSTEM

POLICIES

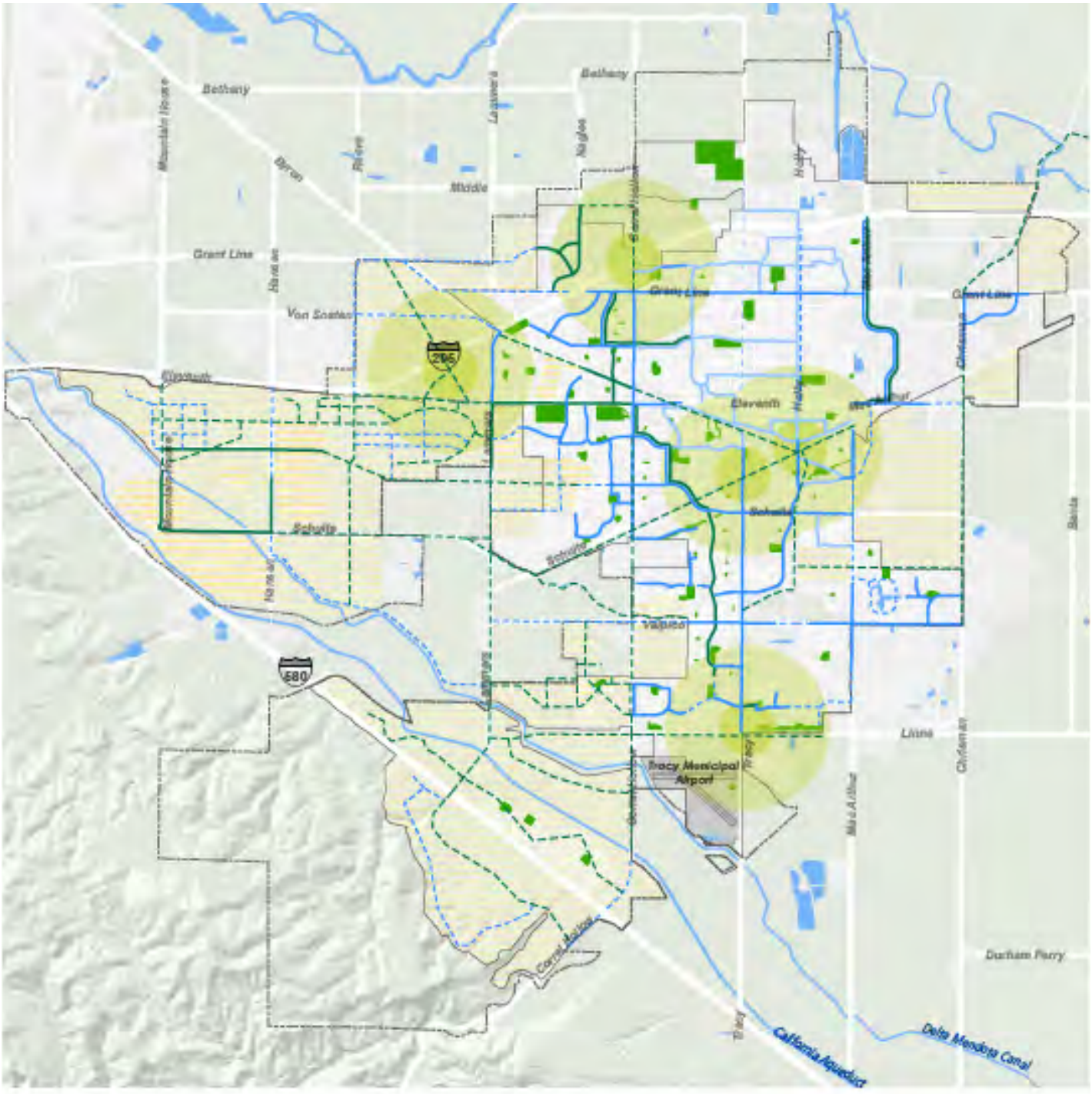
11A. Coordinate to Create a Complete Network

Building on existing off-street trails and the existing and planned bikeway network, Parks and Recreation will coordinate with other City departments to ensure that trail segments in parks and open spaces are linked with on-street segments that form part of the City's bikeway network. The City will also coordinate with railroads, irrigation districts, private land owners, San Joaquin County and regional trail initiatives.

Developers of specific or master plan areas that include linear parks and trails must coordinate with the City on trail alignment to ensure that trails contribute to an overall system.

This Master Plan focuses on trails that are separate from the roadway system. Additional information related to the City's bikeways can be found in the Transportation Master Plan.

Figure 5-1
Existing and Planned Bikeway Network



11B. Linear Park and Open Space Trails

The City will promote the creation of trails in existing and new linear parks and preserved open spaces. These trails are designed for use by people on foot, on bikes, and other non-motorized travel. Key locations for these off-street trails include:

- Trails in existing and new linear parks;
- Trails that connect between parks along open space or infrastructure corridors;
- Multi-use trails in preserved open space areas.

Linear parks may receive park credit, as described in Chapter 3.

11C. Canalside and Railside Trails

Canals and rail lines present special opportunities to thread new off-street shared use trails through Tracy, creating direct travel paths for walkers and bikers, and a way to experience our community from unfamiliar perspectives. The City will seek partnerships with irrigation districts and railroads and funding opportunities to create these trails.

11D. Trails along Multimodal Corridors

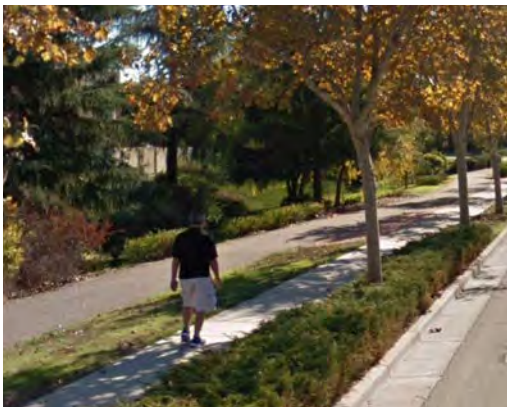
Tracy's trail system will leverage existing and planned bikeways and corridor improvements to create cross-city linkages.

11E. Trails with New Development

Where trails identified in the Tracy Trail System map cross property planned for development, trail easements must be provided. At the City's discretion, development impact fees may be used for trail improvements.



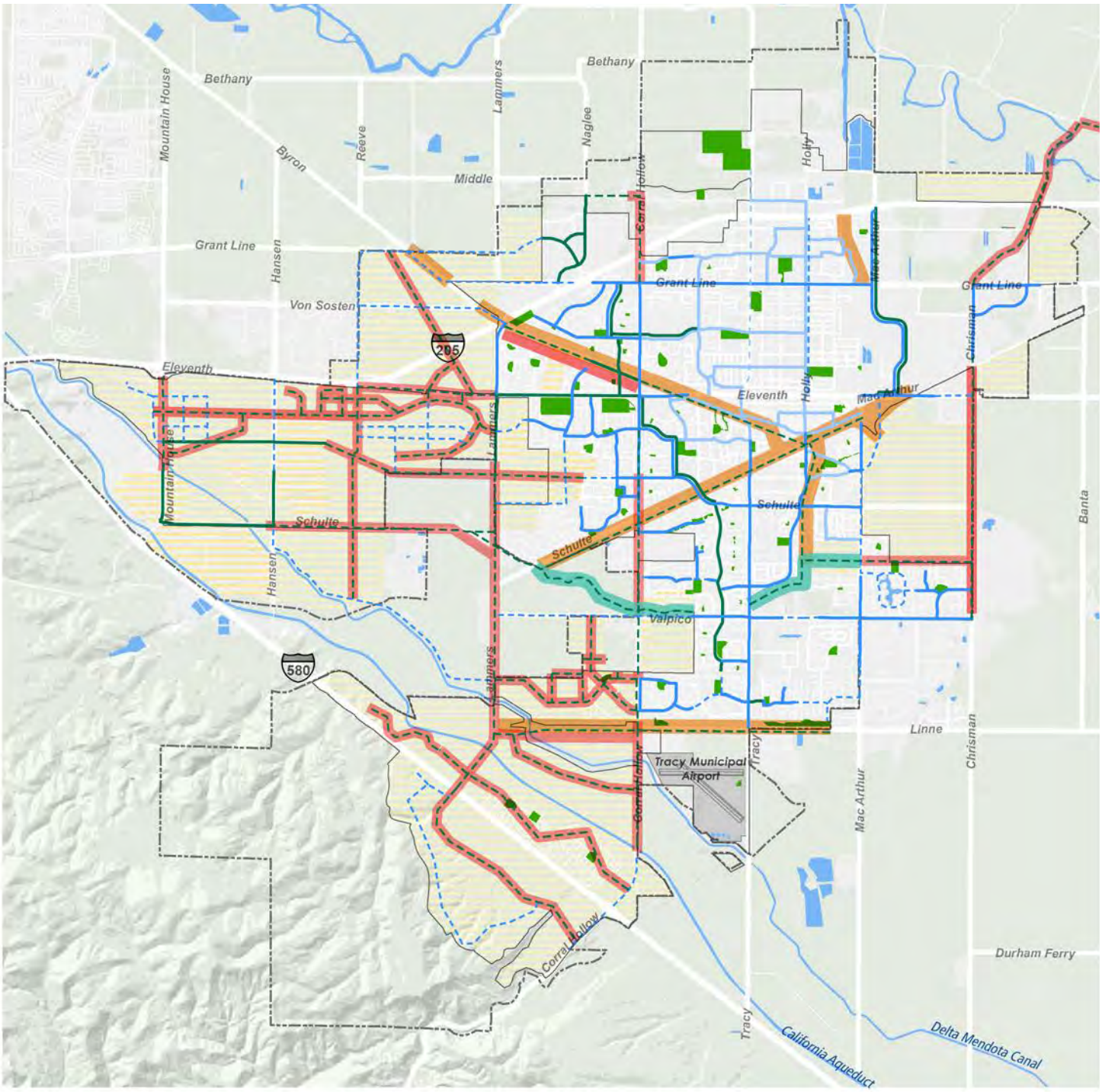






Rail dorridors and canals (top) provide great opportunities for trails in Tracy. The trail system will also build on our multiuse trails along Sycamore Parkway and other streets, and in future open spaces areas like the Tracy Nature Park (bottom)..

Figure 5-2
Off-Street Trail Opportunities



- Tracy City Limit
- Sphere of Influence
- Rivers/ Canals/ Ponds / Aqueduct
- Agriculture / Undeveloped
- Airport
- Future Development Area
- Existing Class I Bike Path / Multiuse Trail
- Existing Class 2 Bikeway
- Existing Class 3 Bikeway

Planned Bikeways

- Future Class I Bikeway / Multiuse Trail
- Future Class 2 Bikeway
- Future Class 3 Bikeway
- Future Roadside Trail
- Future Irrigation Right-of-way Trail
- Future Rail-with-trail Alignment

HOW DO WE CREATE A FUNCTIONAL AND MEMORABLE TRAIL SYSTEM?

We can start by identifying what we want to connect. This plan proposes the following priorities:

> Connect to major destinations including downtown, transit and mobility hubs, and high schools.

> Connect to key parks, recreation and open space destinations, including our community parks, sports complexes, and the nature park.

> Connect to the river, valley and hills.

Second, we identify opportunities for building the trail system on existing or planned infrastructure: bikeways, and rail, canal, and utility corridors.

Our concept for a Trail system in Tracy shows how these criteria for trail corridors and a sense of identity for each trail ("branding") might come together.

NORTH-SOUTH CONNECTION

Connects the Tracy Hills Open Space in the south to Legacy Fields and the future nature park to the north.

RAIL TRAIL TO DURHAM FERRY

Connects the northwest and southeast areas of town, heading toward Durham Ferry. Downtown is the central node.

EAST-WEST CONNECTION

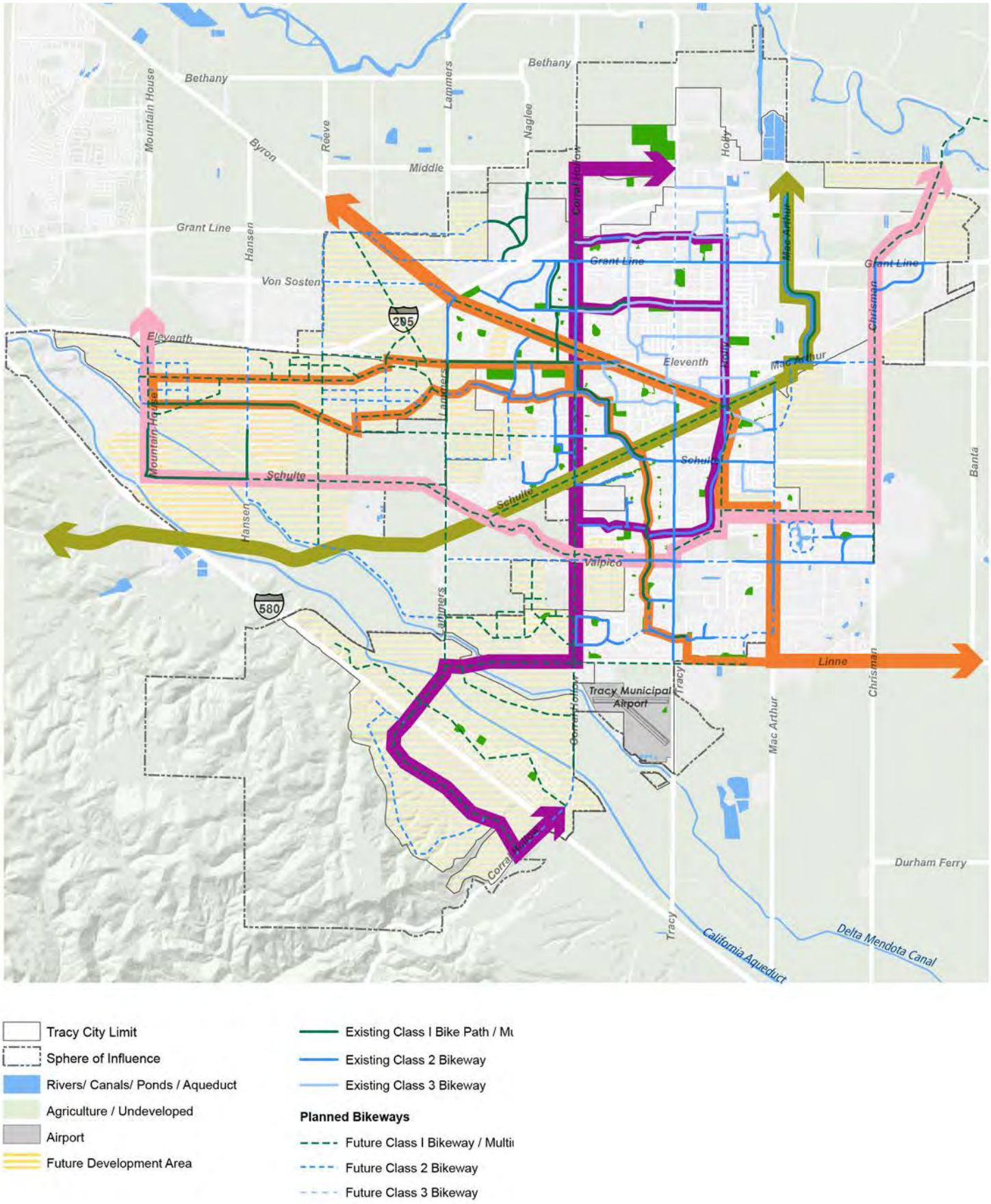
Connects the Old River to the route to Mountain House, using the irrigation canal easements along the way.

RAIL TRAIL TO RIVER

Perpendicular to the first rail trail, this connects the Old River to the Patterson Pass. Downtown is the central node.

Figure 5-3

Conceptual Trail Network



11F. Signage for Wayfinding, Interpretation, and Identity

Signage orients trail users to the trail system, communicates rules and precautions, provides directional guidance, and interprets the landscape. Signage also helps to create an overall identity for the trail system. Wayfinding signage will be especially critical at junctions and at major intersections and trail turning points.

The City will develop branding and a wayfinding and signage program for the trail system. Individual trails and trail systems may also have distinguishing trail signage which should be harmonized with overall trail system signage to the extent possible.

11G. Safety on Trails

It is critical that trails are designed and managed in a way that promotes safety. Trail safety will be ensured in the following ways:

Environmental Design. Safe parks can be achieved by creating natural surveillance and ensuring defensible space. This means maintaining good sight lines from public streets and buildings and creating clear entrances and clear boundaries.

Safe Crossings. Trails will also be designed to reduce hazards from vehicles and trains by establishing safe street and rail crossings and using planting and fencing as a buffer between trails and rails lines or roadways. Specific crossing design will be based on detailed, site-specific analysis.

Lighting and Barriers. Lighting and barriers are critical to keep trail users safe and provide clear









Tracy's trails will be distinguished by a signage program that orients trail users, interprets the environment, and helps provide an overall "brand identity."

delineation between trails and adjacent properties. Lighting should be placed at trail entrances and along trail segments where significant early morning and late evening use is expected.

11H. Comfort on Trails

Tracy's trail system will feature places to sit, bicycle racks, water fountains, waste receptacles, and places to gather in the shade. Seating should be placed periodically along trails and located to take advantage of views, shade trees, or other appealing conditions. Shaded gathering areas may be created at trailheads and scenic locations. Bike racks, water fountains, and waste receptacles should be placed at trail entrances.

TRAIL DESIGN GUIDELINES

Identity

T-1 Establish and follow a baseline vocabulary for attractive, well-designed, commonly placed site elements for standard, system-wide identity. Baseline elements include signage and furnishings.

T-2 Working within that overall system identity, develop distinct themes for each trail to establish a unique character. Themes may be expressed through signage, custom furnishings, and plant selections.

T-3 Historic and environmental interpretive elements should be included to contribute to trail character.

Trail Surface and Cross-Section

T-4 Off-street shared use (pedestrians, bikes, and other non-motorized use) trails should generally have the following basic design characteristics:

- Paved (asphalt or compacted AB) trail.
- Preferred width of 16', including two shared 6' travel lanes and two 2' shoulders.
- 10'-12' trail width acceptable where context requires.
- Opportunity zones for amenities in additional 4' right-of-way where possible.

See Figure 5-3 for typical trail cross-sections.

T-5 Trails should be a minimum of 10 feet wide to accommodate maintenance and emergency vehicles, or 12 feet in areas requiring storm drainage maintenance equipment.

T-6 The Bikeways Master Plan contains more detailed guidance and specifications for bike facilities, street crossings, sidewalks and paths adjacent to roadways. These paths will be an integral part of Tracy's trail system.

Trail Entry and Access

T-7 Provide trail access points that give a sense of arrival and encourage use, including accent planting and attractive signage consistent with City standards.

T-8 Use universal design principles to facilitate access and movement onto and along trails for people of all ages and abilities.

T-9 Include secure bicycle parking at all destinations along trails, and at trail amenity zones.

T-10 Maintain good sight lines from public streets and buildings and create clear entrances and clear boundaries, following principles of Crime Prevention through Environmental Design (CPTED).

T-11 Establish safe street and rail crossings, following guidelines established in the Bikeways Master Plan. Specific crossing design will be based on detailed, site-specific analysis.

Edges, Buffers and Setbacks

T-12 Trails along active rail lines should be set back a minimum of 26 feet from the centerline of the nearest track. Within this setback, a vegetated buffer backed by a safety barrier that prevents access should be provided.

T-13 Trails along irrigation canals should be set back from the top of the canal by at least four feet, with a safety barrier preventing access but allowing views to the canal.

T-14 Trails along streets should be set back according to guidelines provided in the Bikeways Master Plan.

T-15 Through placement of amenities and use of planting and lighting mitigation techniques, design trails in a way that minimizes impacts such as noise and lighting on neighboring properties.

Organization of Trail Elements

T-16 Trail alignment and plantings should be designed to optimize visibility, to allow for natural surveillance among users and minimize conflicts between bikes and pedestrians.

T-17 Include amenities along the trail at intervals that ensure user comfort. Opportunities to sit or lean should be provided at least every 1/4-mile. Shaded areas with seating should be provided at least every 1 mile. These amenity zones should be located to take advantage of hospitable conditions including shade, views, and sound.

T-18 Locate permanent restrooms and drinking fountains where trails intersection with City parks (see also Park Design Guidelines.)

Features and Amenities

T-19 Provide a diversity of trail amenities that attract and support different types of users, including recreational users, commuters, children and seniors.

T-20 Ensure that at least 50% of seating and picnic areas are shaded, either through natural tree canopy or installed shade structures (from at least 11 am – 4 pm during summer months).

T-21 Select all paving, site furnishing, and landscape materials based on durability as well as aesthetic value.

T-22 Ensure that proposed trail design and construction, including trail amenities, are consistent with City design detail and specifications.

T-23 Trails and amenities shall be accessible to all users and abilities and comply with current state and national design standards that meet or exceed the requirements of the Americans with Disabilities Act (ADA) Standards for Accessible Design and the California Building Code. Trails, paths and nature walk areas, or portions of them, shall be constructed with gradients permitting at least partial use by wheelchair occupants. Nature trails and similar educational and informational areas shall be accessible to individuals with vision impairments by the provision of rope guidelines, raised Arabic numerals and symbols, or other similar guide and assistance devices.

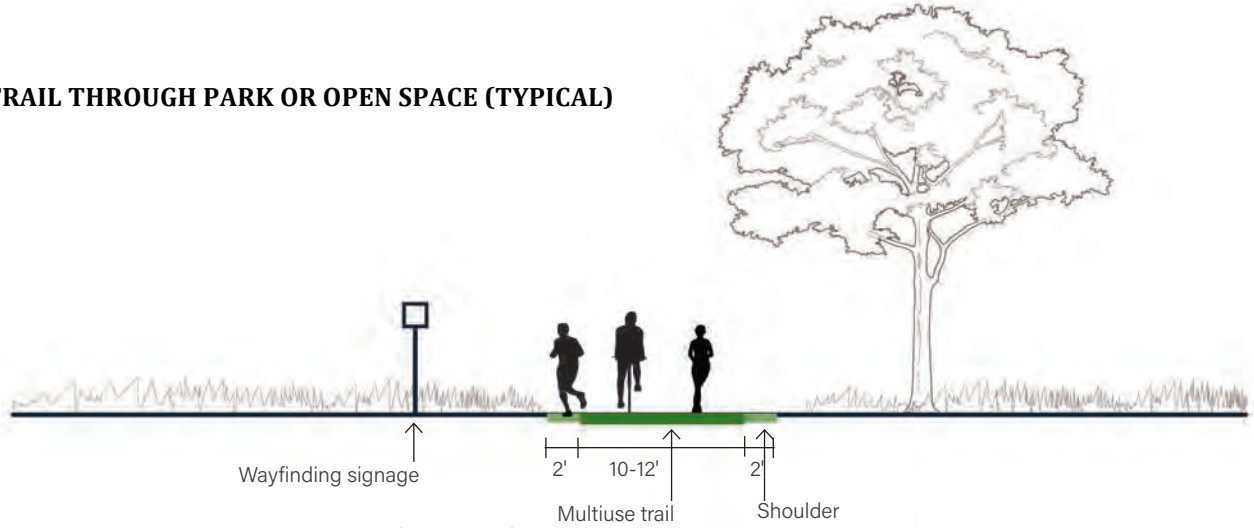
Lighting and Fencing

T-24 Use lighting to promote public safety and security, following the principles of Crime Prevention through Environmental Design (CPTED).

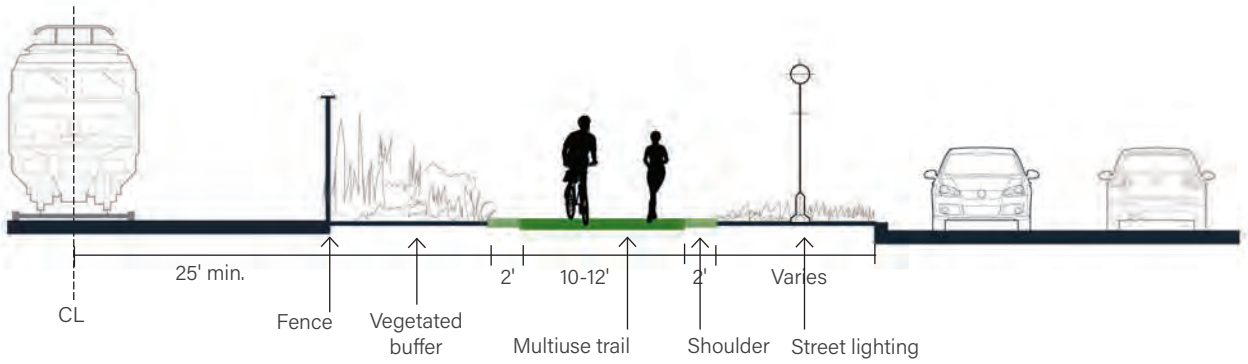
T-25 Where appropriate, provide lighting to extend the use of trails at night.

Figure 5-4**Off-Street Trail Cross-Sections**

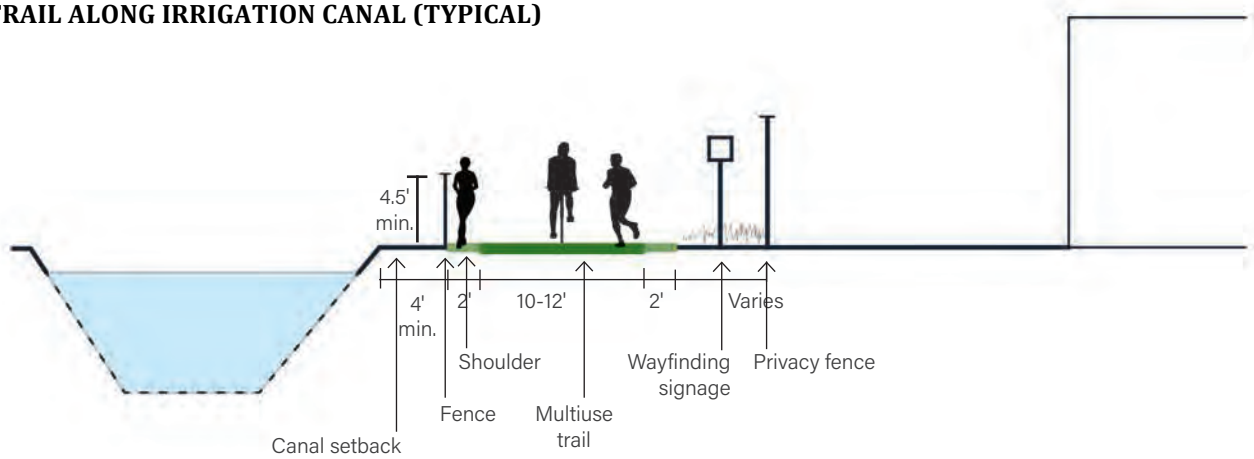
TRAIL THROUGH PARK OR OPEN SPACE (TYPICAL)



TRAIL ALONG ACTIVE RAIL LINE (TYPICAL)



TRAIL ALONG IRRIGATION CANAL (TYPICAL)



Trail cross-sections are conceptual and generalized.. Trail development will require detailed design .

T-26 Design lighting systems and select fixtures to minimize light pollution/spillage.

T-27 Require energy-efficient technology when replacing existing or installing new lighting, including light elements. Use "smart" technology when possible, i.e. lighting systems that adjust automatically depending upon user patterns in buildings and parks.

T-28 Barriers and fencing must successfully ensure privacy and prevent access, while also supporting a good trail experience.

- Trails should be separated from the back yards of private property by plantings backed by fences, which should be eight feet in height. Plantings should be minmal to reduce water use and maintenance costs.
- Trails should be set back and buffered from rail lines and arterial roadways as defined in the Bikeways Master Plan and in Policy 10c.
- Trails should be separated from irrigation canals by a barriers that meet code requirements while preserving views of the canal.

Signage

T-29 Provide standard trailhead signage that identifies the trail name and promotes a positive and consistent identity for Tracy's trail system.

T-30 Place a standard, legally confirmed set of rules in a visible and secondary location that does not negatively impact the welcoming nature of the trail entry.

T-31 Establish a standardized wayfinding system to clearly identify trail route and destinations as well as nearby civic, historic, cultural or ecological landmarks.

T-32 Trail signage will:

- Vary by context. Signs at trailheads and along off-street and on-street trail segments will be designed and scaled for their setting and the user groups they serve.
- Be legible and accessible. Signage will use lettering sized for visibility, and include translation where needed.
- Leverage other features. Signage may be mounted on street furnishings or painted on surfaces.
- Create identity. More than any other trail element, wayfinding signs produce identity for both the system and individual trail.
- Tell a story. Interpretive signage can tell us about native peoples, subsequent history, our environment, and our current experience.

Landscape

T-33 Preserve habitat and natural resources with trail development.

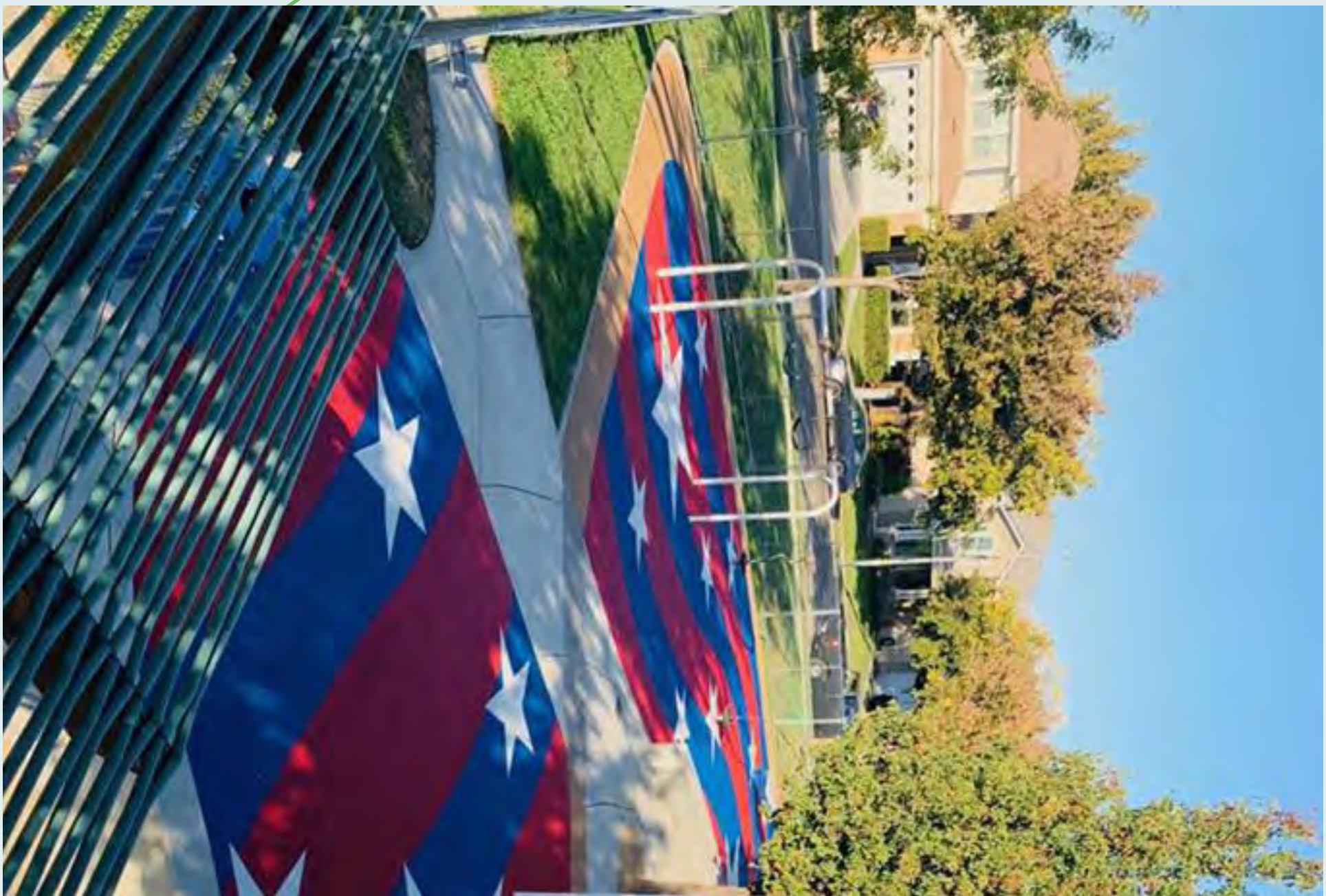
T-34 Follow all applicable design guidelines for landscape found in Chapter 3: Parks.

Facing page:
Livermore Valley trail



CHAPTER 06

IMPLEMENTATION





The Implementation chapter provides the bridge from goals and policies to actions. Here, we apply the goals and policies in the Plan to propose specific improvements to our parks system.

IN THIS CHAPTER:

- Implementation Framework
- Improving Existing Parks
- Building New Parks
- Recreation Amenity Needs
- Parks Planning and Development in Tracy
- Understanding the Cost of Parks
- Park Maintenance and Lifecycle Replacement
- Funding Strategy

IMPLEMENTATION FRAMEWORK

This chapter provides the bridge from goals and policies to actions. Here, we apply the goals and policies in the Plan to propose specific improvements to our parks system.

The chapter starts by defining three types of park improvements: critical, strategic, and visionary.

Next, the chapter summarizes the Plan's proposed park improvements by tier, by timing, and by funding source. Proposed improvements for each park in our system are summarized in Table 6-4.

Tracy will need additional parks as the city grows. The chapter summarizes future park needs, identifies parks that are already in the planning stages, and identifies areas where future parks would fill access gaps.

Tracy also needs additional recreation facilities and amenities. We summarize facility needs, based on the Plan's standards, and describe how to relate facility and amenity needs with park improvements.

Finally, we look at the costs of improvements, and a funding strategy to achieve our goals. The funding strategy applies not just to capital improvements but also to programming, maintenance and operations.

Implementing this Plan successfully will require coordination across City departments, and annual monitoring of progress.

PARK IMROVEMENT TIERS



Tier A



Tier B



Tier C

IMPROVING EXISTING PARKS

THREE TIERS

Park and facility improvements can be understood in three "tiers". The first tier is focused on maintenance, the second on strategic enhancements, and the third on new or transformed parks.

Tier A: Critical Park Improvements – Maintaining What We Have

Tier A includes park improvements critical to keep the park system functioning. They include routine maintenance, repairs, repainting, replanting, "lifecycle replacement" (including infrastructure replacement such as irrigation systems as well as replacement of park amenities as they reach the end of their useful life), and replacement of inaccessible amenities with accessible amenities to remove barriers to access for people with disabilities. The intention of this category is to make the most of existing resources with the primary goal being for the City to maintain services.

The actions associated with this category are expected to be funded through tax dollars and/or special assessments where applicable.

Lifecycle replacement is considered an annual value to be included in Tracy's budget and the budgets for Landscape Maintenance Districts (LMDs) and Community Facility Districts (CFDs). Total replacement value is amortized over the life of the facility.

Tier B: Strategic Park Improvements – Improving What We Have

Strategic park improvements may include site, amenity, and facility upgrades. This includes strategically enhancing existing programs, beginning new alternative programs, adding new positions, or making other strategic changes that would require additional operational or capital funding.

The City would evaluate and analyze potential sources of additional revenue for these improvements, including but not limited to Measure V funds, capital bond funding, partnerships, program income, grants, and existing or new taxes and/or special assessments.

Tier C: "Visionary" Park Improvements – Developing New Opportunities

Visionary park improvements include comprehensive park renovations, acquisitions, and the creation of new parks. This category represents the complete set of services and facilities desired by the community. It is fiscally unconstrained but can help provide policy guidance by illustrating the ultimate goals of the community, and by providing a long- range look to address future needs and deficiencies. Typically, Tier 3 improvements start with a park or facility-specific master plan to analyze conditions, explore the needs of the community, and design a new park.

Funding for visionary projects would be derived from partnerships, grants, private investments and new tax dollars, and/or special assessments.

PARK BY PARK

Tracy Staff and our Consultant team conducted a park-by-park assessment in August 2019, identifying the general condition of each site; issues pertaining to site access and use; and park-specific needs, wants, and aspirations communicated by members of the public during the Plan Update process.

The Plan identifies three priority levels and associated phasing: high priority (0- to 5-year), medium priority (5- to 10-year), and low priority (10- to 20-year) park improvements. Planned improvements for each of the City's parks are provided in table format.

A rough order-of-magnitude cost estimation of park improvements finds a total of approximately $56 million to $75 million in costs over the next 10 to 15 years, with costs spread across park tiers, implementation phases, and funding sources (Tables 6-1, 6-2, and 6-3). These cost estimates may not cover improvements identified in the City's ADA assessment.

A summary of park improvement recommendations for all parks is provided in Table 6-4.

Not all parks are included in the park-by-park table. Improvements to parks not specifically identified are covered by the Citywide Improvements category.

Table 6-1
Estimated Improvement Costs by Tier

TIER	ESTIMATED TOTAL COST
Tier A: Critical	$7,435,000 to $10,202,000
Tier B: Strategic	$14,200,000 to $18,125,000
Tier C: Visionary	$34,846,000 to $46,444,000
TOTAL	**$56,481,000 to $74,771,000**

Table 6-2
Estimated Improvement Costs by Timing

TIMING	ESTIMATED TOTAL COST
Short-Term (Years 1-5)	$43,135,000 to $57,205,000
Mid-Term (Years 6-10)	$11,672,500 to $15,055,000
Long-Term (Years 11+)	$1,673,500 to $2,511,000
TOTAL	**$56,481,000 to $74,771,000**

Table 6-3
Estimated Improvement Costs by Funding Source

FUNDING SOURCE	ESTIMATED TOTAL COST
General Fund	$44,966,000 to $58,667,000
LMD Zone 3	$957,500 to $1,389,000
LMD Zone 7	$682,500 to $915,000
LMD Zone 9	$2,290,000 to $3,500,000
LMD Zone 13	$1,060,000 to $1,470,000
LMD Zone 14	$225,000 to $270,000
LMD Zone 15	$675,000 to $810,000
LMD Zone 16	$300,000 to $360,000
LMD Zone 17	$487,500 to $585,000
LMD Zone 21	$75,000 to $90,000
LMD Zone 24	$525,000 to $630,000
LMD Zone 26	$562,500 to $675,000
LMD Zone 29	$325,000 to $480,000
LMD Zone 30	$75,000 to $90,000
LMD Zone 35	$75,000 to $90,000
Various (Citywide)	$3,200,000 to $4,750,000
TOTAL	**$56,481,000 to $74,771,000**

Table 6-4

Park-by-Park Improvements

** **Condition Rating:** 1-5 (poor to excellent) // **Assumptions:** (1) Site Specific Master Plan LOW END - $75,000, (2) Site Specific Master Plan HIGH END - $150,000, (3) Redevelopment Costs - LOW END - $200,000 per acre, (4) Redevelopment Costs - HIGH END - $300,000 per acre*

PARK	PARK TYPE	MAINTENANCE FUNDING	AREA (AC)	CONDITION RATING (1-5) *	IMPROVEMENT TIER	IMPROVEMENT RECOMMENDATION	TIME FRAME	ESTIMATED COST
TIER C: VISIONARY PROJECTS (NEW/MAJOR UPGRADE)								
Ritter Family Ball Park	Sports Complex	General Fund	10.82	2	C	Site Specific Master Plan and redevelopment	Short-term (1-5 years)	$20,000,000 to $25,000,000
El Pescadero Park	Community	General Fund	14.62	3	C	Site Specific Master Plan and redevelopment	Short-term (1-5 years)	$3,000,000 to $5,000,000
Lincoln Park	Community	General Fund	13.74	4	C	Prop 68 Grant Appliation submitted for Site Specific Master Plan and redevelopment of park	Short-term (1-5 years)	$8,000,000 oo $10,000,000
Alden Park	Neighborhood	General Fund	4.46	3	C	Site Specific Master Plan and redevelopment	Short-term (1-5 years)	$900,000 to $1,500,000
American Legion Park	Mini	General Fund	1.27	2	C	Site Specific Master Plan and redevelopment	Long-term (11+ years)	$335,000 to $540,000
Fine Family Park	Mini	General Fund	0.64	4	C	Site Specific Master Plan and redevelopment	Long-term (11+ years)	$91,000 to $174,000
Fabian Family Park	Mini	LMD Zone 3	1.01	3	C	Site Specific Master Plan and redevelopment	Mid-term (6-10 years)	$275,000 to $450,000
New Harmon Park	Mini	LMD Zone 3	0.51	3	C	Site Specific Master Plan and redevelopment	Short-term (1-5 years)	$175,000 to $300,000
Naomi Rippin Park	Mini	LMD Zone 7	0.56	2	C	Site Specific Master Plan and redevelopment	Short-term (1-5 years)	$195,000 to $330,000
Albert Emhoff Park	Mini	LMD Zone 9	0.48	2	C	Site Specific Master Plan and redevelopment	Short-term (1-5 years)	$175,000 to $300,000
Barbara Fitzpatrick Park	Mini	LMD Zone 9	0.46	2	C	Site Specific Master Plan and redevelopment	Short-term (1-5 years)	$175,000 to $300,000
Fred Icardi Park	Mini	LMD Zone 9	0.40	3	C	Site Specific Master Plan and redevelopment	Short-term (1-5 years)	$155,000 to $270,000
Mount Diablo Park	Mini	LMD Zone 9	0.41	2	C	Site Specific Master Plan and redevelopment	Short-term (1-5 years)	$155,000 to $270,000
Mount Oso Park	Mini	LMD Zone 9	0.43	2	C	Site Specific Master Plan and redevelopment	Short-term (1-5 years)	$155,000 to $270,000
Tracy Press Park	Mini	LMD Zone 9	0.52	4	C	Site Specific Master Plan and redevelopment	Mid-term (6-10 years)	$175,000 to $300,000
Valley Oak Park	Mini	LMD Zone 9	0.50	3	C	Site Specific Master Plan and redevelopment	Mid-term (6-10 years)	$175,000 to $300,000
Souza Family Park South	Mini	LMD Zone 13	2.30	3	C	Site Specific Master Plan and redevelopment	Mid-term (6-10 years)	$535,000 to $840,000
John Kimball Park	Mini	LMD Zone 29	0.52	3	C	Site Specific Master Plan and redevelopment	Short-term (1-5 years)	$175,000 to $300,000
TOTAL VISIONARY PROJECTS: $34,846,000 to $46,444,000								

Table 6-4 (continued)

Park-by-Park Improvements

PARK	PARK TYPE	MAINTENANCE FUNDING	AREA (AC)	CONDITION RATING (1-5) *	IMPROVEMENT TIER	IMPROVEMENT RECOMMENDATION	TIME FRAME	ESTIMATED COST
TIER B: STRATEGIC PROJECTS (UPGRADE AND RENOVATION)								
Tracy Sports Complex	Sports Complex	General Fund	27.02	4	B	Renovate and upgrade concession building and meeting room. Site improvements including new restroom for east side of park, playground renovations, parking lot renovations, removal of ADA barriers, landscaping, site furnishing replacements and fencing. Additionally, make safety upgrades to ballfields including installation of 420 linear feet of 70'-tall netting and removal of 75 linear feet of 30'-tall netting.	Short-term (1-5 years)	$1,500,000 to $2,500,000
Dr. Powers Park	Community	General Fund	11.30	4	B	Mini master plan to respect recent improvements: Rethink walking loop, reprogram as amphitheater, replace irrigation system, incorporate ADA accessible disc golf warm up area for potential disc golf course.	Mid-term (6-15 years)	$375,000 to $450,000
Henry Barboza Park	Neighborhood	General Fund	3.27	2	B	Install sport court lighting at basketball and tennis courts.	Mid-term (6-10 years)	$75,000 to $90,000
Clyde Bland Park	Neighborhood	General Fund	8.67	4	B	Expand baseball field to 90' bases, consider disc golf course around perimeter, install pathway lighting and sport court lighting, replace playground, make ADA, site furnishing and irrigation upgrades.	Mid-term (6-10 years)	$2,250,000 to $2,700,000
Joseph Ceciliani Park	Neighborhood	General Fund	6.50	4	B	Install sport court lighting at tennis courts, new picnic area, replant courtyard area, improve asphalt trail, install splash pad near playgrounds and renovate volleyball court, playground, and parking lot.	Short-term (1-5 years)	$1,300,000 to $1,900,000
Galli Family Park	Neighborhood	General Fund	4.63	4	B	Install shade over bocce courts, replace playground/climbing wall, make ADA upgrades, replace site furnishings, install pathway and sport court lighting.	Mid-term (6-10 years)	$750,000 to $900,000
Frank Hoyt Park	Neighborhood	General Fund	6.33	4	B	Install pathway and sport court lighting, upgrade irrigation, new ADA-accessible picnic area with shade structure, renovate horseshoe pits, new site furnishings, etc. Renovate/repair wooden shade structures.	Mid-term (6-10 years)	$450,000 to $540,000

Table 6-4 (continued)

Park-by-Park Improvements

PARK	PARK TYPE	MAINTENANCE FUNDING	AREA (AC)	CONDITION RATING (1-5)*	IMPROVEMENT TIER	IMPROVEMENT RECOMMENDATION	TIME FRAME	ESTIMATED COST
Robert Kenner Park	Neighborhood	General Fund	6.01	4	B	Install sport court lighting at basketball and tennis courts, new walking loop around basin and turn basin into nature area, covert areas to drought tolerant plantings, renovate or remove volleyball, rethink raised planter area and replace with low water landscaping. Consider playground replacement and ADA upgrades.	Short-term (1-5 years)	$1,800,000 to $2,100,000
William Larsen Park	Neighborhood	General Fund	5.10	4	B	Install sport court lighting at tennis courts, upgrade fitness area, rethink sculpture with new focal point and landscape beautification.	Short-term (1-5 years)	$300,000 to $360,000
Edgar Thoming Park	Neighborhood	General Fund	5.31	4	B	Renovate tennis and basketball courts including surfacing, lighting and fencing upgrades. Upgrade fitness stations along the walking loop, LED light conversions, add new picnic area, replace site furnishings, minor renovation of restroom building, new booster pump and landscaping.	Short-term (1-5 years)	$500,000 to $600,000
Ken Yasui Park	Neighborhood	General Fund	3.10	3	B	Add walking loop.	Long-term (11+ years)	$75,000 to $90,000
Dorothy Zanussi Park	Neighborhood	General Fund	4.99	4	B	Replace gazebo with steel version, rethink playground areas and combine into one area, improve ADA accessibility at picnic area, install new amenity like a sport court.	Mid-term (6-10 years)	$750,000 to $900,000
William Adams Park	Neighborhood	LMD Zone 15	4.69	4	B	Add sport court lighting to tennis courts.	Mid-term (6-10 years)	$75,000 to $90,000
Don Cose Park	Neighborhood	LMD Zone 15	3.79	3	B	Replace playground equipment, install new safety surfacing, install new sport court lighting at basketball court.	Short-term (1-5 years)	$525,000 to $630,000
Bill Schwartz Park	Neighborhood	LMD Zone 15	3.42	3	B	Add sport court lighting to dual purpose court.	Mid-term (6-10 years)	$75,000 to $90,000
Richard Hastie Park	Neighborhood	LMD Zone 21	3.43	4	B	Add sport court lighting to basketball court, add pathway lighting.	Mid-term (6-10 years)	$75,000 to $90,000
Joseph Tiago Park	Neighborhood	LMD Zone 24	4.02	3	B	New playground equipment, park lighting, site furnishings, landscaping.	Short-term (1-5 years)	$525,000 to $630,000
Vernor Hanson Park	Neighborhood	LMD Zone 26	3.46	4	B	Add sport court lighting to basketball court. Add walking loop.	Mid-term (6-10 years)	$112,500 to $135,000

Table 6-4 (continued)

Park-by-Park Improvements

PARK	PARK TYPE	MAINTENANCE FUNDING	AREA (AC)	CONDITION RATING (1-5) *	IMPROVEMENT TIER	IMPROVEMENT RECOMMENDATION	TIME FRAME	ESTIMATED COST
Robert Kellogg Park	Neighborhood	LMD Zone 29	4.08	4	B	Consider conversion of water feature to dry stream bed, add pickleball striping to tennis court, add lighting to tennis and basketball courts, add pathway lighting.	Mid-term (6-10 years)	$150,000 to $180,000
A.R. Glover Park	Mini	General Fund	2.14	3	B	Install sport court lighting at basketball court.	Short-term (1-5 years)	$475,000 to $675,000
McDonald Park	Mini	General Fund	1.46	4	B	Retrofit street-type light poles to light hand ball court.	Mid-term (6-10 years)	$15,000 to $18,000
McCray Family Park	Mini	LMD Zone 3	0.80	4	B	Add shade over play area.	Long-term (11+ years)	$22,500 to $27,000
Tom Slayter Park	Mini	LMD Zone 3	0.49	4	B	Add accessible seating area, remove non-accessible picnic tables and maintenance-intensive shade structures.	Mid-term (6-10 years)	$112,500 to $135,000
Souza Family Park North	Mini	LMD Zone 13	1.59	3	B	Add pathway lighting, replace play equipment, improve ADA accessibility, landscaping and site furnishings.	Mid-term (6-10 years)	$525,000 to $630,000
J. Kingsley Chadeayne Park	Mini	LMD Zone 14	1.72	4	B	Add pickleball court to replace horseshoes.	Mid-term (6-10 years)	$150,000 to $180,000
Joan Sparks Park	Mini	LMD Zone 14	1.75	4	B	Add sport court lighting.	Mid-term (6-10 years)	$75,000 to $90,000
Daniel Busch Park	Mini	LMD Zone 16	2.41	4	B	Add loop path, improve ADA accessibility, add sport court lighting and install new site furnishings.	Mid-term (6-10 years)	$300,000 to $360,000
Florence Stevens Park	Mini	LMD Zone 17	1.42	4	B	Renovate playground, rehab sport court including replacement of equipment, and addition of lighting. Add pathway lighting throughout greenway, replace site furnishings, make landscape enhancements and drought tolerant conversions, ADA barrier removal/ improvements, and enhance pedestrian crossings at street intersections.	Short-term (1-5 years)	$487,500 to $585,000
John Erb Park	Mini	LMD Zone 26	2.53	4	B	Add sport court lighting.	Mid-term (6-10 years)	$75,000 to $90,000
Jim Raymond Park	Mini	LMD Zone 30	1.49	4	B	Add lighting to basketball court.	Mid-term (6-10 years)	$75,000 to $90,000
Jack Fisher Park	Mini	LMD Zone 35	2.00	4	B	Add lighting to basketball court.	Mid-term (6-10 years)	$75,000 to $90,000
Civic Center Plaza	Special Use	General Fund	2.93	NR	B	Master Plan to provide opportunities for recreation for surrounding residential areas and for employees.	Long-term (11+ years)	$150,000 to $180,000
TOTAL SUSTAINABLE PROJECTS: $14,200,000 to $18,125,000								

Table 6-4 (continued)

Park-by-Park Improvements

PARK	PARK TYPE	MAINTENANCE FUNDING	AREA (AC)	CONDITION RATING (1-5) *	IMPROVEMENT TIER	IMPROVEMENT RECOMMENDATION	TIME FRAME	ESTIMATED COST
TIER A: CRITICAL PROJECTS (REPAIR EXISTING)								
Arnulfo Plasencia Fields	Sports Complex	General Fund	20.96	3	A	Parking lot replacement; street frontage improvements.	Mid-term (6-10 years)	$750,000 to $900,000
Gretchen Talley Park	Community	General Fund	11.24	5	A	Replace play equipment.	Mid-term (6-10 years)	$350,000 to $500,000
Veterans Park	Community	General Fund	15.80	4	A	Renovate parking lot, address ADA barriers, upgrade sport court and pathway lighting, minor renovations at sport courts and skate park, landscaping. Convert halogen lights to LED at ballfield.	Short-term (1-5 years)	$400,000 to $600,000
Marlow Brothers Park	Neighborhood	LMD Zone 26	3.87	4	A	Replace play equipment.	Mid-term (6-10 years)	$375,000 to $450,000
George Kelly Park	Mini	LMD Zone 3	0.75	2	A	Replace playground, new shaded picnic area, drought tolerant plantings, rehab sports court.	Mid-term (6-10 years)	$350,000 to $450,000
Dorlane Thrasher Park	Mini	LMD Zone 3	1.18	3	A	Turf renovation and backstop renovation.	Mid-term (6-10 years)	$22,500 to $27,000
Bailor/Hennan Park	Mini	LMD Zone 7	0.48	2	A	Replace playground, renovate shade structure, resurface basketball court.	Short-term (1-5 years)	$487,500 to $585,000
Evelyn Costa Park	Mini	LMD Zone 9	0.53	3	A	Resurface basketball court.	Mid-term (6-10 years)	$75,000 to $90,000
Dorothy Evans Park	Mini	LMD Zone 9	1.10	3	A	Resurface basketball court, replace playground, upgrade all amenities to City standards (trash bins, shade structure, tables, benches, & drinking fountain).	Mid-term (6-10 years)	$575,000 to $750,000
Golden Spike Park	Mini	LMD Zone 9	0.50	4	A	Replace play equipment.	Short-term (1-5 years)	$375,000 to $450,000
Sister Cities Park	Mini	LMD Zone 9	0.50	3	A	Replace wooden structure.	Mid-term (6-10 years)	$100,000 to $200,000
Front Street Plaza	Special Use	General Fund	2.20	NR	A	Planting renovation; add recirculating system for splash pad.	Mid-term (6-10 years)	$375,000 to $450,000
Asset Management Plan	Various	Various	NA	NA	A	Field inventory and assessment of all assets including GPS digital logging.	Short-term (1-5 years)	$200,000 to $250,000

Table 6-4 (continued)

Park-by-Park Improvements

PARK	PARK TYPE	MAINTENANCE FUNDING	AREA (AC)	CONDITION RATING (1-5) *	IMPROVEMENT TIER	IMPROVEMENT RECOMMENDATION	TIME FRAME	ESTIMATED COST
Citywide Improvements (Short-term)[A]	Various	Various	NA	NA	A	Additional Lifecycle Replacement.	Short-term (1-5 years)	$3,500,000 to $5,000,000
Citywide Improvements (Mid-term) [A]	Various	Various	NA	NA	A	Additional Lifecycle Replacement.	Mid-term (6-10 years)	$3,500,000 to $5,000,000
Citywide Improvements (Long-term) [A]	Various	Various	NA	NA	A	Additional Lifecycle Replacement.	Long-term (11+ years)	$3,500,000 to $5,000,000
TOTAL CRITICAL PROJECTS: $7,435,000 to $10,202,000								

SOURCES: WRT, 2021; PROS, 2021; CITY OF TRACY, 2021.

NOTES:

A CITYWIDE IMPROVEMENTS ARE FURNITURE, FIXTURE AND EQUIPMENT REPLACEMENT NOT SPECIFICALLY IDENTIFIED FOR INDIVIDUAL PARKS, INCLUDING BUT NOT LIMITED TO: IRRIGATION SYSTEMS, TRASH CANS, SECURITY LIGHTING, PICNIC TABLES, BENCHES, SINKS/TOILETS IN RESTROOMS, FENCING, SIGNAGE, AND DRINKING FOUNTAINS. DEPARTMENT ALSO REQUIRES $150,000 ANNUALLY FOR STAFFING TO STRATEGICALLY MANAGE PARK ASSETS.

Figure 6-1

Conceptual Design for a Mini Park (Fine Family Park)

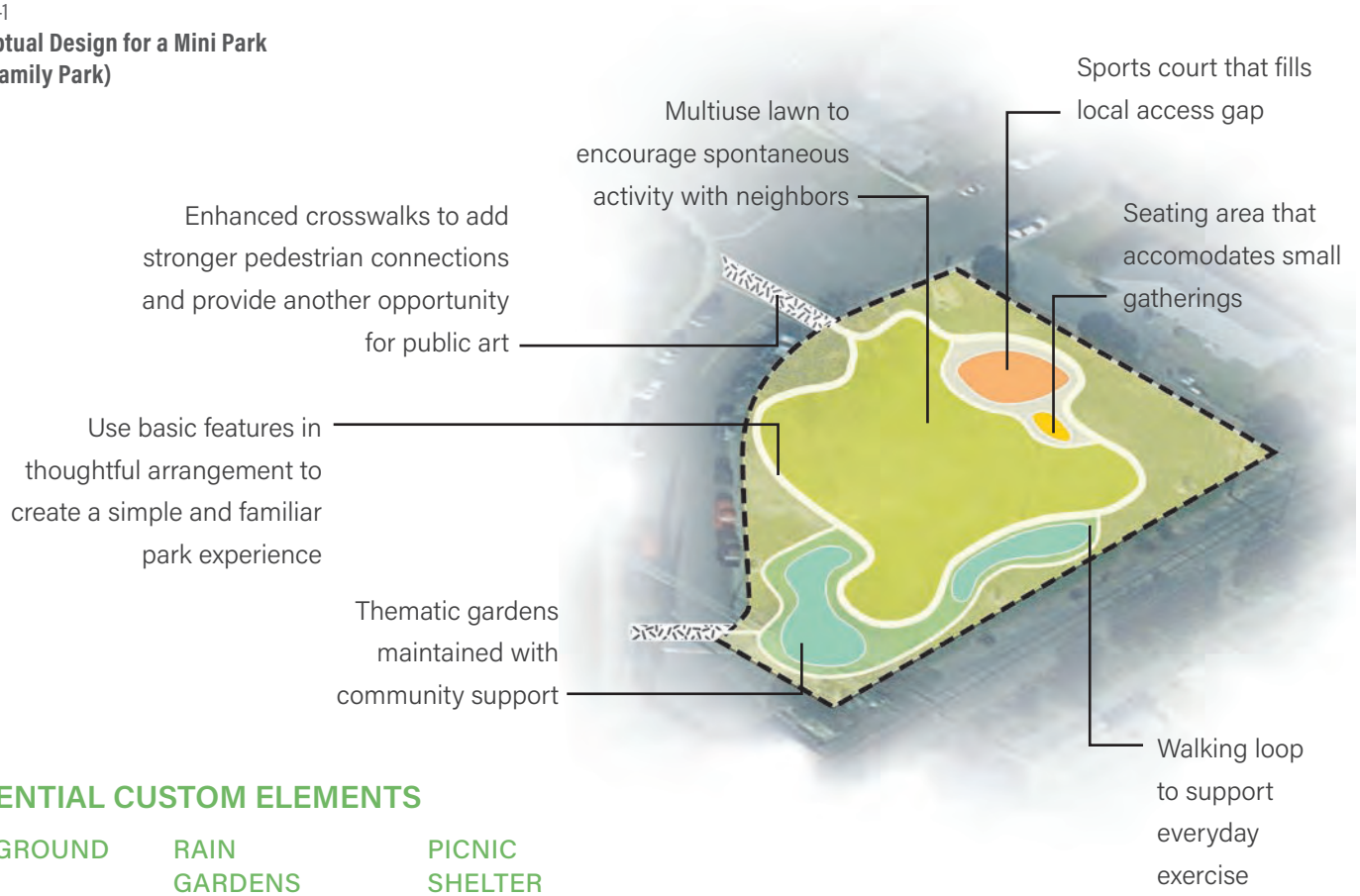
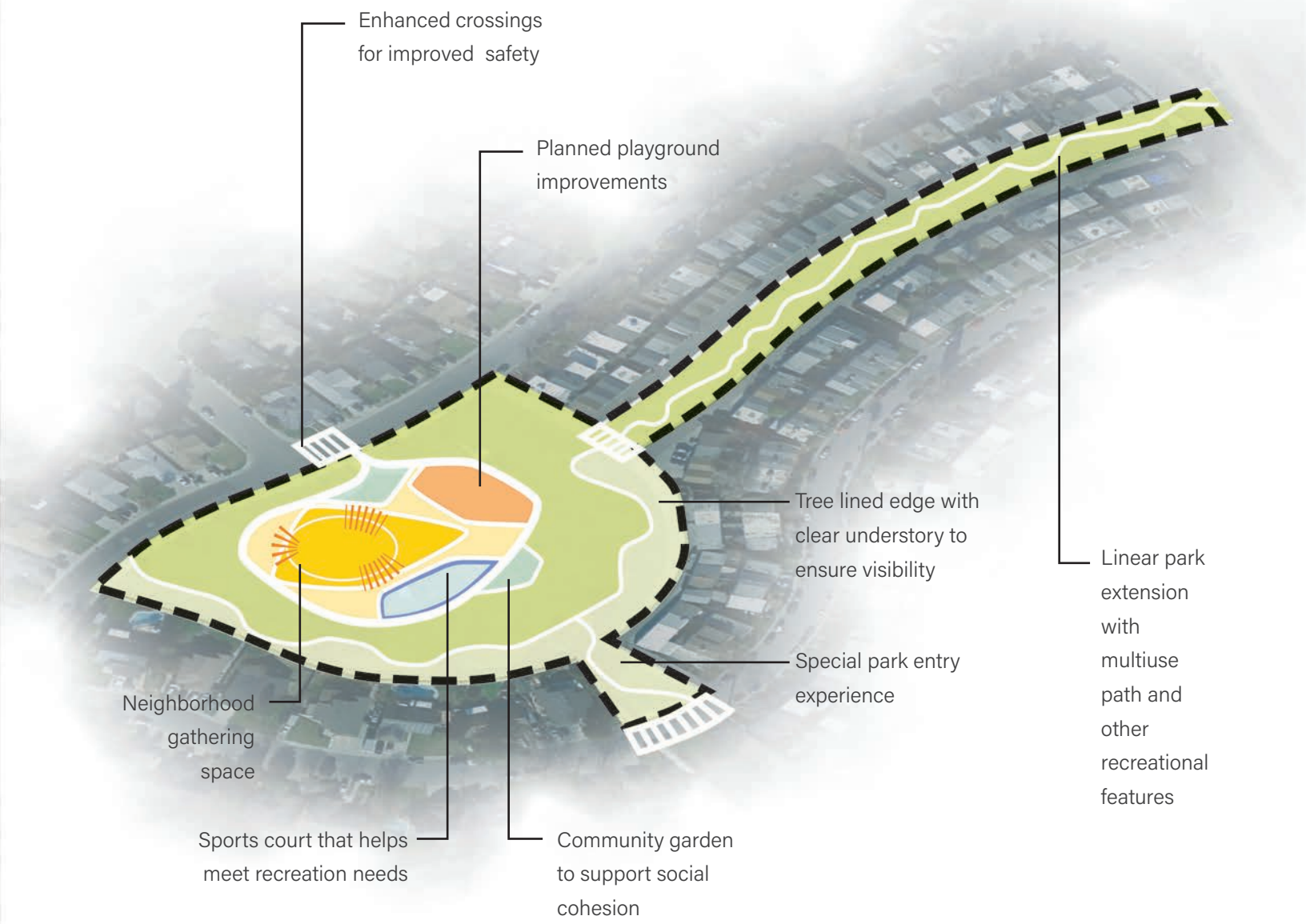


Figure 6-2
Conceptual Design for a Neighborhood Park (Alden Park)



It is a challenge to apply design standards to existing parks when we seek to adapt and update them. These diagrams show concepts for how existing parks could be adapted to embody the spirit of the Plan's goals.

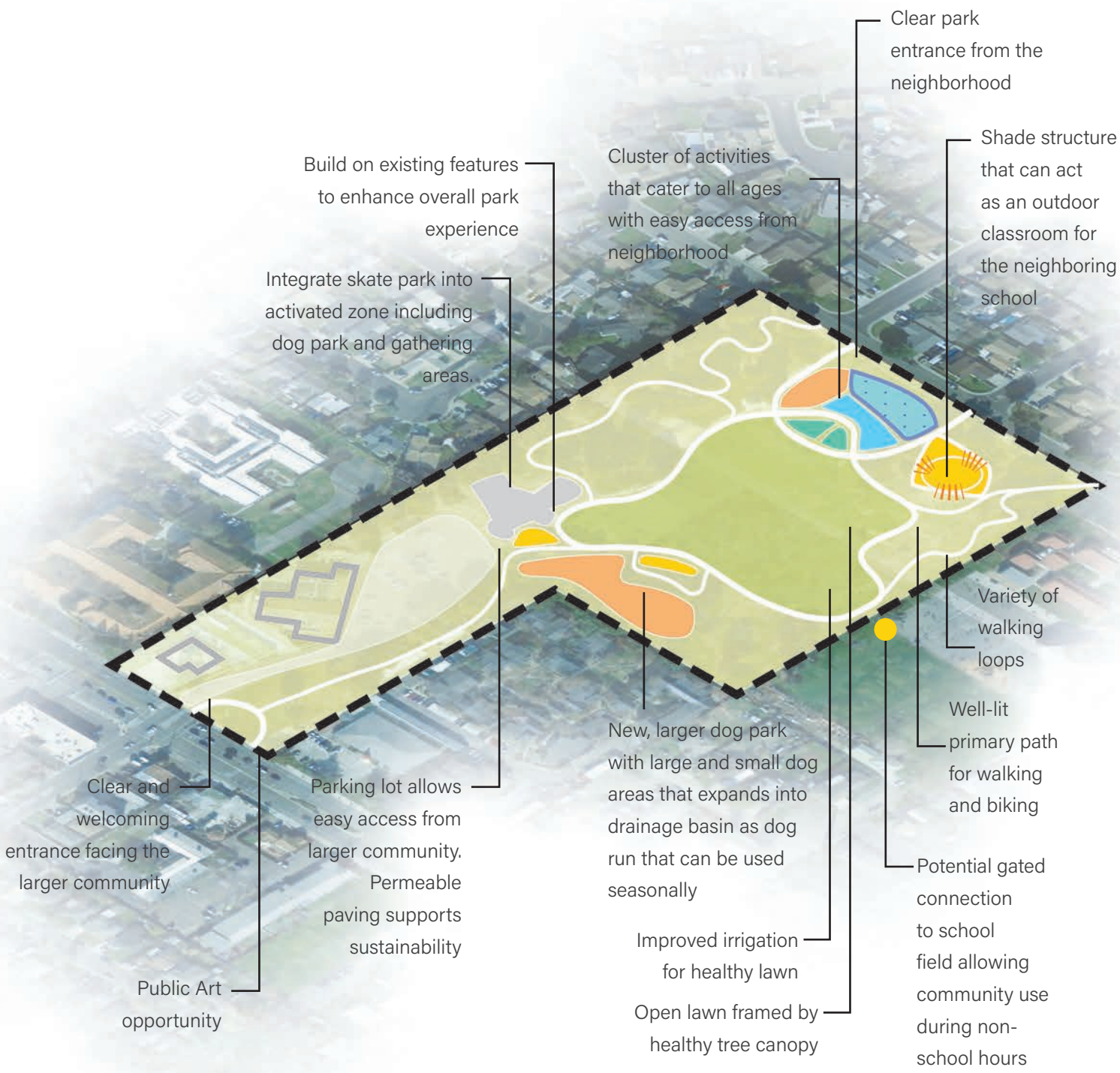
POTENTIAL SPECIAL ELEMENTS

PICKLEBALL COURT

COMMUNITY GARDEN

LARGE SHADE STRUCTURE

Figure 6-3
Conceptual Design for a Community Park (El Pescadero Park)



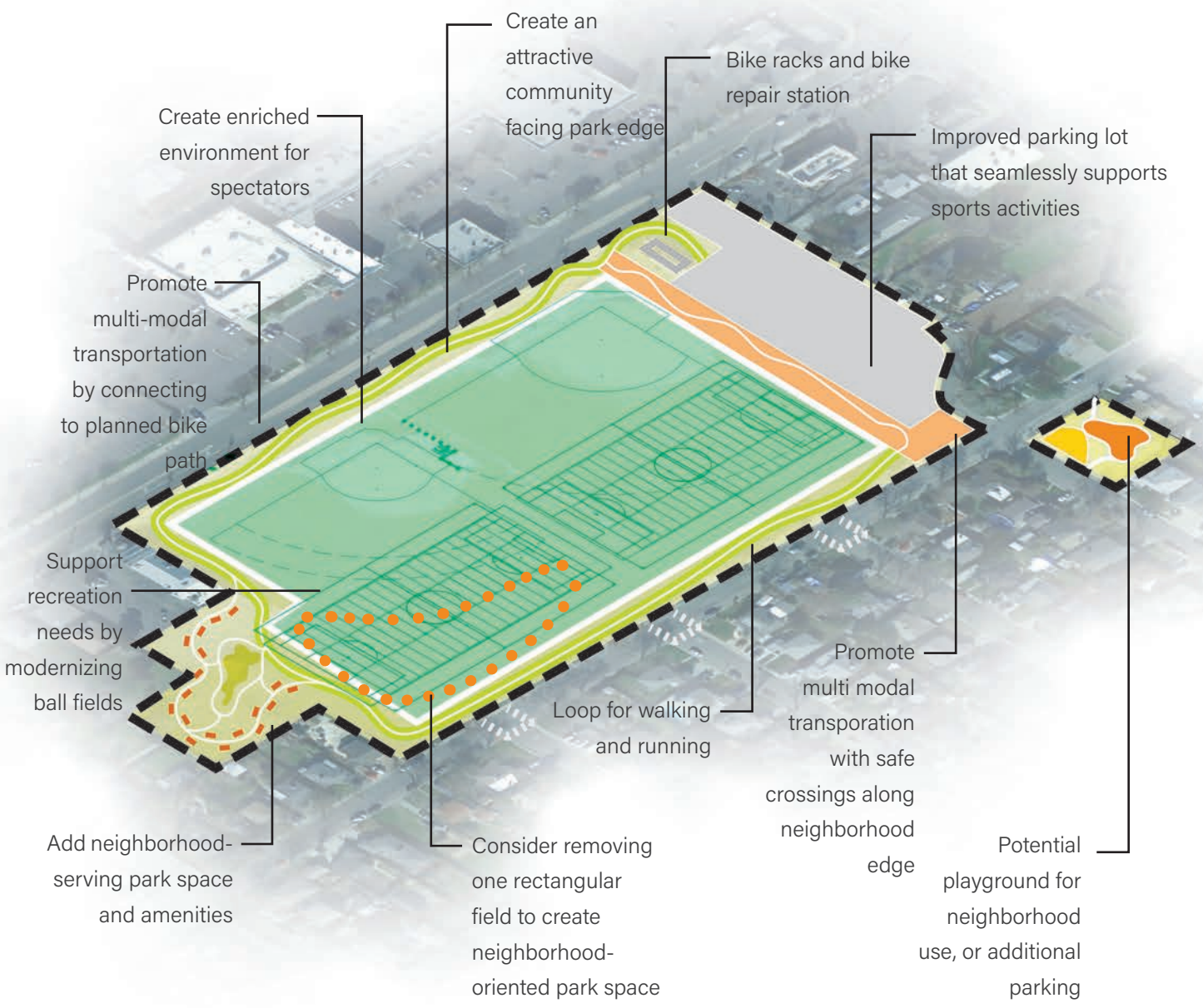
POTENTIAL SPECIAL ELEMENTS

USE OF ALTERNATIVE ENERGY SOURCES

WORKOUT STATIONS ALONG WALKING LOOP

SAND VOLLEYBALL COURT

Figure 6-4
Conceptual Design for a Sports Complex (Ritter Family Ball Park)



POTENTIAL SPECIAL ELEMENTS

SENSORY GARDEN

NEIGHBORHOOD EVENT PLAZA

NATURE PLAY IN ADJACENT LOT

BUILDING NEW PARKS

On the Drawing Board

The City of Tracy is planning the expansion of Gretchen Talley Park as a community park; the completion of Phase 1 and Phase 2 of the Legacy Fields sports complex; the creation of an Aquatics Complex; a multi-generational recreation center; and the Tracy Nature Park. These improvements would bring an additional 220 acres of park land.

The TOD Plan also provides a template for the creation of a network of plazas, paseos, and pocket parks to serve a growing and vital downtown area (see Chapter 2).

Future Development Areas

As of this writing, some 63 acres of new park land is planned as part of specific plans and development proposals for Avenues, Ellis, Hillview, Rocking Horse, Tracy Hills, and Tracy Village. Private parks are planned at Cordes Ranch. These parks are summarized in Chapter 2.

Filling Access Gaps

New parks in future development areas will be required to provide 4 acres of new park land per 1,000 residents, allocated, located, and designed according to the policies of this Plan.

In addition to future developer-provided parks in urban infill and expansion areas, the City will pursue land acquisition and park development opportunities in areas of the City that are more than ½ mile from an existing neighborhood or community park. Future park opportunities should be sought, in particular:

- In the vicinity of Valpico Road between Tracy Boulevard and MacArthur Drive.
- In the vicinity of MacArthur Drive between Schulte and Valpico roads.
- In the vicinity of Byron and Berg roads.
- In the vicinity of Tracy Boulevard and West 6th Street.
- In the vicinity of Tracy Boulevard and Mt. Diablo Avenue.
- In Northeast Tracy in the vicinity of Grant Line Road and East Street.
- In other areas where residents are more than ½ mile from a neighborhood or community park, opportunities for new parks may be scarce. These areas should be priorities for enhancing mini parks or forging community use agreemnts for school play fields.

Funding for future parks in these areas may come from a variety of sources including future development; existing LMDs; and the General Fund. Park access gaps and neighborhood park opportunity areas are shown on Figure 3-1.

Co-Location Opportunities

The Storm Drainage Master Plan (SDMP) identifies the location of existing and proposed detention basins in Tracy. Detention basins in residential areas, especially when larger than five acres in size, may be considered for co-location and/or joint use. As noted in the SDMP, three detention basins are proposed for future service areas that are anticipated to have residential development. These include the following:

- A proposed 35-acre basin in the Catellus planning area is rated as a fair candidate for joint park use because of high groundwater.
- A proposed 5-acre basin in the Rocha planning area is rated as a good opportunity for joint use because it is not far from a proposed Class I Bikeway that could potentially connect this site to Tiago Park. However, the small size will result in limited usable recreational area.

- A proposed 30-acre basin in UR 1 (Alvarez and Others) is considered to be a poor candidate for joint use because of boundary constraints and little differential grading.

In addition to these three, additional detention basins are planned for non-residential service areas.

Facilities such as fire stations, libraries, and community centers may provide future opportunities to co-locate park land. For example, a fire station located adjacent to a park can contribute to a perception of enhanced park safety. In some communities, fire stations also provide meeting rooms for community use. Current recreation trends also support the development of parks adjacent to branch libraries and community/recreation centers. This arrangement allows a site to provide a variety of recreation and leisure-based opportunities at one location, plus support both indoor and outdoor programming. These opportunities shall be considered when identifying sites for future facility and park development.

Trail Opportunities

This Plan proposes a trail system that builds on the City's existing linear parkways, multiuse paths, the planned bikeway system, opportunities for trails along rail, irrigation, and utility corridors, and opportunities for trails in existing or future preserved open spaces. The trail system should also be seen as a "co-location" opportunity for future parks. Off-street trails and pathways, when connected to park land, provide important recreation opportunities and also enhance park access.

The Trail Concept Plan is shown in Figure 5-3 on page 167.



RECREATION AMENITY NEEDS

This Master Plan provides new population-based standards for an array of amenities, to ensure that we are serving the recreation needs of the community. The standards are based on a range of factors, from national and regional best practices to demonstrated local demand. This section summarizes how many additional amenities of each type would be needed to meet the needs of the daytime population both today and in 2040, assuming that the parks currently being planned will have been completed.

Priority and location characteristics for each amenity are also outlined. Our prioritization is informed by the level of need, the location of access gaps, and public input provided during the Plan Update process.

A summary table of recreation amenity needs is provided in Chapter 4: Recreation.

Sports Fields

Inventory

Today, Tracy has 19 baseball/softball fields and 20 soccer fields. An additional 13 baseball/softball and seven soccer fields are planned, all as part of the Legacy Fields sports complex expansion.

Additional Need

Tracy will need an additional three baseball/softball fields beyond those planned. Additional facilities may be needed to host adult softball tournaments on a larger scale, and the City currently lacks 90' base path baseball fields. We also anticipate the need for additional facilities for cricket and lacrosse.

Sports Courts

Inventory

Today, Tracy has 36 basketball courts (half or full), 16 tennis courts, six horseshoe courts, five sand volleyball courts, and four bocce courts. Additional basketball courts (2), and tennis, horseshoe, and bocce courts (one each) are planned.

Additional Need

To meet the needs indicated by this Master Plan's standards, Tracy should focus on providing additional pickleball (14), basketball (13), and tennis courts (11). In addition, sand volleyball (4), shuffleboard (3), and bocce courts (2) are needed. The City lacks indoor recreational facilities, including basketball.

Other Recreational Facilities

Inventory

Today, Tracy's park system has some 95 playgrounds, 56 group picnic areas, nine climbing walls/rocks, six skate elements, four indoor recreation facilities, three water play areas, two roller hockey rinks, one swimming pool, and one dog park (with another on the way).

Additional Need

To meet our standards, and taking into account parks already in the planning stages, Tracy would need another 37 playgrounds, six dog parks, six group picnic shelters, five climbing walls/rocks, three community gardens, three disc golf courses, and one environmental education facility. Some of these may be privately operated and not located on City land.

See Table 4-2 on page 135 for a detailed list of recreation facility needs.

WHAT'S THE RIGHT FIT BETWEEN AMENITIES AND PARKS?



What criteria can help us place future amenities? How do we match amenities with parks? We identify the following considerations:

- Limited access to the amenity type in the part of Tracy where the park is located.
- Capacity of park site to accommodate additional amenities.
- Opportunity to enhance or activate a park site by re-envisioning with different amenities.
- Ease of access by all modes of travel, for amenities that serve the larger community.
- Larger-footprint, active recreation facilities (e.g. athletic fields) are a good fit for community parks that serve as destinations with a citywide draw.
- Smaller-footprint amenities (e.g. bocce ball) are a good fit for smaller parks.

PARKS PLANNING AND DEVELOPMENT IN TRACY

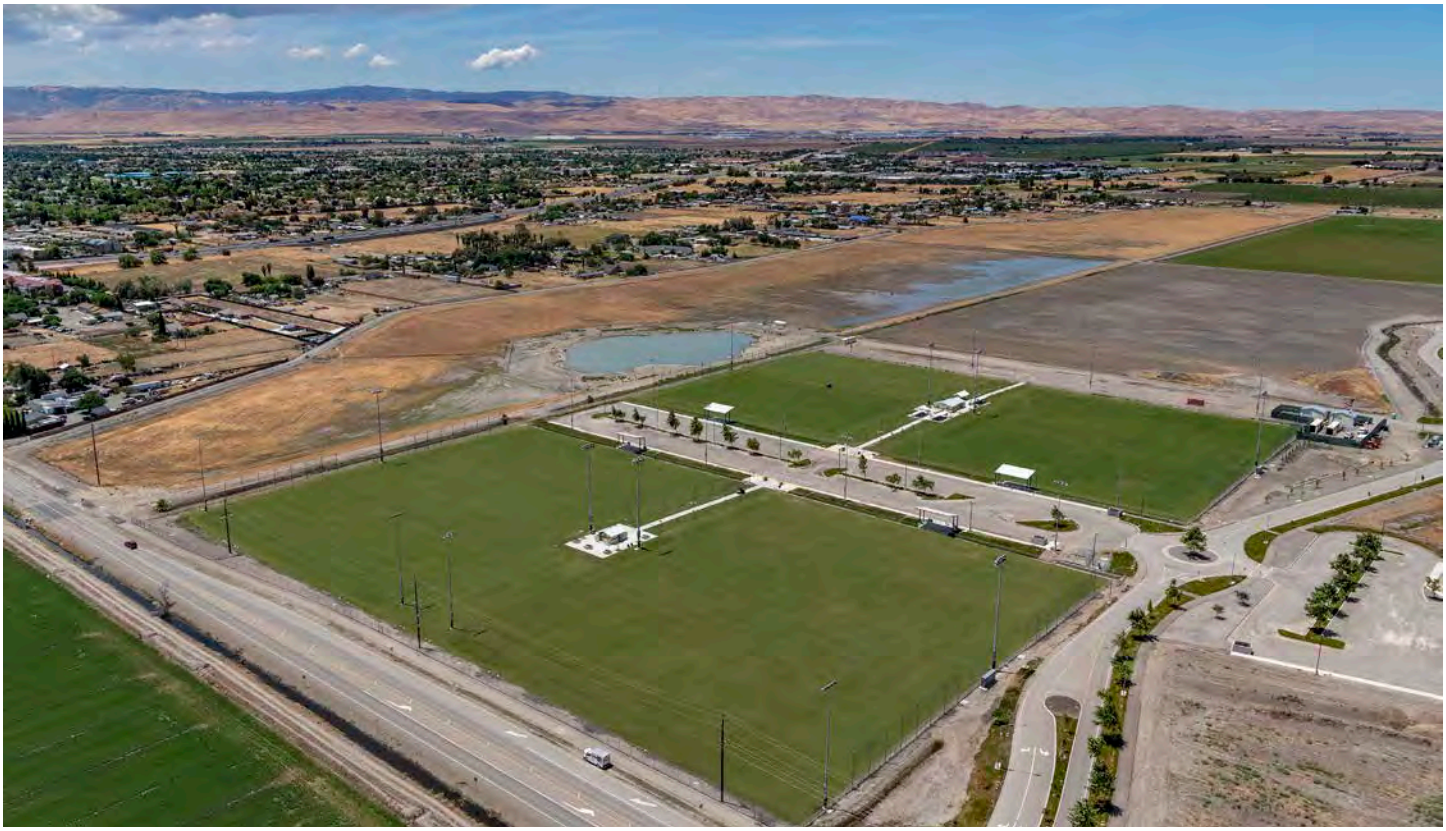
Parks Planning & Development is a division within the Parks & Recreation Department that is responsible for park and recreation facility planning, parkland acquisition, park master planning and the design and development of new – or renovation of existing parks and landscaping. Additionally, the Division ensures that projects fulfill the needs of the community, meet City standards for design, and comply with land use regulations. Parks Planning & Development ensures that all parks and recreation development within the City supports sustainable, innovative, accessible, safe and responsive facilities through community participation and transparent practices. Involvement and support from other City departments is integral to insuring that Parks and Recreation projects get reviewed and approved in a prompt timeframe.

CITY-BUILT PARK PROJECTS

The City can build parks using various funds including fees that are collected from residential development that accumulate over time. Once funding is available, this type of City-built park will be listed as a CIP (Capital Improvement Project) in the City's annual budget. Maintenance and capital replacement funding must also be identified and secured at this time. Planning our parks from start to finish is approximately a two year process. Typically it takes a year for design and preparation of the "blue prints" and a year for construction and plant establishment. Depending on the project and issues related to it, these timelines will vary. Why is this process so long? Below is an outline of the various steps and timeline taken in planning a park.

Step 1: Public Workshops (2-3 months)

The City takes pride in being able to work closely with the neighborhoods that will use the parks. The start of the design process begins with a public workshop to introduce the proposed park design and obtain input from residents. After the plan is revised, a second workshop is held to present the master plan for review. Final revisions are made based on the input gathered at the workshop. The final conceptual plan is then



Legacy Fields Sports Complex.

published and written comments to the final master plan are accepted during the public comment period.

- Initial introduction of project to public
- Online survey to gather input / follow-up
- Final conceptual plan review and public comment

Step 2: Conceptual Plan Approval and Environmental Review (2 months)

From here, the Parks and Community Services Commission reviews, provides feedback and suggestions, and approves the plan. They then forward the plan to the City Council who reviews the master plan with an accompanying environmental document for final adoption. All construction projects, by law, require environmental clearance. This is to ensure that the surrounding environment is protected and potential impacts are identified and mitigated if required. The timing between Commission approval and Council review can vary depending on the type of environmental clearance required for the park design. Both the Commission and City Council meetings are public meetings. Anyone is welcome to attend and provide comments.

- Parks & Community Services Commission design review/ approval
- Potential environmental impacts identified
- Environmental permitting application (if required)
- City Council design review/ approval

Step 3: Design Development (3-4 months)

Once the City Council has approved the plan, construction documents are prepared. Depending on the complexity of site specific issues, the layout of the park and funding, this step can take up to 14 weeks.

- Preparation of construction plans
- Refine design and address site specific issues

Step 4: Citywide Plan Review (3-4 months)

Before the park can be bid for construction, the City-wide plan review, approval and permits are required. This process takes approximately 8 weeks.

- Construction plans submitted to all City departments
- Construction permitting

Step 5: Bid and Award of Construction Contract (1-2 months)

The City is required to bid all improvement projects over $5,000 unless a pre-qualified list of contractors is established. (In those cases, there are additional California Public Contracting Code limits to the maximum dollar value of the project.) The approved plans are bid. The review of the bids and award of the contract to the lowest responsive bidder is an action taken by the City Council.

- Advertisement of bid and bid opening
- City Council review/approval of low bid received

Step 6: Construction (8 months)

Upon City Council approval of the contract award, construction begins. Depending on the complexity of the design and the time of year, this construction period can take up to 20 weeks or more.

- Contractor on site building the park
- Time period may expand due to weather

Step 7: Establishment (3-4 months)

After construction is complete, the City requires a 90-calendar day establishment period in order to assure the long-term success of the project. This is the most difficult time of the process. The grass is green, the play structure is completed and the fences are still up. The establishment period is a time when we are literally watching the grass grow. It takes time to "toughen up" the grass so that it can handle the heavy foot traffic the City experience in its parks. Without this grow-in period, the maintenance of the new park would be extremely high and could result in failure of the turf and other plant material. Generally, City staff starts counting the establishment period days after the second mowing of the grass, however, that can depend on a wide range of other conditions. This is required to ensure that the City has a good healthy stand of grass before we begin the establishment period. The entire park or phase of work remains closed during this timeframe. Because the entire project is under contract and obligations under the contract are not complete, the contractor remains responsible for the entire site. Opening certain improvements within the project is a liability issue for the contractor and the City and therefore, must remained closed. The City thanks you for your patience during this time.

- Plant establishment / grown-in period

Average Time Required to Build a Park = 24 months +/-

Step 8: Project Dedication and Opening

After the establishment period is complete and any outstanding corrections are completed, a dedication of the park occurs. This can be timed at the very end of the establishment period or a few months after the fences are taken down. The timing of the dedication is dependent upon whether the park is named after someone, their family members or other factors.

- Grand opening – fences removed

DEVELOPER-BUILT PARK PROJECTS

In many cases in the City, developers build new parks on behalf of the City as a condition of residential subdivision construction. California law requires that either land or fees be dedicated for park or recreational use. Developer-built parks can oftentimes be delivered faster than a City-built park project. Below is an outline of the various steps and milestones for a Developer to build a park.

To ensure successful, usable parks, the City will not accept for reimbursements or payment:

- Land that has any easements (underground or overhead) that precludes the City from building or using the easement space;
- Any area that useability less than 50 feet wide;
- Any grade or slope that does not allow full use and access;
- Any land or area that has hazardous or environmental limitations;
- Land that is otherwise serving a conservation purpose aside from a useable park;
- Land that could not be developed for any other purpose other than a non-useable park space.

Step 1: Project Initiation

Developer to contact Planning Division of Development Services Department as the first point of contact when planning a new housing development/project. The assigned planner will route the project to various departments/ divisions. At that time, the Parks & Recreation Department will make the determination if a park is required.



Village Green in the Ellis neighborhood.

Step 2: Master Plan and Park Naming

- After approval of a tentative map, Developer creates a conceptual plan for the park that meets City design criteria and complies with CEQA, and this Parks, Recreation and Trails Master Plan. Once the Parks & Recreation Department determines the plan substantially meets the City's criteria, Developer will be required to present the plan to the City's Parks & Community Services Commission at a public meeting for review and approval.
- Typically, it is at this time that decisions related to maintenance responsibilities and funding are determined and the preparation of a maintenance agreement between the City and Developer is initiated.
- The park will need to establish a name through the City's Park Naming Policy prior to starting construction documents.

Step 3: Construction Document Preparation

- Once a plan is approved, Developer prepares & submits 60%, 90% and 100% documents through the Engineering Division of Development Services Department
- 60% submittal is department-specific review, 90% and 100% submittals are City-wide review.
- As details of the plan are finalized, the Public Works Department works with the Developer and the Finance Department to establish estimated costs for the ongoing maintenance, operation and capital replacement of the facility. The Developer is required to join a CFD to ensure these financial obligations are met in perpetuity. (On rare occasions, such as in-fill projects, the Developer may be required to join the existing city-wide Landscape Maintenance District.)

Step 4: Plan Approval

City Engineer to notify Developer of approval.

Step 5: Park Improvement & Refund Agreement

Execute a park specific development agreement.

Step 6: Bid and Award of Construction Bid

Developer to bid project from a City pre-qualification list. Developer to review bids with City and mutually agree on the award .

Step 7: Construction

Developer to contract w/ contractor and oversee project. City to actively participate throughout construction.

Step 8: Establishment (3-4 months)

The start of the 90-day establishment period shall be mutually agreed to by developer and City.

Step 9: Project Completion

Developer and City to mutually agree. Developer to prepare deed papers.

Step 10: Project Dedication and Opening

Developer to participate with the City in the public dedication.

UNDERSTANDING THE COST OF PARKS

Capital Improvement Costs

In this section, rough order of magnitude costs for each proposed park amenity are provided, to assist the City with planning and prioritizing future park and recreation improvements. Unit cost placeholders were determined, informed by a variety of factors including past bidding history and overhead costs for Tracy. These probable costs may rise or fall based on a variety of factors, including, but not limited to, final finish selections, unique site conditions, and coordination with comprehensive park improvements. For the purposes of an "an "à la carte menu," each amenity was studied with minimum core components included, as well as allowances for soft costs and general construction preparations that would likely be needed to take a project from concept design to opening. Due to the varying scale and complexity of each amenity item, these allowances range from 10% - 50% of costs for "Permitting / Consulting" and "General Site Prep / Supervision."

"Permitting / Consulting" includes:

- Permitting fees and processing
- Consultant services and contract drawings
- Project management
- Public outreach and engagement

"General Site Prep / Supervision" includes:

- Clearing and grubbing
- Fine grading and drainage improvements
- Stormwater management (SWPPP required for projects impacting one acre or more in area)
- Site protection, fencing, security, and signage
- Mobilization and supervision
- Inspection, audits, approvals, and project closeout with as-built drawings
- Contingency

Depending on final site selection and construction climate, the following items may also add to the cost of each amenity item. The following list identifies potential exclusions, however exclusions for future project implementation are not limited to these items:

- Temporary utilities
- Permanent utility services
- Offsite improvements
- ADA access improvements
- Retaining walls
- Subgrade replacement
- Land acquisition
- Site furnishings (except where noted)
- Demolition
- Lighting and electrical
- Performance bonds
- Trees, shrubs, and groundcovers
- Maintenance and establishment
- Future capital replacement and planned renovations.

Future Cost Projections

Construction costs typically increase 4% each year.

Annual Park Operation and Maintenance Costs

It is critically important to view the financial sustainability of the Parks and Recreation System through the concept of "Total Cost of Ownership" as shown in the graphic below.

The City will need to closely monitor resources to ensure that the assets of the park system reach the anticipated lifecycles. Maintenance funding should grow to accommodate new park amenities and development in the future. Maintenance standards and expectations are a major driver of costs.

As the system grows, the following guidelines should be utilized to

identify annual operational funding required to maintain additional park acreage:

- Community Parks: $12,000 - $16,000 per acre
- Neighborhood Parks: $16,000 - $21,000 per acre
- Mini Parks: $18,000 - $25,000 per acre
- Sports Complexes:
  - $15,000 - $20,000 per rectangular field;
  - $20,000 - $25,000 per diamond field;
  - $7,000 general acreage
- Special Use Parks: Costs varies dependent upon amenities
- Open Space: $500 - $1,000 per actively managed acre
- Greenways/Trails: $10,000 -$15,000 per acre

*Maintenance costs typically increase 2-3% annually with the cost of goods, services and labor.

Labor Hours

A second driver of establishing operational funding based on maintenance standards is quantity of labor hours required to meet the standards. The number of labor hours, on average, required to manage and maintain the parks system to the standards provided in the previous section is as follows:

- Community Parks: 200-250 annual labor hours per acre
- Neighborhood Parks: 250-300 annual labor hours per acre
- Mini Parks: 350-400 annual labor hours per acre
- Special Use Parks: Varies based on amenities

TOTAL COST OF OWNERSHIP

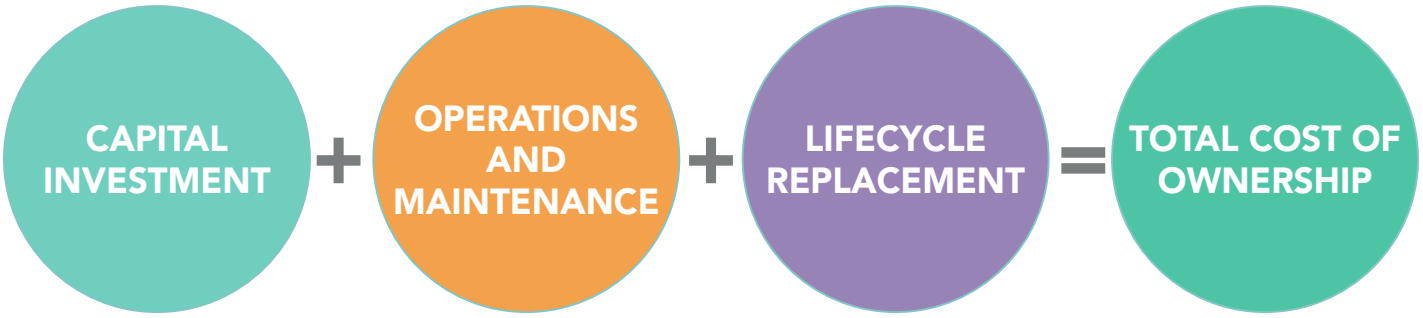


Table 6-5

Estimated Capital Improvement Costs for Typical 5-Acre Neighborhood Park

SITE FEATURE	ESTIMATED COST	DESCRIPTION
Fencing	$300,000	Access Control, 2-Rail Wood Fence, Access Control Gate, Maintenance
Playground with Shade Structure and Accessible Surfacing	$450,000	Playground equipment ages 2-5 and 6-12 with swings, and synthetic surfacing
20' x 20' Shelter	$150,000	Serves 30-32 people
Double Multipurpose Court (Lighted)	$300,000	Sports Court (basketball) with lights and bleachers
Walkway	$600,000	Concrete Walkway, 1/2 Mile x 8 ft. wide (Lighted)
Parallel Street Parking (Not Lighted)	$40,000	Unlighted Parallel Street Parking, Assumed 5 Ea.
Site Furniture	$130,000	5 park benches (5 on concrete slabs), 8 trash cans; 4 bike racks, 2 accessible picnic tables, 9 picnic tables, 3 bbq grills
Recreation Amenity Allowance	$250,000	Allowance to add amenities per community input during planning process
Landscaping, Turf and Signage	$550,000	2 acres of turf, entrance sign, rule signage, wayfinding signage
Sitework	$1,246,500	Includes temporary protection, clear and grub, clean and structural fill (1.5"), storm water allowance, drainage allowance, laser grading. Assumed at 45% of other construction costs.
Subtotal	***$4,016,500***	
Design & Planning	$401,650	Assumed at 10%
Construction Management	$401,650	Assumed at 10%
Contingency	$602,475	Assumed at 15%
Subtotal	***$1,405,775***	
Total Probable Cost (Neighborhood Park)	**$5,422,275**	**$1,084,455 per acre**

SOURCES: WRT, 2021; PROS, 2021; CITY OF TRACY, 2021.

NOTE: THE CIP COSTS IN THE TABLE ABOVE WERE ESTABLISHED IN 2021 AND SHOULD BE ADJUSTED ANNUALLY FOR INFLATION..

Table 6-6

Estimated Capital Improvement Costs for Typical 1-Mile Linear Park

SITE FEATURE	ESTIMATED COST	DESCRIPTION
Trail and Sitework	$1,200,000	Asphalt 1 mile x 12 ft. wide not lighted)
Site Furniture	$80,000	5 park benches (5 on concrete slabs), 5 trash cans; 2 bike racks
Recreation Amenity Allowance	$200,000	Allowance to add amenities per community input during planning process
Landscaping, Turf, Sitework and Signage	$1,000,000	2 acres of turf, interpretive signage, wayfinding signage, mile markers
Subtotal	*$2,480,000*	
Design & Planning	$248,000	Assumed at 10%
Construction Management	$248,000	Assumed at 10%
Contingency	$372,000	Assumed at 15%
Subtotal	*$868,000*	
Total Probable Cost (Linear Park)	**$3,348,000**	**$3,348,000 per mile**

SOURCES: WRT, 2021; PROS, 2021; CITY OF TRACY, 2021.

NOTE: THE CIP COSTS IN THE TABLE ABOVE WERE ESTABLISHED IN 2021 AND SHOULD BE ADJUSTED ANNUALLY FOR INFLATION..

Table 6-7

Estimated Capital Improvement Costs for Typical 15-Acre Community Park

SITE FEATURE	ESTIMATED COST	DESCRIPTION
Fencing	$425,000	Access Control, 2-Rail Wood Fence; Access Control Gate(s), Maintenance; Access Control Gate(s), Park Entrance-Exit, assumed 2-locations
Playground with Shade Structure and Accessible Surfacing	$600,000	"Playground equipment ages 2-5 and 6-12, with climber, swings, and synthetic surfacing"
40' x 40' Shelter	$200,000	Serves 60-75 people
One Natural Turf Multi-Use Field (Lighted)	$1,225,000	"Lighted, sand-based turf field including drainage and irrigation;"
One Double Multipurpose Court (Lighted)	$300,000	Sports Court (basketball) with lights and bleachers
Restroom/Storage Building	$1,250,000	"8-unit single occupancy restroom building, plumbing chase and storage (2,500 sq. ft.)"
Lighted Parking	$500,000	150 parking stalls (145 Std & 5 HC Accessible)
Access Road, (500'L x 25'W)	$350,000	Access Road, (500'L x 25'W)
Nature Trail	$200,000	1/2 Mile (Not Lighted); soft surface
Walkways	$1,100,000	Concrete Walkways, 1 Mile x 8 ft. wide (Lighted)
Site Furniture	$350,000	15 park benches (10 on concrete slabs), 15 trash cans; 10 bike racks, 10 accessible picnic tables, 15 picnic tables, 5 bbq grills
Recreation Amenity Allowance	$300,000	Allowance to add amenities per community input during planning process
Landscaping, Turf and Signage	$2,000,000	5 acres of turf, entrance sign, rule signage, wayfinding signage
Sitework	$3,960,000	Includes temporary protection, clear and grub, clean and structural fill (1.5"), storm water allowance, drainage allowance, laser grading. Assumed at 45% of other construction costs.
Subtotal	***$12,760,000***	
Design & Planning (10%)	$1,276,000	Assumed at 10%
Construction Management (10%)	$1,276,000	Assumed at 10%
Contingency (15%)	$1,914,000	Assumed at 15%
Subtotal	***$4,466,000***	
Total Probable Cost (Community Park)	**$17,226,000**	**$1,148,400 per acre**

SOURCES: WRT, 2021; PROS, 2021; CITY OF TRACY, 2021.

NOTE: THE CIP COSTS IN THE TABLE ABOVE WERE ESTABLISHED IN 2021 AND SHOULD BE ADJUSTED ANNUALLY FOR INFLATION..

PARK MAINTENANCE AND LIFECYCLE REPLACEMENT

Benchmark Analysis

The Consulting Team identified basic maintenance metrics to be benchmarked against comparable Parks and Recreation systems. The complexity in this analysis was ensuring direct comparison through a methodology of statistics and ratios in order to provide objective information that is relevant and accurate, as best as possible.

It must be noted that the benchmark analysis is only an indicator based on the information provided. The information sought was a combination of metrics based on jurisdiction size and park inventories. The attributes considered for selection in this benchmark study included:

- Jurisdiction population size
- Jurisdiction population density
- Jurisdiction land area size
- System focused on suburban parks and recreation service delivery

Benchmark analysis incorporates a mix of systems that are close in geographical proximity to Tracy. The benchmark includes the agencies listed in Table 6-8.

These jurisdictions, while comparable in many ways, may have differences in funding levels/mechanisms, soil types and quality, construction quality, facility/park age, groundwater level and quality, and other factors. Differences also exist in how each system collects, maintains, and reports data. These variations have an impact on the per capita and percentage allocations; hence the



overall comparison must be viewed with this in mind.

The benchmark data collection for all systems was obtained in March, 2021. Population figures used for analysis reflect data from the Environmental Systems Research Institute, as of July 1, 2020. While it is possible that there may have been changes or updates in the data provided, to ensure consistency only the original figures obtained at that time have been used in the benchmark. The goal is to evaluate how Tracy is positioned among peer agencies as it applies to the maintenance of its parks system through data that offers a view of each system's park acreage inventory.

KEY TAKEAWAYS FROM THE BENCHMARK ANALYSIS



DEVELOPED ACRES

Least developed park acres: Brentwood - 253
Most developed park acres: Livermore Area Park District - 406
Benchmark median developed park acres: 348
Tracy developed park acres: 364

DEVELOPED ACRES PER 1,000 POPULATION

Benchmark leader: Livermore Area Park District – 4.7 acres/1,000 residents
Benchmark median – 4.2 acres/1,000 residents
Benchmark bottom: Tracy – 4.1 acres/1,000 residents

MAINTENANCE EXPENDITURES PER DEVELOPED PARK ACRE

Lowest cost per acre: Lodi - $10,751
Highest cost per acre: Brentwood - $16,203
Benchmark cost per acre: $13,783
Tracy cost per acre: $12,723

Table 6-8
Benchmark Jurisdictions

AGENCY	STATE	JURISDICTION TYPE	POPULATION	JURISDICTION SIZE (SQ. MI.)	POPULATION DENSITY PER SQ.MI.
BRENTWOOD	CA	City	64,474	14.9	4,336
LIVERMORE AREA PARK DISTRICT	CA	Park District	86,699	25.2	3,440
LODI	CA	City	71,749	13.8	5,192
MANTECA	CA	City	83,028	21.4	3,880
PLEASANTON	CA	City	81,777	24.3	3,369
TRACY	**CA**	**CITY**	**94,740**	**26.0**	**3,640**

Comparison of Inventories and Operations

SYSTEM ACREAGES

This section provides a general overview of each system within the benchmark analysis. Table 6-9 describes the total developed acres and level of service (total developed park acres per 1,000 residents for each agency).

Developed Park Acres. In terms of percentage of developed acres, the benchmark agencies range from 253-406. With a developed park acreage 346, Tracy is right in line with the benchmark median of 348 developed park acres.

When comparing developed park acreage level of service to each benchmarked community, there is a very slight difference as the benchmark range is 3.7 to 4.7 developed acres per 1,000 residents. Tracy's 3.7 acres per 1,000 residents ranks at the bottom of the list, but only slightly below the benchmark median (4.2 acres per 1,000).

PARK MAINTENANCE FUNDING

This section provides an overview of the funding available for park maintenance of the benchmarked agencies. Table 6-7 describes the total parks maintenance budget for each agencies as well as the appropriated expenditure on a per acre basis.

Total Annual Maintenance Budget. In terms of annual park maintenance budget, the benchmark agencies range from $3.945M to $6.74M. With an annual park maintenance budget of $4.4M, Tracy is below the benchmark median of $5.19M.

Maintenance Expense per Acre. When comparing the cost per acre of each benchmarked community, there is a significant difference as the benchmark range is $10,751 to $26,658 expended per acre of developed park. Tracy's $12,773 cost per acre ranks second lowest and below the benchmark median ($15,525 per acre). Tracy would need an additional $2,752 per acre in annual funding (approximately $950,000) to be in line with the benchmark median.

Park Maintenance Standards

Regular maintenance requires unit-based quantification for most major resource requirements and provides the methods for projecting future resource needs. The City's maintenance efforts are expansive and address diverse aspects of maintaining high-quality facilities, amenities, and infrastructure to preserve the integrity of public assets and their meaningful use. The prevailing objectives of a standards based park maintenance program are presented below but not in order of importance:

- Maintain and improve the sites, grounds, facilities, and structures of the City Parks and Recreation system to provide optimal and enjoyable use.
- Provide landscaping and general maintenance for a multitude of City amenities, including but not limited to, landscaped beds and turf, urban open spaces, urban forests, and selected City park buildings and structures.

Table 6-9
Benchmark Comparisons

AGENCY	TOTAL DEVELOPED ACRES	TOTAL DEVELOPED ACRES PER 1,000 POPULATION	TOTAL ANNUAL MAINTENANCE BUDGET	MAINTENANCE EXPENSE PER ACRE
BRENTWOOD	253	3.9	$6,735,786	$26,658
LIVERMORE AREA PARK DISTRICT	406	4.7	$5,883,919	$14,492
LODI	367	4.2	$3,945,470	$10,751
MANTECA	382	4.6	$5,225,937	$13,676
PLEASANTON	335	4.1	$4,975,232	$14,851
TRACY	**346**	**3.7**	**$4,401,229**	**$12,723**

- Be responsive to maintenance needs of the City's open-space tracts. Particular attention must be paid to access points, trail repair, erosion control, and trash removal.
- Protect and preserve the value of City assets so that long-term maintenance costs are minimal due to extending the service life of those assets.

Many of the objectives assigned to the Park's maintenance teams go beyond the traditional responsibilities of park maintenance employees.

It is recommended that all park maintenance agencies adopt a system of grounds maintenance levels wherein functions are organized into a tiered structure with three different levels of service. These levels are referred to as maintenance modes, and each has a unique standard that dictates routine maintenance tasks and their frequency. The appropriate maintenance mode is assigned to each park or site, which creates a framework for organizing and scheduling tasks and responsibilities at each location. A description of each of the maintenance modes is provided below:

Maintenance Mode/Level 1 (Mode/Level 1) applies to parks or sites that require the greatest level of maintenance standard or the highest level of use in the system. These parks or sites are often revenue producing facilities, such as a sports complex, where the quality and level of maintenance has a direct impact on the park facility's ability to maximize revenue generation.

Maintenance Mode/Level 2 (Mode/Level 2) applies to parks or sites that require a moderate level of effort and maintenance standards in the system. These include developed and undeveloped parks with amenities that are heavily used such as community, neighborhood, and mini parks, and special-use facilities found in the Tracy Parks system.

Maintenance Mode/Level 3 (Mode/Level 3) applies to parks or sites that require a nominal level of effort and maintenance standards in the system. These generally include undeveloped parks with minimal amenities such as natural areas.

Parks Maintenance Key Findings

MAINTENANCE MANAGEMENT PLAN/STANDARDS

Through the review of data and workshops with staff, the Consulting team determined that the City's parks and landscape operations divisions (GF/LMD/CFD) operate within the maintenance modes identified above. Tracy's maintenance operations also intuitively follow a set of routine parks and grounds maintenance standards with task, frequency and season of year for each of their four functional work areas, however, a formalized, documented, detailed maintenance management plan for work performed by City staff does not exist for all facility types.. Formalized standards are provided for third party contractors that manage and maintain the CFD and LMD parks and landscaped areas as defined in the scope of work.

A formalized maintenance management plan includes not only maintenance modes and standards for each park but also tracks the performance of the work against a set of defined outcomes as well as the costs expended to achieve each outcome. A maintenance management plan is typically memorialized within a work order management system.

WORK ORDER MANAGEMENT SYSTEM

Tracy's operational divisions utilize the Government Outreach work request system to gather and track customer service requests. The City has been developing its own daily task tracking and GIS-based work order system over the past 18 months. A fully functional CMMS that is user friendly for all field staff and tied directly to GIS/ESRI is critical to long-term success.

COST OF SERVICE/THIRD PARTY CONTRACTING OF SERVICES

Given the varying cycles of the economy, it is imperative that the division continually evaluates the capacity and cost of service in the private sector so that operational performance can be continually evaluated and benchmarked against the private sector and other agencies.

Maintenance Actions

IMPLEMENT WORK ORDER MANAGEMENT SYSTEM

A work order system should be used to track lifecycle maintenance requirements that are tied to weekly and monthly work orders. This will help the staff to stay ahead of preventative maintenance and limit breakdowns. Further, utilizing the system will provide staff the necessary "actual cost" data for work being performed. The typical components of a work order management system are as follows:

Schedule Work Activities. Detailed framework for asset management by incorporating GIS into the asset repository. Allows for grouping of assets by location, type, age, or other key parameters. These groupings can then be used to create maintenance activities such as preventive work, reactive work, tests, or inspections.

Mapping Tools. ArcGIS maps are an integral part of the work management process. This allows for the creation of map visualizations of database queries including open work orders, service requests, or work orders of a specific type and assignment. These tools empower both management and staff to interact with asset data.

Data Mobility. A variety of tools to help maintenance staff access and update valuable information while in the field. The system should have ease of use in the field.

Asset Management. Track work performed on any asset at any given time throughout its lifecycle. Users can easily search for active work orders and view them dynamically on the GIS map, track overdue work orders and monitor work associated with a specific task, contractor, or project.

COST OF SERVICE/SYSTEMIC APPROACH TO CONTRACTING SERVICES

Through the development of management processes, Tracy parks and landscape maintenance operations should begin to track unit activity costs through the implementation of a work order management system and in turn, analyze the unit cost to perform work internally and through contracts.

UPDATE WORK PLANS BASED ON MAINTENANCE STANDARDS

Maintenance standards are based on a tiered structure with three different maintenance modes or levels of service (see pages 206-7). For each level of service, maintenance tasks and frequencies should follow best practices as established by the National Recreation and Park Association. *Department personnel should refer to the Excel spreadsheet of maintenance standards provided as part of the Master Plan Update process.*

PLEASE NOTE: The best practice maintenance standards may differ from current City of Tracy park maintenance practices and may include standards for assets that are currently not a part of the City's park system, but might be in the future. The City will update and continue to customize the standards based on the park and recreation values of residents and need to be adopted and implemented by staff and followed regardless of whether work is performed by City staff or third-party contractors.

Lifecycle Replacement

It is critically important to view the financial sustainability of the Parks and Recreation System through the concept of "Total Cost of Ownership".

Tracy parks and landscape maintenance operations will need to closely monitor the assets of the park system throughout their lifecycle to ensure the safety of park patrons. It is highly recommended that assets be replaced to ensure efficient and effective utilization of operational dollars.

CREATE ASSET MANAGEMENT PLAN

The City will create an Asset Management Plan that starts with a field inventory and assessment of park fixtures and amenities.

The lifecycle replacement schedule found on the following page should be utilized as a guide for the creation of an asset management system that will guide future actions. Unit costs are also provided (in 2020 dollars).

Table 6-10
Lifecycle Replacement Schedule

AMENITIES	UNIT	SUGGESTED LIFECYCLE (IN YEARS)	AVERAGE REPLACEMENT COST (PER UNIT)	NOTES
Aquatic Center	SF	25 to 35	$500 to $700	Dependent upon type of pool
Recreation Building	SF	40 to 50	$500 to $600	
Athletic Field Lighting for Baseball/ Softball Field	EA	20 to 30	$500,000 to $750,000	To retrofit to LED, cost is $500 more per bulb
Athletic Field Lighting for Multi-Purpose (Soccer) Field	EA	20 to 30	$500,000 to $1,000,000	To retrofit to LED, cost is $500 more per bulb
Basketball - Full Outdoor Court (Lighted)	EA	20 to 30	$100,000 to $150,000	
Basketball - Full Outdoor Court (Lighted)	EA	20 to 30	$60,000 to $75,000	
BBQ Grill	EA	10 to 15	$500 to $1,500	
Bench	EA	10 to 15	$2,500 to $3,000	Metal with powder coating
Bike Rack	EA	10 to 15	$500 to $1,500	Metal with powder coating
Bocce Ball Court	EA	10 to 15	$30,000 to $60,000	12' x 60' court
Concession Stand	SF	20 to 30	$400 to $600	per square foot cost
Disc Golf Hole	EA	10 to 20	$1,000 to $2,000	Per hole cost
Dog Park (Lighted)	AC	20 to 30	$70,000 to $150,000	Lighting is for security (low-level); does not include furniture
Drinking Fountain	EA	10 to 15	$12,000 to $15,000	
Emergency Phone	EA	10 to 15	$1,800 to $3,500	Assumes replacement of public phone with emergency phone
Fencing	LF	20 to 30	$25 to $40	Assumes vinyl coating
Fit Course	Course	10 to 15	$1,500 to $2,500	Assumes cost of single piece of equipment
Fire Pit	EA	10 to 15	$250 to $2,000	
Flag Pole	EA	25 to 35	$3,500 to $5,000	
Fountain	EA	20 to 30	$2,500 to $25,000	Highly dependent upon complexity and size of fountain
Gardens	SF	20 to 30	$5 to $10	Dependent upon type of garden
Gate (Park Entrance)	EA	20 to 30	$3,500 to $5,000	Assumes double swing gates
Horseshoe Pit	EA	20 to 30	$10,000 to $16,000	Rebuild New
In-Line Hockey (Lighted)	EA	20 to 30	$100,000 to $150,000	
In-Line Hockey (Not Lighted)	EA	20 to 30	$20,000 to $40,000	

SOURCES: PROS, 2021; CITY OF TRACY, 2021.

NOTES:
1. COST ESTIMATES DO NOT INCLUDE DEMOLITION OF EXISTING INFRASTRUCTURE.
2. COST ESTIMATES DO NOT INCLUDE DESIGN OR OTHER SOFT COSTS.
3. THE REPLACEMENT COSTS LISTED IN THIS TABLE WERE ESTABLISHED IN 2021 AND SHOULD BE ADJUSTED ANNUALLY FOR INFLATION.

TABLE CONTINUES ON NEXT PAGE

Table 6-8 (continued)
Lifecycle Replacement Schedule

AMENITIES	UNIT	SUGGESTED LIFECYCLE (IN YEARS)	AVERAGE REPLACEMENT COST (PER UNIT)	NOTES
Lake	AC	25 to 50	$500,000 to $1,000,000	Assumes renovation
Parking Space	EA	15 to 25	$10,000 to $15,000	
Pedestrian Bridge	LF	30 to 50	$1,000 to $2,500	Highly dependent upon complexity of the crossing
Pickleball Court (lighted)	EA	20 to 30	$100,000 to $200,000	Assumes 4 courts (equivalent of 1 tennis court)
Pickleball Court (not lighted)	EA	20 to 30	$100,000 to $150,000	Assumes 4 courts (equivalent of 1 tennis court)
Picnic Tables	EA	10 to 15	$3,000 to $5,000	
Playground (Shaded)	EA	15 to 20	$300,000 to $1,000,000	2-5 year old and 5-12 year old components
Ramada/Shelter 10 x 10	EA	25 to 35	$100,000 to $200,000	
Ramada/Shelter 20 x 20	EA	25 to 35	$250,000 to $500,000	
Restroom	EA	20 to 30	$350,000 to $500,000	
Scoreboard	EA	10 to 15	$55,000 to $75,000	Digital on pedestal
Shade Canopy (separate from Playgrounds)	EA	10 to 15	$30,000 to $100,000	Fabric shade sail
Shuffleboard Court	EA	20 to 30	$12,000 to $18,000	
Signage (Monument-Park Name)	EA	20 to 30	$10,000 to $20,000	Low end: neighborhood park. High end: community park
Signage (Rules & Reg)	EA	10 to 15	$500 to $1,500	
Skate Park above ground	SF	10 to 15	$40 to $75	
Skate Park in-ground	SF	20 to 30	$300 to $750	
Tennis Court (lighted)	EA	20 to 30	$100,000 to $200,000	
Tennis Court (not lighted)		20 to 30	$100,000 to $150,000	
Trail (Decomposed Granite)	LF	20 to 30	$7 to $15	
Trail (Paved)	LF	20 to 30	$25 to $40	Assumes concrete surface
Trash (Receptacle)	EA	10 to 15	$1,000 to $2,500	
Volleyball Court (Sand, lighted)		20 to 30	$50,000 to $75,000	
Volleyball Court (Sand, not lighted)	EA	20 to 30	$15,000 to $25,000	
Walkways	LF	20 to 30	$15 to $35	Assumes concrete

SOURCES: PROS, 2021; CITY OF TRACY, 2021.

NOTES:
1. COST ESTIMATES DO NOT INCLUDE DEMOLITION OF EXISTING INFRASTRUCTURE.
2. COST ESTIMATES DO NOT INCLUDE DESIGN OR OTHER SOFT COSTS.
3. THE REPLACEMENT COSTS LISTED IN THIS TABLE WERE ESTABLISHED IN 2021 AND SHOULD BE ADJUSTED ANNUALLY FOR INFLATION.

FUNDING STRATEGY

Parks and recreation facilities serve many essential functions. They build community and a sense of place. They provide an affordable source of recreation provide opportunities for people to improve their health. They improve property values and encourage investment, and bring myriad environmental benefits.

This section covers various mechanisms for funding the construction and acquisition of new park facilities as well as the continued operation and maintenance of existing facilities and recreational programs.

Capital Financing

The City of Tracy is making use of multiple funding strategies as part of its 2021-22 CIP to raise capital for construction, acquisition and reimbursement of improvements, and will continue to do so in the years ahead. These include the following.

General Obligation Bonds

A General Obligation Bond, or GO Bond, is a municipal bond backed by the full credit and taxing power of the issuing agency which is paid off by an increase in the ad valorem property tax rather than the revenue from a specific project or tax. GO Bonds require a two-thirds approval of the voters voting in the election and can be used only for infrastructure, not ongoing services.

Limited Obligation Bonds

Limited Obligation Bonds are secured by a particular revenue source, often a special financing district (more on this later). A Limited Obligation Bond is not backed by the full credit and taxing power of the issuing agency, therefore, In the event the collections are not sufficient to pay debt service on Limited Obligation Bonds, the issuer is under no obligation to use other funds to satisfy that obligation. The authority to issue the bonds is typically part of the approval process for the revenue source. The revenue source will likely require approval of either voters or property owners.

The City currently uses limited obligation bonds in association with Assessment Districts.

Revenue Bonds

A Revenue Bond is a type of limited obligation bond supported by the revenues from a specific source, such as water rates. A Revenue Bond is not backed by the full credit and taxing power of the issuing agency, therefore, in the event the specific revenue source collections are not sufficient to pay debt service on the Revenue Bonds, the issuer is under no obligation to use other funds to satisfy that obligation. While the specific revenue source may require voter, property owner or rate payer approval, the issuance of the Revenue Bonds does not require separate approval.

The City currently uses many different types of revenue bonds, such as lease, water, wastewater, sewer, community development and JPA bonds.

Pay-As-You-Go

Pay-As-You-Go is a manner of paying for capital projects with existing funds. Pay-As-You-Go allows future funds to remain available for other uses as they are not encumbered by debt service payments.

In Tracy, the **General Fund** is an important source for capital improvements in parks, programmed through the annual budget and CIP process.

Measure V, the half-cent sales tax passed by Tracy voters in 2016, is another critical source of funding for parks projects, providing $10 to $14 million annually so far.

Dedication or "Fee-in-Lieu-Of"

As part of the land development process, the City may require the developer to dedicate land for public parks and recreation purposes. The City may also give developers the

option to instead pay a fee, or "fee-in-lieu-of dedication," to be used for providing park facilities, constructing recreation facilities, or privately reserving land for park and recreation purposes.

In California, the Quimby Act provides a mechanism for requiring new residential development to provide park facilities for the residents of a new development. Under the Quimby Act, a City can require a developer to dedicate land or pay in-lieu fees to provide park facilities for a new subdivision. The dedication of land or the payment of fees is imposed as a condition of approval for the subdivision. Park facilities funded under the Quimby Act do not have to be located within the subdivision that is providing the land or fee, but there must be a reasonable relationship between the subdivision and the park facilities as well as a reasonable likelihood that the residents of the subdivision will use the facilities.

Development Impact Fees

In addition to the Quimby Act, the City may condition development approvals on payment of "development impact fees" (also referred to as "developer fees") under the Mitigation Fee Act, and use those fees to fund parks and recreation facilities serving the new development. Under the Mitigation Fee Act, a developer may be required to pay fees to offset the impact of a new development on "public facilities," which include parks. Development impact fees may be used to install or refurbish parks, but they typically cannot be used to fund maintenance or operations (there are limited exceptions).

The City currently uses development impact fees to collect funds for infrastructure necessitated by new development. Recent projects funded using development impact fees include the widening of Corral Hollow Road between Parkside Drive and Linne Road and the recycled water project at the City's Wastewater Treatment Plant.

Tracy's most current impact fee schedule can be found on the City's website.

Public Private Partnership (P3) and Other Partnerships

A Public Private Partnership, or P3, is a cooperative arrangement between the City and a private sector company that can be used to finance and build infrastructure projects. Financing generally comes from the private sector, but requires some form of payment over time from either the City or the project's users. Risks are distributed to the partners.

Another type of cooperative partnership is an agreement with a land trust. A land trust is typically a charitable organization that acquires land or conservation easements to achieve one or more conservation purposes. The conservation purposes may include protecting natural habitat, water quality, or scenic views; ensuring that the land is always available for farming, forestry, or outdoor recreational use; or protecting other values provided by open land. Land trusts work cooperatively with landowners to complete real estate transactions, sometimes purchasing property interests and sometimes accepting donations of those interests. Land trusts also work to ensure that land previously acquired or placed under easement is properly conserved. They seek to bring lasting conservation benefits—permanent improvements—to communities.

There are a multitude of non-profit and charitable organizations working both locally and globally to conserve open space lands and opportunity exists to partner with these organizations. The Nature Conservancy, Natural Resources Defense Council, and the Sierra Club Foundation are several nationally recognized conservation organizations.

Grants

Grants are available at the local, state and federal level depending upon the type of financing request. Grants do not typically have to be repaid and can be an excellent way to fund specific facility and project needs. Each grant opportunity will have different requirements and while certain grants will require matching funds, others will not.

California's Statewide Park Program, funded by Proposition 68 in 2018, has provided four rounds of grant funding as of 2021, funding new and enhanced parks across the State.

Land and Water Conservation Fund (LWCF) grants provide funding for the acquisition or development of

land to create new outdoor recreation opportunities for the health and wellness of Californians.

Caltrans' Sustainable Transportation planning grants and Active Transportation Program (ATP) are focused on improving bicycle and pedestrian access and infrastructure, including trails.

Cal Fire offers urban forestry grants aimed at reducing greenhouse gas emissions and improving air quality.

The Office of Grants and Local Services (OGALS) develops grant programs that provide funding for local, state, and nonprofit organization projects.

The **National Park Service (NPS)** offers a variety of grant opportunities for park restoration, maintenance and development.

Congress established the **Community Development Block Grant (CDBG)** Programs under Title 1 of the Housing and Community Development Act of 1974 ("Act"). The CDBG programs provide federal grants to cities and counties to develop "viable urban communities, by providing decent housing and a suitable living environment and expanding economic opportunities, principally for persons of low- and moderate-income." CDBG funds may be used to support a wide variety of activities, including upgrades to parks in low-income census tracts.

The **Federal Emergency Management Agency (FEMA)** offers non-disaster grants. Examples might include grants to fund tree



The City of Tracy is planning for the expansion of Gretchen Talley Park. Pay-as-You-Go funding, augmented by Measure V, makes this project possible.

thinning in areas prone to fires, or replanting grants to promote tree canopy biodiversity and reforestation.

The **National Recreation and Park Association (NRPA)** periodically offers competitive grants available for park and recreation agencies.

There are numerous other **private, public and corporate foundations** that fund parks. Fundsnet Services Online (fundsnetservices.com) is a good place to begin researching foundation grants. The site operates as a searchable database of foundation grant opportunities around the country.

Tax Increment Financing

Tax Increment Financing was used routinely via redevelopment agencies, however redevelopment agencies were officially dissolved in 2012. There are other ways to access Tax Increment Financing through Infrastructure Financing Districts or Enhanced Infrastructure Financing Districts (EIFDs), though these tools are not as flexible.

EIFDs were introduced by the California Legislature in 2014-2015, enabling a new model for financing infrastructure and economic development in California. The statutes authorize creation of districts by a local city or county. Special districts may participate. EIFDs focus on infrastructure and public/private transactions.

Maintenance and Operations Funding

Special Financing Districts

Special financing districts are a central component of parks maintenance in Tracy.

LANDSCAPING AND LIGHTING ASSESSMENT DISTRICTS

The Landscaping and Lighting Act of 1972 allows governmental agencies to form Landscaping and Lighting Assessment Districts (LLADs), also known as Landscape Maintenance Districts (LMDs) to fund the installation and annual maintenance of landscaping, public lighting, sidewalks, curbs, gutters, park or recreational improvements. In addition, an LMD may fund the acquisition of land for park, recreational, or open-space purposes. Bonds may be used for capital financing, but this is not common.

In order to form an LMD, the City must conduct a study, prepare an engineer's report and propose the formation of a district and the levy of assessments. Affected property owners are then notified and a public hearing is held. In order to approve the district, a vote of affected property owners through an assessment balloting procedure is required. Once approved, assessments are placed on property tax bills each year to pay for the improvements and services.

The City of Tracy has established many LMDs to provide landscape maintenance services in specific areas of the City. Most properties in Tracy constructed after 1985 are subject to a special annual charge for park and landscape maintenance. Parks in these areas are maintained using funds from these districts.

These LMDs were each established with different levels of funding support, which has resulted in uneven resources avaialble for maintenance across Tracy--an issue which the City is actively addressing. The Master Plan has set us up for success in tackling park needs in LMDs by establishing an understanding of improvement needs and associated costs.

COMMUNITY FACILITIES DISTRICTS

A Community Facilities District ("CFD") is formed pursuant to the Mello-Roos Community Facilities Act of 1982 ("CFD Act"), commencing with Section 53311 of the California Government Code.

A CFD special tax may fund a variety of capital improvements and infrastructure, as well as a range of services including recreation program services, maintenance and lighting of parks, parkways, streets, roads and open space, flood and storm protection services, and maintenance and operation of any real property or other tangible property with an estimated useful life of five or more years that is owned by the local City or by another local City.

The successful establishment of a CFD requires approval of two-thirds of the registered voters voting in the election. Each voter has one vote regardless of their weighted share of

the proposed CFD special tax levy. In the event there are no registered voters (i.e. vacant land), the vote is by landowners based on acreage of taxable parcels.

There is flexibility in the formula used to calculate the annual special tax levy, which is referred to as the Rate and Method of Apportionment of Special Tax (RMA). The RMA may be as complex as needed to account for any unique property characteristics or development stages. CFD special tax rates can be based upon any number of parcel characteristics such as development, parcel classification, building square footage, or parcel size.

The City administers a variety of CFDs. There is also a Citywide CFD established to mitigate the costs associated with the Police and Public Works service demands associated with new development.

1911/1913/1915 ACT ASSESSMENT DISTRICTS

Pursuant to the Improvement Act of 1911 and the Municipal Improvement Act of 1913, assessment districts are authorized for establishment to finance infrastructure needs that include the following:

- Public works and infrastructure
- Utility infrastructure
- Real property acquisition
- Payment of existing special assessment liens

In order to form a 1913/1915 Act District, the City must conduct a study, prepare an engineer's report and propose the formation of a district and the levy of assessments. The engineer's report must separate the general and special benefit and assessments may only be collected for the special benefit portion. Affected property owners are then notified and a public hearing is held. In order to approve the district, a vote of affected property owners through an assessment balloting procedure is required. Once approved, assessments are placed on property tax bills each year to pay for the improvements and services.

The Improvement Bond Act of 1915 is normally used in combination with one of the above acts to issue bonds to finance the improvements. When bonds are issued, installments will be charged annually until the bonds are paid in full.

The City has several such assessment districts in place with associated limited obligation bonds. The requirement to separate general from special benefit and only assess for the special benefit makes these less flexible that other mechanisms.

User Fees

Most parks and recreation departments establish user fees in an effort to recover program costs through recreation revenues. The City currently charges facility use fees for the parks, sports facilities and picnic areas. Those fees will be reviewed and updated to ensure that charges are fair, sufficiently cover all costs, and are equitable for the use of facilities, equipment, and participation in programs.

Property Related Fee

Property Related Fees are charges to property for service provided. The service must be immediately available and an analysis must be completed to show the fee does not exceed the proportional cost of service. Property Related Fees are approved through a process that includes a public hearing and either a two-thirds vote of registered voters or a majority protest ballot proceeding.

Special Assessments

Also known as a "Special Benefit Assessment", this is a financial charge levied against a parcel of land for the Benefit that is generated by the underlying public service or improvement project. By law, benefit assessments cannot be based on the value of property. Instead, each district establishes a benefit formula and each parcel in the service area is assessed according to the benefit it receives from the services and improvements. The governing body of the entity levying the assessment must make a finding of Special Benefit in order to validate this process. The assessment amount is limited to the value of the improvement or service provided to each assessed property.

Special Assessments are approved by a protest ballot proceeding. Each property owner's ballot is weighted by the amount of the assessment assigned to that owner's property. Of the property owner ballots returned, if a majority of the ballots oppose the assessment, a majority protest exists and the assessment may not

be imposed.

Special Property Taxes

A special tax is a financial charge imposed for a specific purpose. The tax amount is calculated via some type of special tax formula and is levied annually on property for a defined period of years. The Tax measures require a two-thirds majority of voters, but have the most flexibility. If there is widespread community support, a special tax can be a reliable, durable, and flexible source of revenue for parks funding.

The amount of the special tax is not limited to the relative benefit it provides to property owners or taxpayers. Typically, they are levied on a per parcel basis either according to the square footage of the parcel or on a flat charge, although the law usually provides flexibility to levy the special tax on any "reasonable basis". However, Special Taxes cannot be imposed on an ad valorem (property value) basis.

Parcel Tax

A special tax created pursuant to California Government Code Section 50075 is also referred to as a "Parcel Tax." The City may create a Parcel Tax which does not exceed the reasonable cost of the improvements or provision of service to be levied against all taxable property within the District.

A Parcel Tax may be levied to pay for any legitimate government purpose. While the Parcel Tax code itself does not allow for bond issuance, Revenue Bonds may be issued that use the Parcel Tax as the stream of revenue securing the bonds.

There is flexibility in the formula used to levy a Parcel Tax and property owned by a public entity, or other non-taxable property, is generally exempt, presuming the property is being used for its governmental purpose.

The successful creation of a Parcel Tax requires the approval of two-thirds of the registered voters voting in the election. Each registered voter has one vote regardless of their weighted share of the proposed special tax levy. Unlike the CFD special tax, a Parcel Tax created pursuant to Government Code Section 50075 does not require the recordation of continuing lien against the property.

Funding Strategy Summary

As this section illustrates, there are a variety of financing mechanisms available to fund the ongoing maintenance, operations and improvements of Tracy's parks, recreation facilities and trails. The type of financing mechanism or mechanisms needed will depend on the types of facilities and improvements to be constructed and maintained.

The pattern, timing, and predictability of expenses will also affect the choice of revenue mechanism(s). Initial considerations should include whether a one-time expenditure is required, pay-as-you-go costs are preferable, or if both components are needed. For example, at one end of this continuum is a large infrastructure outlay for sports park improvements. This is clearly a one-time expenditure that likely will require bonds and a longer-term payback period. At the other end of the continuum is maintenance of parks. These activities require ongoing revenues that increase over time to keep up with inflation. In the middle of the spectrum could be a project that requires some maintenance and significant outlays for replacement costs during the life of the facilities.

The City will continue to explore the best funding strategies to address ongoing needs and achieve the Plan's vision over time.

MONITORING OUR PROGRESS

The Parks, Recreation and Trails Master Plan will be evaluated and updated on a yearly basis. This will involve an annual review with the Parks Commission, with updates on new parks and park improvement projects; recreation programming and attendance; and trail system development.

City and developer inititatives and outcomes as they relate to parks and recreation will be evaluated based on the goals and policies established in this Plan. The City's approach will be adjusted, as needed, to more successfully achieve the Plan's vision.

The review will also give Staff and the Commission an opportunity to revisit goals and policies, allowing for change. Revisions may be added as appendices.

This will ensure the Plan is not collecting dust on the shelf but is being actively used, and allows the City to keep the Plan up to date, reducing the burden on future Updates.



Veterans Park

APPENDIX

APPENDIX A



CITY COUNCIL



RESOLUTION



Public Safety Impact Fee Nexus Study

City of Tracy
Master Plan Area

June 2025

Prepared for:

TRACY

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Tracy Citywide Public Safety Master Plan Update (December 2023)

EXECUTIVE SUMMARY AND INTRODUCTORY SECTIONS

INTRODUCTION

The City of Tracy (City) is located in the Central Valley and is the second most populated city in San Joaquin County (County). The City spans an area of about 26 miles within a triangle formed by Interstate 205 to the north, Interstate 580 to the southwest, and Interstate 5 to the east. The City is located near both fertile and infertile agricultural lands, due to a region of hills west of Tracy. The City is a railroad town that came from the mid-19th century construction.

The City was founded in 1878 and incorporated as a city in 1910. The City of Tracy grew rapidly and prospered as the center of an agricultural area, even when larger railroad operations began to decline in the 1950s. Competition with trucking and automobiles resulted in widespread railroad restructuring. The City has its origins associated with the Central Pacific Railroad, which ran from Sacramento through Stockton to the San Francisco Bay area. The City's ties to the agriculture industry allowed for steady growth in early to mid-20th century but growth accelerated starting in the 1980's as the City served as an extended bedroom community to the San Francisco, Oakland, and Silicon Valley metropolitan areas.

The City is part of the San Jose-San Francisco-Oakland, California Combined Statistical Area, an extension of the Bay Area. At the time of the 2020 U.S. Census, the City population was 93,000. The California Department of Finance estimates that as of January 1, 2023, the City population is 95,615, incorporating the 2020 Census benchmark.

As the resident population and non-resident employment in the City increase, there exists a correlating rise in the demand for public infrastructure and services to support the increased demand on the City. California's Assembly Bill 1600 (AB 1600) adopted in 1987 and codified as California Government Code Section 66000 et. seq., allows the City to impose Development Impact Fees on new development within the City. Development Impact Fees (DIFs) are one-time charges on new development that is collected and used by the City to cover the cost of capital facilities, vehicles, and equipment that are required to serve new growth.

In March 2013, the City adopted the Citywide Public Safety Master Plan completed by Hammond & Playle Architects. Following the adoption of the Master Plan, the City hired Harris & Associates to calculate the Public Safety Impact Fee Program (May 2013). The Public Safety Impact Fees were adopted in January of 2014 along with other Master Plan Fees and established the fees for development in the new areas of the City that were not already covered in one of the City's existing fee programs. The Public Safety Fees were updated on September 16, 2014 to revise the public safety communication tower project. In May of 2017, the South County Fire Authority Standards of Cover Study (SOC Study) was completed and recommended that the City build two new fire stations and relocate two existing stations. The Public Safety Fee was updated in August 2019 to

reflect revised cost estimates and service coverage areas for the four proposed fire stations as well as split the Public Safety Fee into four separate fee components: Fire, Police, Communication Facilities, and Program Administration. In the years since, the City has applied an annual Engineering News Record (ENR) Construction Cost Index (CCI) increase to the fees but has not completed a comprehensive update.

The City hired Indigo | Hammond & Playle Architects, LLP to complete the Citywide Public Safety Master Plan Update (December 2023), (PSMP). The PSMP was adopted at City Council on April 16, 2024. The purpose of this Nexus Study is to incorporate the findings from the PSMP and update the Public Safety Impact Fee Program.

The goal of the City is to develop a fee program that achieves the funding objectives required to fund facilities identified in the master plans, balances fee levels with desired economic growth, and complies with the legal requirements of Assembly Bill 1600 (AB 1600) and Assembly Bill 602 (AB 602).

NEXUS STUDY

Purpose

As development occurs in the City, new backbone infrastructure and capital facilities are required to mitigate the increased demand created by new residents and workers. DIFs fund this required backbone infrastructure and capital facilities as well as the related administrative costs through the City's fee program. The Master Plan Fee Program Area contains separate fee categories for each type of infrastructure and capital facilities. This Nexus Study updates the Public Safety Impact Fee with information provided in the updated PSMP.

This report is designed to satisfy AB 1600 Nexus requirements, AB 602 guidance, and provide the necessary technical analysis to support the adoption of the updated fees. The fees will be effective 60 days after the City's final action establishing and authorizing the collection of the fees.

Fee Program Costs The Public Safety Fees are based on the new development's fair share of the costs of the public safety facilities identified in the Public Safety Master Plan. The PSMP identified $129.11 million (2025$) of Capital Improvement Program (CIP) construction projects that are needed to be built to serve the public safety needs of the City of Tracy. Due to the delay in the adoption of the Nexus Study, the ENR CCI change from 2024 to April of 2025 was analyzed, but due to the fact that there has not been a significant change, the costs are not further being updated. Of the identified amount, $85.96 million is to be funded by the Public Safety Fee Program.

The Public Safety Master Plan Fees are based on new development's fair share of the facilities and costs identified in the Public Safety Master Plan after factoring for other funding sources. The fees account for the amount expended since the fee program started, existing fund balances, outstanding

credits/reimbursements, and Cordes Ranch's deferred payment. The Fire Facilities are sized to serve the buildout population of the City and the remaining cost to fund is $38.50 million. The Police Facilities are sized to serve the City's 2040 population and the remaining cost to fund is around $46.93 million. Similarly, the Communication Facilities are sized to the 2040 population of the City and the remaining cost to fund is roughly $1.88 million. This does not account for any future inflationary escalation of fees.

Updated Fees

Pursuant to AB 602, residential development fees are to be assessed on a per square foot basis. To yield consistency across fees assessed on non-residential land uses, non-residential development fees will continue to be assessed per 1,000 building square feet. **Table ES-1** shows the proposed updated Public Safety Fee components (Fire, Police, and Communication Facilities) that make up the total Public Safety Fee.

Table ES-1: Proposed Public Safety Impact Fees

	Public Safety			
Land Use	**Fire**	**Police**	**Communication Facilities**	**Total Public Safety**
Residential (per SF)[1]				
Single Family Residential	$0.49	$1.01	$0.04	$1.54
Multi-Family Residential (Attached 2-4)	$0.65	$1.34	$0.05	$2.04
High Density Residential (Attached 4+)	$0.95	$1.96	$0.08	$2.99
Non-Residential (per 1,000 Bldg SF)[1]				
Office	$583	$1,209	$48	$1,840
Commercial	$352	$731	$29	$1,112
Industrial	$115	$239	$10	$364

[1] Residential fees rounded to the nearest hundredths. Non-Residential fees rounded to the nearest dollar.

Proposed Fees Comparison with Existing Fees

Table ES-2 compares the proposed total Public Safety Fee to the existing total Public Safety Fee (as of July 1, 2024). The existing residential per unit fee was converted to a fee per square foot using the same average unit sizes as the proposed fee. Further information on the comparison is described within Section 2 of this report.

Table ES-2: Proposed Public Safety Fees Comparison to Existing Public Safety Fees

Land Use	Total Public Safety Fee		
	Proposed Fee	Existing Fee	Percent Change
Residential (per SF)			
Single Family Residential	$1.54	$0.83	84%
Multi-Family Residential (Attached 2-4)	$2.04	$1.14	79%
High Density Residential (Attached 4+)	$2.99	$1.46	104%
Non-Residential (per 1,000 Bldg SF)			
Office	$1,840.00	$1,053.91	75%
Commercial	$1,112.00	$632.36	76%
Industrial	$364.00	$210.80	73%

NEXUS STUDY REQUIREMENTS (ASSEMBLY BILL 1600)

AB 1600 was enacted by the State of California in 1987 creating the Mitigation Fee Act - Section 66000 et seq. of the Government Code. The Mitigation Fee Act requires that all public agencies satisfy the following requirements when establishing, increasing, or imposing a fee as a condition of approval of a development project:

1. Identify the purpose of the fee.
2. Identify the use to which the fee is to be put. If the use is financing public facilities, the facilities shall be identified.
3. Determine how there is a reasonable relationship between the fees use and the type of development project on which the fee is imposed.
4. Determine how there is a reasonable relationship between the need for the public facility and the type of development project on which the fee is imposed.
5. Determine how there is a reasonable relationship between the amount of the fee and the cost of the public facility or portion of the public facility attributable to the development on which the fee is imposed.

The purpose of this report is to demonstrate that the Public Safety Fee comply with the Mitigation Fee Act. The assumptions, methodologies, facility standards, costs, and cost allocation factors that were used to establish the nexus between the fees and the development on which the fees will be charged are summarized in the subsequent section of this report.

ASSEMBLY BILL 602

Assembly Bill (AB) 602, enacted by the State of California in 2021, amended Sections 65940.1 and 66019 of, and added Section 66016.5 to the Government Code. AB 602 requires that if a local

agency conducts and adopts an impact fee nexus study after January 1, 2022, the local agency shall follow all of the following standards and practices:

1. Before the adoption of an associated development fee, an impact fee nexus study shall be adopted.
2. When applicable, the nexus study shall identify the existing level of service for each public facility, identify the proposed new level of service, and include an explanation of why the new level of service is appropriate.
3. A nexus study shall include information that supports the local agency's actions, as required by subdivision (a) of Section 66001 of the Government Code.
4. If a nexus study supports the increase of an existing fee, the local agency shall review the assumptions of the nexus study supporting the original fee and evaluate the amount of fees collected under the original fee.
5. A nexus study adopted after July 1, 2022, shall calculate a fee imposed on a housing development project proportionately to the square footage of proposed units of the development. A local agency that imposes a fee proportionately to the square footage of the proposed units of the development shall be deemed to have used a valid method to establish a reasonable relationship between the fee charged and the burden posed by the development. A nexus study is not required to comply with the requirements to calculate a fee imposed on a housing development project proportionally to the square footage of the proposed units if the local agency makes the following findings:
    - An explanation as to why square footage is not appropriate metric to calculate fees imposed on housing development project.
    - An explanation that an alternative basis of calculating the fee bears a reasonable relationship between the fee charged and the burden posed by the development.
    - That other policies in the fee structure support smaller developments or otherwise ensure that smaller developments are not charged disproportionate fees.
6. Large jurisdictions shall adopt a capital improvement plan as a part of the nexus study.
7. All studies shall be adopted at a public hearing with at least 30 days' notice, and the local agency shall notify any member of the public that requests notice of intent to begin an impact fee nexus study of the date of the hearing.
8. Studies shall be updated at least every eight years, beginning on January 1, 2022.
9. The local agency may use the impact fee nexus study template developed by the Department of Housing and Community Development pursuant to Section 50466.5 of the Health and Safety Code.

This report demonstrates that the Public Safety Fee complies with AB 602.

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Section 1 POPULATION AND LAND USE ASSUMPTIONS

LAND USE TYPES

To ensure a reasonable relationship between each fee and the type of development paying the fee, different land use types must be distinguished. The land use categories used in this analysis are defined below.

- **Single Family Residential (SFR)**: Detached single-family dwelling units. Includes very low density, low density, and age-restricted units.
- **Multi-Family Residential (MFR)**: Attached residential project consisting of 2 to 4 units.
- **High Density Residential (HDR)**: Attached residential project consisting of 4 or more attached units.
- **Accessory Dwelling Unit (ADU)**: A second unit, attached or detached from a SFR.
- **Office**: All general, professional, and medical office development.
- **Commercial**: All commercial, retail, educational, hotel/motel development, and mixed-use development.
- **Industrial**: All manufacturing and warehouse development.

Some developments may include more than one land use type, such as an industrial warehouse with living quarters (a live-work designation) or a planned unit development with both Single and Multi-Family uses. In these cases, the fees will be calculated separately for each land use type.

Growth projections are used as indicators of demand. The City's existing population, as well as 2040 and buildout population projections, are critical assumptions used to calculate the components that make up the Public Safety Fee. The following resources were used:

- Estimates of population projections and total development through 2040 and buildout were based on the City's Land Use Plan by TAZ provided by the City's Planning Department and updated to remove permits that were pulled between the time the projections were made and May 23rd, 2025. Adjustments were made to accommodate recent development trends and planning documents. 1,685 High-Density Residential units were shifted from buildout projections to 2040 projections to match Master Plan assumptions. Non-residential 2040 projections were scaled using the Transportation Master Plan growth assumptions.
- Estimated persons per household data were based on the 2021 US Census American Community Survey.
- Existing population estimates are from the 2022 California Department of Finance.
- Worker projections were based on the employment density per worker identified in the U.S. Green Building Council LEED BD+C Default Occupancy Counts.

Table 1-1 identifies the estimated growth projections to year 2040 and to buildout.

Table 1-1: Projected New Population and Employee Growth (2040 and Buildout)

Land Use	Density	Total Projected New Development by 2040		Total Projected New Development at Buildout	
Residential	*Persons Per Household*[1]	*Dwelling Units*	*New Population*	*Dwelling Units*	*New Population*
Single Family Residential[2]	3.50	8,239	28,837	15,539	54,387
Multi-Family Residential (Attached 2-4)	2.80	319	893	875	2,450
High Density Residential (Attached 4+)[3]	2.60	3,097	8,052	3,871	10,065
Subtotal Residential		**11,655**	**37,782**	**20,285**	**66,902**
Non-Residential[4]	*Employment Density*[5]	*Square Feet*	*New Employees*	*Square Feet*	*New Employees*
Office	300	3,079,804	10,266	4,952,249	16,507
Commercial	500	7,603,107	15,206	12,225,611	24,451
Industrial	1,500	44,050,950	29,367	70,832,851	47,222
Subtotal Non-Residential		**54,733,861**	**54,840**	**88,010,711**	**88,180**

Source: City provided land use TAZ data. Updated to remove developments that have pulled permits as of 05/23/2025.

[1] Persons per household assumption using data from the US Census American Community Survey (2021).

[2] Includes Very Low Density, Low Density Residential, and Single Family Age Restricted.

[3] Includes High Density and Very High Density Residential. 1,685 units shifted from Buildout to 2040 to match Master Plan assumptions.

[4] Non-residential 2040 projections scaled using Transportation Master Plan assumptions.

[5] Employment density is the square feet per worker based on U.S. Green Building Council LEED BD+C Default Occupancy Counts.

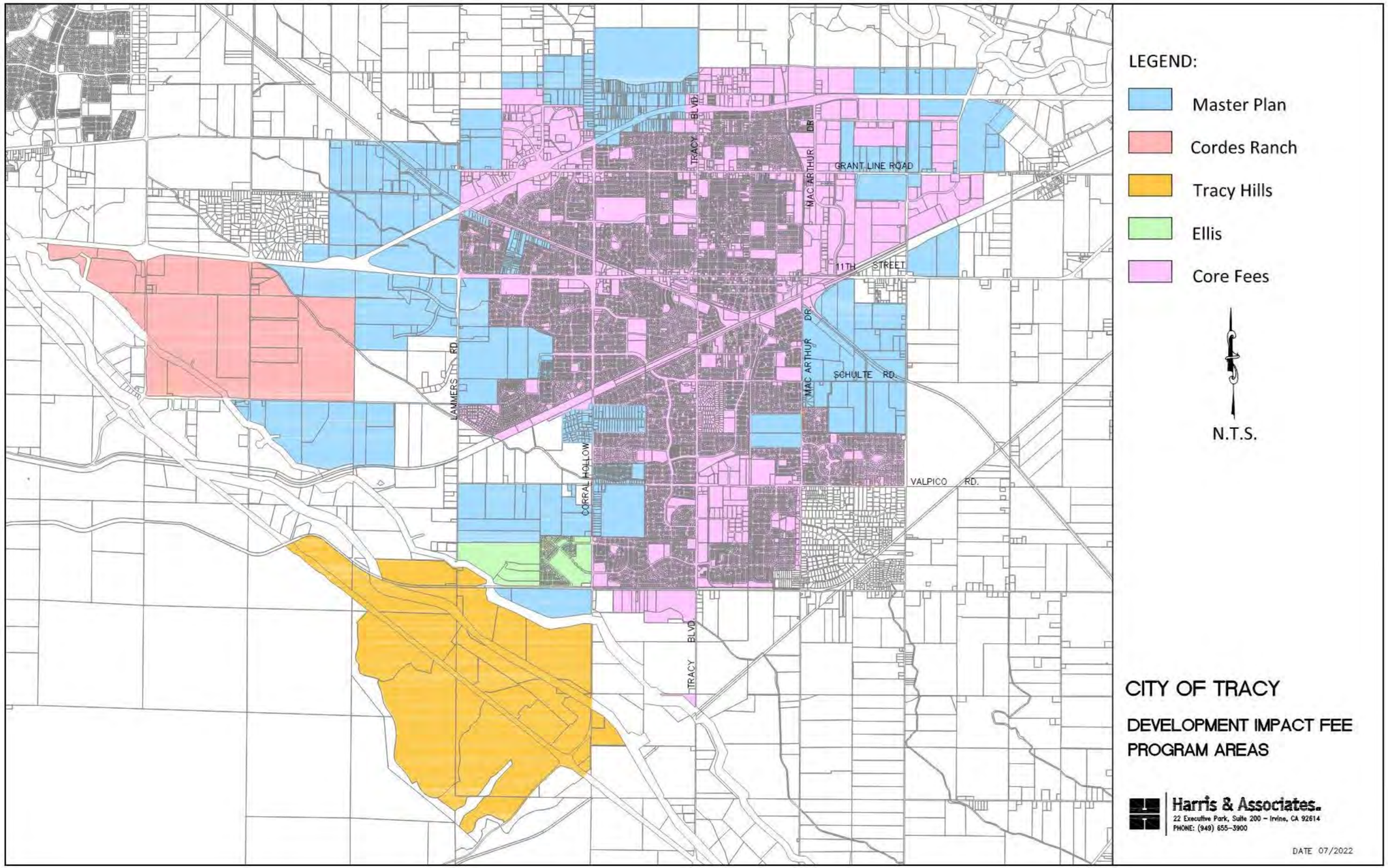
SERVICE POPULATION

Demand for services and the associated facilities is based on the City's future service population, which includes residents and workers. In calculating the service population for new growth, workers are weighted less than residents to reflect a lower service demand. Workers are weighted at half that of a resident based on the methodology established in the City's 2013 Public Safety Master Plan. The discount factor reflects the fact that employees typically generate less service demand than residents because they are present in the community for a limited portion of the day. However, even though workers are present only a portion of the day, the business benefits from round-the-clock public safety services, therefore 0.5 is used to reflect this lower demand.

The PSMP identified the demand for fire services and the associated facilities based on the City's service population at buildout. The PSMP identified the demand for police and communication services and the associated facilities based on the City's 2040 projected service population.

Figure 1-1 shows the Master Plan Fee program areas. Cordes Ranch and Tracy Hills are depicted in separate colors to differentiate that while they are generally subject to the Master Plan fees, they have agreements in place with the City that details specific adjustments. The Core Fees program area has their own set of fees as outlined in the "Core Fees Development Impact Fee Study" adopted August 2021 and the Ellis program area has their own set of fees as outlined in the "Ellis Program Area Finance and Implementation Plan" adopted August 2013.

Figure 1-1: City of Tracy Fee Program Areas



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RESIDENT AND EMPLOYMENT DENSITY

Using persons per household (PPH) data for residential units and employment density data for non-residential buildings is a common metric used to establish a reasonable relationship between the demand created by the development project and the fees charged. The residential density factors were derived using information from the US Census American Community Survey (2021) and the non-residential employment density factors are based on U.S. Green Building Council LEED BD+C Default Occupancy Counts. The following average density factors are used for each land use type.

Residential	**Density**
Single Family	3.50 residents per dwelling unit
Multi-Family (Attached 2-4)	2.80 residents per dwelling unit
High Density (Attached 4+)	2.60 residents per dwelling unit
Non-Residential	**Density**
Office	1 worker per 300 square feet
Commercial	1 worker per 500 square feet
Industrial	1 worker per 1,500 square feet

AVERAGE UNIT SIZES

To meet AB 602 requirement five (5), that states that a fee imposed on a housing development project shall be calculated proportionately to the square footage of proposed units of the development, this Nexus Study calculates a fee per unit and then uses the average unit size for Single Family Residential, Multi-Family Residential (Attached 2-4), and High Density Residential (Attached 4+) based on the estimated average size of planned new development within each land use category in the City to convert to a fee per square foot. The average unit size is based on the livable square footage of the residential units.

Basing the average unit size on livable square footage for all residential units is not only consistent with industry standard for fee calculations, but it also provides a strong nexus between the impact of the unit and the fee amount. A good example of industry standard are school fees in California. In California, school fees are based on assessable space, which means a quantity equal to the area (expressed in square feet) within the perimeter of a residential structure, not including the carport, communal walkway, garage, overhang, patio, enclosed patio, detached accessory structure or similar structure.

Multi-Family and High Density Residential projects that include communal spaces (i.e., clubhouse, maintenance facility, gym, etc.) will not be assessed impact fees on such areas as the

impact is considered to be captured within the residential fees. Areas that contain employees and are accessible by the public will be charged impact fees according to use (i.e., leasing office would pay office fees).

Based on the estimated average size of planned new development within each land use category in the City of Tracy, the following average unit sizes are utilized in this study.

Single Family Residential…… 2,500 Square Feet Per Unit
Multi-Family Residential (Attached 2-4)…….. 1,500 Square Feet Per Unit
High Density Residential (Attached 4+)...……. 950 Square Feet Per Unit

The City will monitor the average size of new housing units in the City on an annual basis and if the average size of units is significantly less than anticipated, the fees will be updated as part of the annual update to reflect this change in order to ensure the fee program does not fall short.

As detailed in the next section, the fee per square foot is calculated by dividing the fee per unit by the average size shown above for each residential unit type. Fees for Multi-Family Residential and High Density Residential result in a higher fee per square foot than Single Family Residential due to the higher density of people per square foot of space.

Section 2 PUBLIC SAFETY FEES

COST SUMMARY AND CIP

The Public Safety Fees will fund the expansion of public safety facilities for Fire, Police and Communication Facilities. This study focuses on the costs that are attributable only to new development. The 2023 Public Safety Master Plan updated the cost estimates for Fire facilities needed by the City's buildout population and Police and Communication facilities needed by the City's Horizon Year population (2040). The costs in the PSMP were provided in 2023 dollars and are being escalated in the Nexus Study to 2024 dollars using the ENR CCI for San Francisco (June 2023 to February 2024). Due to the delay in the adoption of the Nexus Study, we analyzed the ENR CCI change from 2024 to April of 2025 but due to the fact that there has not been a significant change, the costs are not further being updated.

The Public Safety Master Plan identified $129.11 million (2025$) of Capital Improvement Program (CIP) construction projects that are needed to be built to serve the public safety needs of the City of Tracy, but only $85.96 million is to be funded by the Public Safety Fee Program. The Public Safety Master Plan Fees are based on new development's fair share of the facilities and costs that are identified in the Public Safety Master Plan. The fee calculation accounts for the amount expended since the fee program started, the existing fund balances, outstanding credits/reimbursements, and Cordes Ranch's deferred payment.

The Fire Facilities are sized to serve the buildout population of the City and the cost attributable to the fee program is $31.77 million. The Police Facilities are sized to serve the City's 2040 population and the cost attributable to the fee program $51.52 million. Similarly, the Communication Facilities are sized to the 2040 population of the City and the cost attributable to the fee program approximately $2.67million.

The Fire Facilities Fee component of the Public Safety Fee was originally established in 2014 with the adoption of the "Public Safety AB1600 Development Impact Fee Technical Memo" (Resolution 2014-010) and was updated in 2019 to incorporate the findings from the *South County Fire Authority Standards of Cover Study*. The percent attributable to future development for fire facilities remains mostly consistent and in line with the 2019 Development Impact Fee Update, which provided a detailed analysis of new development's fair share of each of the fire stations. However, based on discussions with the Tracy Rural Fire Department, a few reductions in fair share were made to better reflect the County's anticipated new development. These changes included reducing the fair share for the Cordes Ranch Fire Station to 93.5%. In addition, the training facility cost was reduced to 90% of the cost remaining after deducting the $2.6 million grant. Tracy Rural will fund 10% from non-City of Tracy impact fee funding sources. The Fire Station Headquarters facility project was removed from the fee program since the planned remodel

at this site to meet training facility needs is now planned to be met at the expanded Training Facility site. To account for development that has occurred since the start of the fee program, expenditures to date and fund balances are incorporated into the fee calculations.

In order to verify that the proposed fire facilities do not raise the existing level of service, **Table 2-10**: Fire Existing and Proposed Level of Service calculates the level of service as of 2013, 0.45 square feet per capita, and compares that to the square foot per capita the fee program is funding, 0.41 square feet per capita. As such this comparison confirms that the level of service is not being increased from the baseline level of services.

The Police Facilities Fee component of the Public Safety Fee was originally established in 2014 with the adoption of the "Public Safety AB1600 Development Impact Fee Technical Memo" (Resolution 2014-010) and has not been comprehensively updated since, besides annual inflationary indexing. The PSMP identified four facilities that are to be funded through the Police Facilities Fee component, shown in **Table 2-4**. The percent attributable to future development factors in level of service assumptions from the start of the fee program (2014) as this was the time the existing level of service and deficiencies were established. Since that time, additional population has been added and fees have been collected, but the facilities have not been constructed. The City is waiting for adequate fee collection in order to fund the needed facilities and has leased space to accommodate growth until the funds are received. Expenditures to date and the fees collected since the fee program was originally adopted are removed from the facility costs. Remodel costs for both the police station and the training center are considered existing deficiencies that are not attributable to new development and factored out of the percent attributable to the Police Facilities Fee. To account for development that has occurred since the start of the fee program, fund balances are incorporated into the fee calculations.

To ensure that new development does not fund more than their fair share of the facilities for the Police Buildings (combining the police station and substation) and Animal Shelter, the 2013 existing building square footage in each category is divided by the 2013 population (81,548) to determine a baseline level of service represented in square feet per capita, not factoring in workers. It should be noted that the Animal Shelter was built after 2013 but is factored into the existing building square footage because the Animal Shelter was funded through grant funding. The square foot per capita is then multiplied by the 2040 population growth projections identified in the PSMP minus the 2013 population (141,000-81,548=59,452) to determine the square footage that can be funded in 2040. Leased space is not factored into the calculation as existing building square footage since it is not owned by the City. The building square footage that can be funded in 2040 is then divided by the planned 2040 master plan square foot expansion to determine the percentage that can be funded through the fee program to maintain the existing level of service. This results in 95.4% (28,603 total square feet) of the police building expansion and substation

being attributable to new development and 100% of the Animal Shelter. This calculation is shown in **Table 2-1**.

Table 2-1: Police – Level of Service Proportionate Calculation

	Existing Building Size (SF) (a)	Baseline LOS (SF per Capita) (b = a / 81,548)	2040 Size to Maintain Baseline LOS (SF) (c = b x 59,452)	2040 Master Plan Facility Size (SF) (d)	% of Facility to maintain LOS (e = c/d)
Police Buildings	37,416	0.459	27,288	28,600	95.4%
Animal Shelter [1]	9,692	0.119	7,075	5,900	119.9%

[1] Percent attributable to new development that will be used is 100%.

To further ensure that future development is not increasing the overall level of service for police facilities, **Table 2-12** was prepared. This table shows that the existing level of service in 2013 was 0.606 square feet per capita. To fund the overall police facilities at the baseline level of service, the portion of the Police Department expansion being funded from the fees is being reduced to 67.0%. This ensures that the fee funded portion does not fund facilities at a higher level than currently exists. Once remodel costs are removed, the share drops to 50.4% of the unfunded cost.

Based on conversations with the Public Safety Master Plan consultant, the training facility expansion size was determined based on police staffing levels, thus the fair share of costs attributable to the fee program is correlated to the increase in the number of police staff. Total staff, both sworn and civilian, identified in the 2013 MP was 137.74. Total staff projected for 2040 in the PSMP is 230.1. This 67.1% growth in staff (230.1 minus 137.74 divided by 137.74) is applied to the Training Facility costs as the fair share from the fee program. Once the remodel costs of the training facility are removed, the fair share drops to 65.4% of the total costs. The remodel costs can be found on page 81 of the PSMP. The police staffing ratios (police staff to population) that existed in 2013 are slightly higher than the proposed 2040 staffing levels, safeguarding that new development is not funding more than their fair share of the facility.

The Communication Facilities Fee component of the Public Safety Fee was originally established in 2014 with the adoption of the "Public Safety AB1600 Development Impact Fee Technical Memo" (Resolution 2014-010) and updated on September 16, 2014, by City Council by Resolution 2014-158, to incorporate updated costs for a communication tower and related communication equipment. The Public Safety Center and Emergency Operations Center was originally set to be funded through the Communication Facilities Fee as a standalone facility, but upon further evaluation, the PSMP shifted this facility to be incorporated within the planned police facilities. The Communication Facilities Fee is now comprised of Public Safety Radio Communications Facilities.

To ensure that new development does not fund more than their fair share of the Public Safety Radio Communications Facilities, the value of the existing communication facilities identified in the 2014 update is indexed to 2024 dollars and divided by the 2013 population (81,548) to determine a baseline level of service represented in cost per capita, not factoring in workers. The cost per capita is then multiplied by the 2040 population growth projections identified in the PSMP minus the 2013 population (141,000-81,548=59,452) to determine the cost that can be funded in 2040. The cost that can be funded in 2040 is then divided by the planned 2040 master plan cost to determine the percentage that can be funded through the fee program to maintain the existing level of service. This results in 51.3% of the costs for the communication facilities being attributable to new development. This calculation is shown in **Table 2-2**.

Table 2-2: Communication Facilities – Level of Service Proportionate Calculation

	Existing Value of Facilities (2014$) (a)	Existing Value of Facilities (2025$) (b)	Baseline LOS ($ per Capita) (c = b / 81,548)	2040 Cost to Maintain Baseline LOS ($) (d = c x 59,452)	2040 Master Plan Facility Costs ($) (e)	% of Facility to maintain LOS (f = d/e)
Communications Facilities	$ 2,409,857	$ 3,669,933	$ 45	$ 2,675,518	$ 5,216,023	51.3%

Table 2-3 and **Table 2-4** summarizes the public safety facilities, costs, and cost attributable to the fee program. These tables also serve as the Public Safety CIP as required by AB 602. The tables identify each of the facilities that will be paid for in part or whole by the Public Safety Fee. The exact start date is difficult to determine due to the fact that revenue collection varies based on the timing of new development and the needed facilities depend on the location of new development within the City. The City will use the CIP facilities identified here to guide their five-year Capital Improvement Plan based upon city need and timing of securing adequate revenue.

Effective January 1, 2023, the 2022 California Energy Code requires electrical solar and battery storage systems on all new City office buildings, including, proposed public police and fire facilities envisioned in this report. These solar costs have been included in the cost estimates for all new facility construction. Solar is not being added to existing buildings.

TRACY RURAL AGREEMENT

On February 20, 2018, the City of Tracy and Tracy Rural Fire District (District) entered into the South County Fire Authority Dissolution Agreement. Following the execution of the agreement, the City of Tracy is to disburse to the District the Public Safety Fire Fees attributable to mitigating the impact of new developments' share of the fire facilities located in the District's jurisdictional boundaries. The fire fees generated in the District's Boundaries are to be separated from the City's fees. **Figure 2-1** shows the various jurisdiction areas, the fees collected from the annexed, not detached area shown in light pink represent the areas with fees that will be distributed to Tracy Rural. The fire stations that are to be owned by Tracy Rural include Fire Station 94 (Cordes Ranch), Fire Station 95 (Tracy Hills), Fire Station 99 (Ellis), and the Training Facility. Station 95

was constructed by Tracy Hills, and they are receiving fee credits against their Public Safety Fees. The remaining Tracy Rural Fire Stations will be built by Tracy Rural utilizing the funds received through the Public Safety Impact Fee. Because the fees are a blend of both City of Tracy Fire Stations and Tracy Rural Fire Station, the City will reserve 15% of the fees collected for the construction of Fire Station 97 until the City has collected the total cost attributable to the fee program for this station.

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Table 2-3: Public Safety Facilities Costs - Fire

Facility Name	Construction Cost	35% Mark-up [1]	FF&E and Vehicles	Solar [1]	Land Acquisition	Total Project Cost (June 2023$)	Total Project Cost (Feb 2025$) [2]	Other Funding Sources [3]	Remaining Cost	Percent of Remaining Cost Attributable to Fee Program [4]	Total Cost Attributable to Fee Program	Other Funding Sources to Cover Cost Share of Existing Development
Fire Facilities												
Fire Headquarters | Station "A"	$0	$0	$0	$0	$0	$0	$0	$0	$0	n/a	**$0**	$0
Fire Station 91	$0	$0	$0	$0	$0	$0	$0	$0	$0	n/a	**$0**	$0
Fire Station 92	$0	$0	$0	$0	$0	$0	$0	$0	$0	n/a	**$0**	$0
Fire Station 93	$0	$0	$0	$0	$0	$0	$0	$0	$0	n/a	**$0**	$0
~~Fire Station 94~~ (To be relocated, property owned by SCFA)	$0	$0	$0	$0	$0	$0	$0	$0	$0	n/a	**$0**	$0
Fire Station 94 (Relocation - Cordes Ranch Area) [5]	$6,942,300	$2,429,805	$2,600,000	$620,356	$500,000	$13,092,000	$13,228,515	($1,000,000)	$12,228,515	93.5%	**$11,433,662**	$794,853
Fire Station 95 (Tracy Hills Area) [6]	$0	$0	$0	$0	$0	$0	$0	$0	$0	n/a	**$0**	$0
~~Fire Station 97~~ (To be relocated and property sold) [7]	$0	$0	$0	$0	$0	($451,350)	($456,056)	$0	($456,056)	100.0%	**($456,056)**	$0
Fire Station 97 (Relocation - Valpico, incl. Ladder Bay) [8]	$6,942,300	$2,429,805	$1,000,000	$620,356	$500,000	$11,492,000	$11,611,831	($4,470,000)	$7,141,831	82.0%	**$5,856,301**	$1,285,530
Fire Station 99 (Ellis Area)	$5,427,849	$1,899,747	$1,000,000	$561,813	$233,012	$9,122,000	$9,217,118	($825,332)	$8,391,786	93.5%	**$7,846,320**	$545,466
Fire Training Facility - Phase 2 & 3 [9]	$6,793,881	$2,377,858	$500,000	$692,252	$0	$10,364,000	$10,472,069	($2,600,000)	$7,872,069	90.0%	**$7,084,862**	$787,207
Total Fire Facilities	**$26,106,330**	**$9,137,215**	**$5,100,000**	**$2,494,777**	**$1,233,012**	**$43,618,650**	**$44,073,477**	**($8,895,332)**	**$35,178,145**	-	**$31,765,089**	**$3,413,056**

Source: City of Tracy Public Safety Master Plan, prepared by Indigo and Hammond & Playle Architects, LLP (June 2023).

[1] Mark-up includes: 10% Design and Planning, 10% Construction Maintenance, 15% General Contingency. Solar Costs include mark-ups.

[2] The Total Project Costs on construction projects are escalated to current dollars using the San Francisco ENR CCI.

[3] Based on the City of Tracy Public Safety Master Plan, prepared by Indigo and Hammond & Playle Architects, LLP (June 2023).

[4] Based on the percentages from the 2019 AB 1600 Development Impact Fee Update (Harris & Associates) and updated to reflect development changes and agreements with Tracy Rural Fire.

[5] $1,000,000 of City's obligation is coming from the fire engine relocation from existing Fire Station.

[6] Fire Station 95 completed and accepted by the City February 15, 2022. Tracy Hills received $6,790,794 in credits. City purchased apparatus for the fire station.

[7] The Master Plan proposes that the City sell the decommissioned property once the replacement station has been built.

[8] For the relocation of Fire Station 97, the City Core Area contributes to the cost of the fire station and also the City is contributing $1,000,000 in the form of the fire engine relocation.

[9] The Fire Training Facility other funding sources include funding from a ARPA grant.

Table 2-4: Public Safety Facilities Costs – Police and Communication Facilities

Facility Name	Construction Cost	35% Mark-up [1]	FF&E and Vehicles	Solar [1]	Land Acquisition	Total Project Cost (June 2023$)	Total Project Cost (Feb 2025$) [2]	Other Funding Sources [3]	Remaining Cost	Percent of Remaining Cost Attributable to Fee Program [4]	Total Cost Attributable to Fee Program	Other Funding Sources to Cover Cost Share of Existing Development
Police Facilities												
Police Dept Remodel & Addition (Civic Center Site)	$31,599,384	$11,059,784	$2,160,114	$2,123,317	$0	$46,943,000	$47,432,492	$ (2,298,891)	$45,133,601	50.4%	**$22,747,335**	$22,386,266
South Tracy Police Substation	$9,479,695	$3,317,893	$648,049	$704,235	$1,760,000	$15,910,000	$16,075,899	$0	$16,075,899	95.4%	**$15,338,431**	$737,468
Police Dept Training Facility [5]	$4,887,202	$1,710,521	$36,098	$1,033,927	$0	$7,668,000	$7,747,957	$0	$7,747,957	65.4%	**$5,067,164**	$2,680,793
Police Dept Animal Shelter (Phase II)	$5,044,104	$1,765,436	$1,000,000	$472,114	$0	$8,282,000	$8,368,359	$0	$8,368,359	100.0%	**$8,368,359**	$0
Subtotal Police Facilities	**$51,010,385**	**$17,853,634**	**$3,844,261**	**$4,333,593**	**$1,760,000**	**$78,803,000**	**$79,624,707**	**($2,298,891)**	**$77,325,816**		**$51,521,289**	**$25,804,527**
Communication Facilities												
Radio Communications Tower	$862,240	$301,784	$4,067,185	$0	$125,000	$5,356,000	$5,411,849	$ (195,826)	$5,216,023	51.3%	**$2,675,518**	$2,540,505
Subtotal Communications Facilities	**$862,240**	**$301,784**	**$4,067,185**	**$0**	**$125,000**	**$5,356,000**	**$5,411,849**	**$ (195,826)**	**$5,216,023**		**$2,675,518**	**$2,540,505**

Source: City of Tracy Public Safety Master Plan, prepared by Indigo and Hammond & Playle Architects, LLP (June 2023).

[1] Mark-up includes: 10% Design and Planning, 10% Construction Maintenance, 15% General Contingency. Solar Costs include mark-ups.

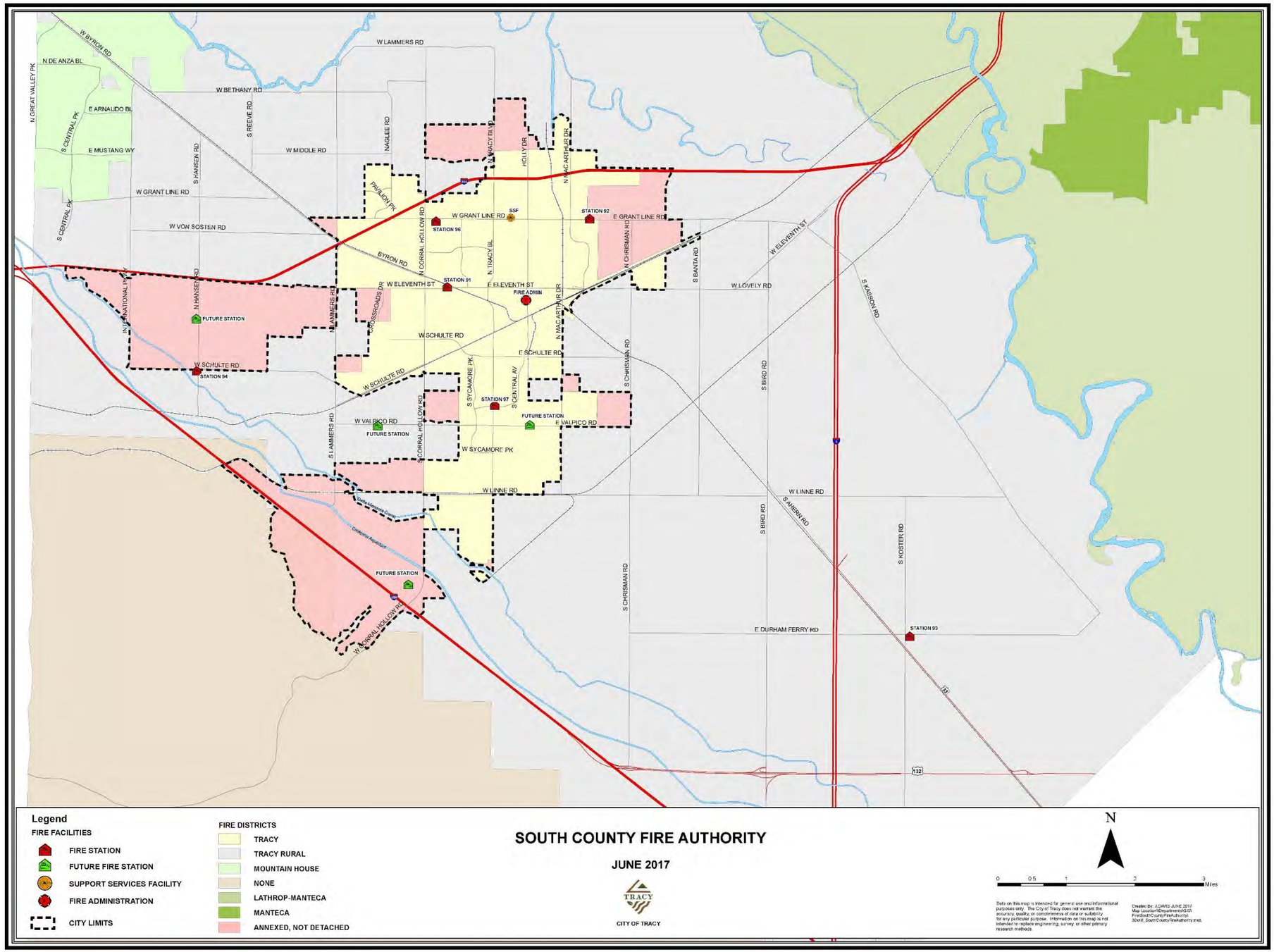
[2] The Total Project Costs on construction projects are escalated to current dollars using the San Francisco ENR CCI.

[3] Includes contributions from Core Fees (August 2021) escalated to current dollars using the San Francisco ENR CCI (rounded to nearest dollar) and estimated Ellis contribution.

[4] Remodel costs are not attributable to new development which includes $8,284,800 for the Police Remodel & $137,760 for the Police Training Remodel (plus mark-ups).

[5] Land costs were removed due to the City already owning the land.

Figure 2-1 – Tracy Rural Boundaries



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FEE METHODOLOGY

The Public Safety Fee uses the Planned Facilities Method to calculate the three fee components that make up the total fee. As defined in the California Department of Housing and Community Development Impact Fee Nexus Study Template, the Planned Facilities Method "estimates the costs of future facilities needed to serve new development based on a long-range expenditure plan for these future facility costs." The Public Safety Fee is based on new development's fair share of the facilities identified as needed in the Public Safety Master Plan.

Each component of the Public Safety Fee is calculated based on the cost per equivalent dwelling unit (EDU). An EDU factor is used to equate each land use to that of a single-family home. The EDU factor is calculated based on the density factor for each residential and non-residential land use. Density is measured as "persons per dwelling unit" for residential uses or "square feet per worker" for nonresidential uses. The following steps are used to calculate the EDU Factor for each land use.

1. The residential units and non-residential square feet are multiplied by the density to calculate the resident and worker projections.
2. The resident equivalents for non-residential land uses are calculated by multiplying the employee projections by 0.5.
3. The EDUs are then calculated by dividing the resident equivalents by the Single-Family Residential density (3.50).
4. Finally, the EDU factor is calculated by dividing each land uses EDUs by the residential units or nonresidential square feet in that category.

The EDU calculations for the Fire Facilities are shown in **Table 2-5** and are based on buildout population projections for the City as shown in **Table 1-1**.

Table 2-5: Equivalent Dwelling Units – Fire Facilities

Land Use	Units / Building SF [1]	Density [2]	Resident/ Employee Projection	Resident Equivalent [3]	EDUs	EDU Factor
Residential						
Single Family Residential	15,539	3.50	54,387	54,387	15,539	1.00
Multi-Family Residential (Attached 2-4)	875	2.80	2,450	2,450	700	0.80
High Density Residential (Attached 4+)	3,871	2.60	10,065	10,065	2,876	0.74
Subtotal Residential	**20,285**		**66,902**	**66,902**	**19,115**	
Non-Residential						
Office	4,952,249	300	16,507	8,254	2,358	0.48
Commercial	12,225,611	500	24,451	12,226	3,493	0.29
Industrial	70,832,851	1,500	47,222	23,611	6,746	0.095
Subtotal Non-Residential	**88,010,711**		**88,180**	**44,091**	**12,597**	
Total				**110,993**	**31,712**	

[1] Based on projected land use at Buildout of the City based on TAZ data. Updated to remove developments that have pulled permits as of 05/20/2025.

[2] Density is measured as "persons per dwelling unit" for residential land uses and "square feet per worker" for non-residential land uses.

[3] Workers are weighted at 0.5 that of a resident. Resident Equivalents for Non-Residential is rounded to nearest whole number.

The EDU calculations for the Police and Communication Facilities are shown in **Table 2-6** and are based on the 2040 population projections for the City as shown in **Table 1-1**.

Table 2-6: Equivalent Dwelling Units – Police and Communication Tower

Land Use	Units / Building SF [1]	Density [2]	Resident/ Employee Projection	Resident Equivalent [3]	EDUs	EDU Factor
Residential						
Single Family Residential	8,239	3.50	28,837	28,837	8,239	1.00
Multi-Family Residential (Attached 2-4)	319	2.80	893	893	255	0.80
High Density Residential (Attached 4+)	3,097	2.60	8,052	8,052	2,301	0.74
Subtotal Residential	**11,655**		**37,782**	**37,782**	**10,795**	
Non-Residential						
Office	3,079,804	300	10,266	5,133	1,467	0.48
Commercial	7,603,107	500	15,206	7,603	2,172	0.29
Industrial	44,050,950	1,500	29,367	14,684	4,195	0.095
Subtotal Non-Residential	**54,733,861**		**54,839**	**27,420**	**7,834**	
Total				**65,202**	**18,629**	

[1] Residential based on projected land use at 2040. Non-residential based on projected land use at 2040 adjusted to reflect employee growth assumptions tied to population growth trends from 2040 to buildout. Updated to remove developments that have pulled permits as of 05/20/2025.

[2] Density is measured as "persons per dwelling unit" for residential land uses and "square feet per worker" for non-residential land uses.

[3] Workers are weighted at 0.5 that of a resident. Resident Equivalents for Non-Residential is rounded to nearest whole number.

The cost per EDU for each fee component is calculated by taking the costs attributable to new development, subtracting the fund balance and expenditures, adding outstanding credits, subtracting deferred fees and dividing by the total number of EDUs. The cost per EDU calculations are shown in **Table 2-7**.

Table 2-7: Public Safety Cost per EDU

Fee Component	Attributable to Fee Program[1]	Expenditures to Date[2]	Fund Balance[3]	Outstanding Credits/ Reimb.[4]	Cordes Ranch Deferred Payment[4]	Remaining Cost to Fund[5]	Total EDUs	Cost/EDU[6]
Fire	$31,765,089	($331,361)	($32,302)	$7,225,007	($122,190)	$38,504,243	31,712	$1,214
Police	$51,521,289	($692,998)	($2,541,254)	($1,161,424)	($191,361)	$46,934,251	18,629	$2,519
Communication Facilities	$2,675,518	$0	($358,930)	($370,842)	($66,397)	$1,879,349	18,629	$101
Total	**$85,961,896**	**($1,024,359)**	**($2,932,486)**	**$5,692,741**	**($379,948)**	**$87,317,843**		**$3,834**

[1] Total may be slightly different than the Master Plan due to rounding.

[2] Some police costs include in the Master Plan were already spent and need to be removed from the remaining cost. This includes $390,000 that was to be prepaid by Tracy Hills and spent on Police Vehicles. $137,132 was spent on the PD training facility and EOC communication project.

[3] Fund balance as of 05/20/2025.

[4] Credit/reimbursements as of 05/20/2025.

[5] Cordes Ranch deferred fees per DA Section 6.3C (09/17/2013). Does not include PM.

[6] Rounded to the nearest dollar.

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FEE SUMMARY

The Public Safety Fee is converted into a fee per square foot for residential land uses by multiplying the EDU factors (**Table 2-5** and **Table 2-6**) by the cost per EDUs (**Table 2-7**) and then dividing by the average unit size of each land use in the City. The Public Safety Fees are converted into fee per 1,000 building square feet for non-residential land uses by multiplying the EDU factors (**Table 2-5** and **Table 2-6**) by the costs per EDU for each non-residential land use (**Table 2-7**). **Table 2-8** summarizes the Public Safety Fees by the three components that make up the fee. The fees due to Tracy Rural Fire District for the Public Safety Fire Fee component must be tracked separately in compliance with the Dissolution Agreement mentioned earlier in this report.

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Table 2-8: Public Safety Fees

Land Use	EDU Factor	Fire Fee	Police Fee	Communication Facilities Fee	Total Fee	Average Size[1]	Fire Fee	Police Fee	Communication Facilities Fee	Total Fee
Residential [2]		*(per Unit)*					*(per SF)* [4]			
Single Family Residential	1.00	$1,214	$2,519	$101	**$3,834**	2,500	$0.49	$1.01	$0.04	**$1.54**
Multi-Family Residential (Attached 2-4)	0.80	$971	$2,015	$81	**$3,067**	1,500	$0.65	$1.34	$0.05	**$2.04**
High Density Residential (Attached 4+)	0.74	$898	$1,864	$75	**$2,837**	950	$0.95	$1.96	$0.08	**$2.99**
Non-Residential [3]		*(per 1,000 Bldg SF)*					*(per 1,000 Bldg SF)* [4]			
Office	0.48	$583	$1,209	$48	**$1,840**	n/a	$583	$1,209	$48	**$1,840**
Commercial	0.29	$352	$731	$29	**$1,112**	n/a	$352	$731	$29	**$1,112**
Industrial	0.095	$115	$239	$10	**$364**	n/a	$115	$239	$10	**$364**

[1] Average size based on the average unit size of planned new development in the City of Tracy.

[2] The fee for residential will be applied to the livable square footage.

[3] The fee for non-residential will be applied to the building square footage.

[4] Residential fee rounded to nearest hundredth. Non-Residential fee rounded to the nearest dollar.

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FEE COMPARISON

Table 2-9 compares the proposed fee for public safety to the existing fee (as of July 1, 2024). The existing per residential unit fee was converted to a fee per square foot using the same average unit sizes as the proposed fees. The total Public Safety Fee is increasing due to the following reasons.

1. The estimated construction costs for facilities have been reassessed to better align with current market conditions and escalated construction costs. In addition, effective January 1, 2023, the 2022 California Energy Code requires electrical solar and battery storage systems on all **new** City office buildings, including, by and large, the proposed public safety facilities envisioned in this report. These solar costs have been included in the cost estimates for all new Public Safety facilities.
2. Facilities have been re-assessed as part of the master plan process and the updated facilities have been incorporated into the fee study. This included reducing the size of the main police station but adding a South Tracy Police Substation. In addition, phase II of an animal shelter is now included as well as separate police and fire training facilities. These facilities are necessary to meet the demands of new development.
3. The Communication Facilities Fee is decreasing due to the fact that the anticipated cost of the facility has not risen at the same rate as the ENR CCI for San Francisco that has been applied to the fees annually. In addition, a public safety center and Emergency Operations Center that were in the prior master plan is not included within this fee as the needs are being met by other facilities within the police category. This resulted in increases for the police fee category and a decrease in the communications fee.
4. Population assumptions have been updated from the previous master plan to reflect new census data that reflects an increase in the number of people residing in each unit. Because public safety impacts are the direct result of people, an increase in the estimated persons per household corresponds with an increasing fee.

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Table 2-9: Public Safety – Fee Comparison

Land Use	Fire			Police			Communication Facilities			Total Public Safety Fee		
	Proposed Fee	Existing Fee	Percent Change	Proposed Fee	Existing Fee	Percent Change	Proposed Fee	Existing Fee	Percent Change	Proposed Fee	Existing Fee	Percent Change
Residential (per SF)												
Single Family Residential	$0.49	$0.32	54%	$1.01	$0.39	162%	$0.04	$0.13	-69%	$1.54	$0.83	84%
Multi-Family Residential (Attached 2-4)	$0.65	$0.43	50%	$1.34	$0.53	155%	$0.05	$0.18	-72%	$2.04	$1.14	79%
High Density Residential (Attached 4+)	$0.95	$0.56	70%	$1.96	$0.68	190%	$0.08	$0.23	-65%	$2.99	$1.46	104%
Non-Residential (per 1,000 Bldg SF)												
Office	$583.00	$402.04	45%	$1,209.00	$487.16	148%	$48.00	$164.71	-71%	$1,840.00	$1,053.91	75%
Commercial	$352.00	$241.22	46%	$731.00	$292.31	150%	$29.00	$98.83	-71%	$1,112.00	$632.36	76%
Industrial	$115.00	$80.41	43%	$239.00	$97.45	145%	$10.00	$32.94	-70%	$364.00	$210.80	73%

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EXISTING AND PROPOSED LEVEL OF SERVICE

AB 602 states, "When applicable, the nexus study shall identify the existing level of service for each public facility, identify the proposed new level of service and include an explanation of why the new level of service is appropriate."

The Fire Facilities' level of service was established in 2013 at the time the Public Safety Master Plan was adopted, as this was the time the fee program was put into place. Since that time, additional population has been added and fees have been collected through the fee program but other than Fire Station 95, additional facilities have not yet been completed due to the timing of necessary fee collection.

Table 2-10 compare the fire facilities square foot per capita when the fee program began compared to the planned square foot per capita at buildout. As shown, the level of service that is proposed to serve the population at buildout (0.41) does not exceed the level of service when the program began (0.45) nor does it exceed the 2025 level of service (0.46). It should be noted that not all of the costs associated with the expansions are funded through the fee program, therefore, this analysis is conservative in regards to showing that the fee program is not expanding the level of service.

Table 2-10: Fire Existing and Proposed Level of Service

Fire Facilities	2013 Square Feet	2025 Square Feet	Buildout Square Feet
Fire Administration Building	9,646	9,646	9,646
Fire Station 91	7,401	7,401	7,401
Fire Station 92	5,136	5,136	5,100
Fire Station 93	6,147	6,147	6,147
Fire Station 94 (relocation)	5,552	5,552	7,750
Fire Station 95		7,100	7,100
Fire Station 97 (relocation)	3,009	3,009	7,750
Fire Station 99	-	-	7,070
Fire Training Facility	-	-	9,900
Total Building Square Feet	*36,891*	*43,991*	*67,864*
Population (not including workers)	*81,548*	96,609	*164,935*
Fire Square Feet/Capita	**0.45**	**0.46**	**0.41**

The Police Facilities 2013 level of service uses the existing building square footage from the 2013 Public Safety Master Plan but also includes the existing Animal Shelter as this facility was constructed after the fee program was established but funded solely through grant funding. This additional space is a part of the City's existing facilities and serves the City but did not financially burden the police facilities fee program.

Table 2-11 identifies the 2013 square foot per capita of Police Facilities space compared to the square foot per capita at the Horizon Year 2040 and in 2025. The square foot per capita at horizon

year 2040 (0.62) is slightly higher than the 2013 square foot per capita (0.61) and the 2025 square footage (0.57). It should be noted that the 2025 level of service has dipped below the 2013 level of service due to the fact that the City has been collecting funds and is currently leasing additional space to serve their needs until adequate fee funding has been acquired. The leased space is not included in this analysis.

Table 2-11: Police Existing and Proposed Level of Service

Police Facilities	2013 Square Feet	2025 Square Feet	2040 Square Feet
Police Department	27,616	27,616	47,416
Police Station (old)	9,800	9,800	-
South Tracy Police Station	-	-	8,800
Training Facility	2,296	7,792	15,196
Animal Shelter (2015 - grant funded)	9,692	9,692	15,592
Total Building Square Feet	*49,404*	54,900	*87,004*
Population (not including workers)	*81,548*	96,609	*141,000*
Police Square Feet/Capita	**0.61**	**0.57**	**0.62**

Though the square foot per capita of Police Facilities is higher at the horizon year than in 2013 and 2025 this straightforward analysis does not factor in the proportionate cost split of planned police facilities to the fee program. These cost shares are described in the Cost Summary and CIP section above. To demonstrate that the fee program is not providing funding to raise the level of service, an analysis was completed that shows the square foot expansion funded through the fee program based on the fair shares described in the Cost Summary. **Table 2-12**, shows this calculation demonstrates that the square footage funded by the fee program (0.606) equals the square footage that existed at the start of the fee program (0.606). As mentioned above, the 2025 level of level of service is slightly below this due to the delay between fee collection and construction of new facilities. Once the City has accumulated enough funds, the facilities will be expanded. Until then, the City leases building space to serve the expanded needs.

Table 2-12: Police Existing and Proposed Level of Service Factoring in Fee Program Share

Police Facilities	2013 Square Feet	Additional SF to serve 2040	% of Additional SF Funded by Fee	Total SF Funded by Fee Program	2040 Square Feet (2013 + funded by fee program)	2025 Existing SF
Police Department	27,616	19,800	67.0%	13,266	40,882	27,616
Police Station (old)	9,800	-	0.0%	-		9,800
South Tracy Police Station	-	8,800	95.4%	8,396	8,396	
Training Facility	2,296	12,900	65.4%	8,437	10,733	7,792
Animal Shelter	9,692	5,900	100.0%	5,900	15,592	9,692
Total Building Square Feet	*49,404*	*47,400*		*35,999*	*75,603*	54,900
Population (not including workers)	*81,548*			*59,452*	*141,000*	*96,609*
Police Square Feet/Capita	**0.606**			**0.606**	**0.536**	**0.568**

Due to the nature of Communication Facilities, existing and proposed level of service cannot be tied to square foot per capita as Fire and Police facilities are able to. However, to ensure that new development is paying their fair share of the facility, the percent attributable to new development

is based on the existing level of service of new development. This proportionate split is detailed further within the Cost Summary & CIP section of this report.

NEXUS REQUIREMENT SUMMARY

AB 1600 requires that public agencies satisfy five requirements when establishing, increasing, or imposing a fee as a condition of approval of a development project. The required findings are as follows.

Requirement 1: Identify the purpose of the fee.

The purpose of the Public Safety Fee is to fund additional fire, police, and communication facilities that are needed to serve new development in the City. Each new resident and worker generates the need for the City to expand their facilities in order to provide adequate response times, hire and house new public safety personnel, and improve the City's emergency communication facilities. In order to accommodate these needs, new facilities will be built, or existing facilities will be expanded as shown within **Table 2-3** and **Table 2-4**.

Requirement 2: Identify the use of the fee.

The Public Safety Fee will be used to fund the public safety facilities including fire, police, and communication facilities summarized in **Table 2-3** and **Table 2-4**. These projects were identified in the Citywide Public Safety Master Plan Update, prepared by Indigo | Hammond & Playle Architects, LLP (December 2023) as facilities required to mitigate the impact of new development in the TIMP Fee program area.

Requirement 3: Determine how there is a reasonable relationship between the fee's use and the type of development project on which the fee is imposed.

The Public Safety Fee will be used to fund public safety projects consisting of new fire, police, and communication facilities necessary to serve the increased residents and workers in the City as shown in **Table 2-3** and **Table 2-4**. The Public Safety Fee is calculated based on the estimated number of new residents and workers that are generated by each new development. Workers are weighted at a lower weight than residents to reflect their lesser impact on the facilities. This weighting is calculated as resident equivalents and each component of the Public Safety Fee uses the resident equivalents to calculate an EDU factor to equate each land use to that of a single-family home. The EDU factor is calculated based on the density factor for each residential and non-residential land use. Density is measured as "persons per dwelling unit" for residential uses or "square feet per worker" for nonresidential uses. The cost per EDU is calculated and spread to each land use based on the EDU equivalent methodology ensuring a reasonable relationship between the fees use and the type of development project. These calculations are shown in **Table 2-5, Table 2-6, Table 2-7,** and **Table 2-8**.

Requirement 4: Determine how there is a reasonable relationship between the need for the public facility and the type of development project on which the fee is imposed.

Each new development is anticipated to generate either new residents or workers. The addition of these new residents and workers directly creates the need for additional public safety facilities for fire, police, and communication facilities, which are necessary in order to maintain the required level of service. The fees are based on the number of resident equivalents each new development is expected to generate, thus ensuring that the need for the facility is directly related to a particular development's impact. New workers generate a smaller demand than a resident and thus one worker is considered, on average, as equivalent to 0.5 times that of a resident. The relationship between the need for the facility and the type of development project is shown in **Table 2-5, Table 2-6, Table 2-7,** and **Table 2-8**.

Requirement 5: Determine how there is a reasonable relationship between the amount of the fee and the cost of the public facility or portion of the public facility attributable to the development on which the fee is imposed.

The Public Safety Fees will provide the funding for the required public safety facilities for fire, police, and communication facilities. These facilities and costs are summarized in **Table 2-3** and **Table 2-4**. The percentage attributable to new development is analyzed and described in detail in the Cost Summary and CIP section of the report**,** ensuring that new development does not pay more than their fair share of the facilities. The expenditures to date, fund balance, deferred payments, other funding sources, and costs attributable to existing development, were factored into calculating the remaining cost of each facility that is to be funded by the Public Facilities fee program. The remaining costs are then spread to each land use based on the number of new resident equivalents that the land use will generate calculated as an EDU factor as shown in **Table 2-5** and **Table 2-6**. The fees per EDU calculated in **Table 2-7** are then converted into fees for each land use in **Table 2-8**. By spreading the costs attributable to the Public Safety fee program based on the EDU factors, each new development is only paying for their fair share of the required facilities since the need for the facilities directly correlates to the addition of new residents and worker equivalents.

Section 3 IMPLEMENTATION AND ADMINISTRATION

IMPLEMENTATION

According to the California Government Code, prior to levying a new fee or increasing an existing fee, an agency must hold at least one open and public meeting with at least 30 days' notice. In addition, notice of the time and place of the meeting, including a general explanation of the matter to be considered, and a statement that the data required by this section is available, shall be mailed at least 14 days prior to the meeting to any interested party who files a written request with the local agency for mailed notice of the meeting on new or increased fees or service charges. Any written request for mailed notices shall be valid for one year from the date on which it is filed unless a renewal request is filed. At least ten days prior to this meeting, the agency must make data on infrastructure costs and funding sources available to the public. Notice of the time and place of the meeting and a general explanation of the matter are to be published in accordance with Section 6062a of the Government Code, which states that publication of notice shall occur for ten days in a newspaper regularly published once a week or more. Two publications, with at least five days intervening between the dates of first and last publication not counting such publication dates, are sufficient. The period of notice commences upon the first day of publication and terminates at the end of the tenth day, including therein the first day. The new or increased fees shall be effective no earlier than 60 days following the final action on the adoption or increase of the fees. Following adoption of the fees, the fees and supporting information must be placed on the City's website.

FEE PROGRAM ADMINISTRATIVE REQUIREMENTS

The Government Code requires the City to report every year and every fifth-year certain financial information regarding the fees. The City must make available within 180 days after the last day of each fiscal year the following information from the prior fiscal year:

1. A brief description of the type of fee in the account or fund.
2. The amount of the fee.
3. The beginning and ending balance in the account or fund.
4. The amount of the fee collected and the interest earned.
5. An identification of each public improvement for which fees were expended and the amount of expenditures.
6. An identification of an approximate date by which time construction on the improvement will commence if it is determined that sufficient funds exist to complete the project.
7. An identification of each improvement identified pursuant to requirement #6 listed on a previous report and whether construction began on the approximate date noted within that report. If construction did not commence by the approximate date provided in the previous report, identify the reason for the delay and a revised approximate commencement date.

8. A description of each interfund transfer or loan made from the account and when it will be repaid.
9. Identification of any refunds made and the number of persons or entities identified to receive those refunds once it is determined that sufficient monies have been collected to fund all fee related projects.

On October 11, 2023, California Governor Gavin Newson signed into law AB 516 which amended certain portions of the Mitigation Fee Act related to the annual and five-year reporting requirements. Under AB 516, Requirements 6 and 8 have been expanded to include the following:

> 6a. Identification of each public improvement identified in the previous report and whether construction began on the approximate date noted.
>
> 6b. For previously identified projects that did not start construction on the approximate date in the previous report, the reason for the delay and a revised approximate date that the local agency will commence construction, if applicable.
>
> 6c. For any refunds made, the number of persons or entities identified to receive those refunds.

The City must make this information available for public review and must also present it at the next regularly scheduled public meeting not less than 15 days after this information is made available to the public.

For the fifth fiscal year following the first deposit into the account or fund, and every five years thereafter, the City must make the following findings with respect to any remaining funds in the fee account, regardless of whether those funds are committed or uncommitted:

1. Identify the purpose to which the fee is to be put.
2. Demonstrate a reasonable relationship between the fee and the purpose for which it is charged.
3. Identify all sources and amounts of funding anticipated to complete financing any incomplete improvements.
4. Designate the approximate dates on which funding in item (3) above is expected to be deposited into the fee account.

As with the annual disclosure, the five-year report must be made public within 180 days after the end of the City's fiscal year and must be reviewed at the next regularly scheduled public meeting.

FEE ADJUSTMENT PROCEDURES

The Public Safety Fee may be adjusted periodically to reflect revised facility requirements, receipt of funding from alternative sources (i.e., state or federal grants), revised facilities or costs, changes

in demographics, changes in the average unit square footage, or changes in the land use plan. In addition, the fees will be automatically updated each year on July 1st based on the June ENR CCI for San Francisco. Due to the timing of when the fees will take into effect, the next fee adjustment will occur July 2026.

TIMING OF FEE PAYMENT

The Public Safety Fee will be collected at the time the building permit for the project is issued. All residential projects will pay a fee based on the livable square footage of the residential units. For residential projects that include multiple buildings, fees will be due at the time the building permit is issued for each building. The non-residential communal portion for high-density residential projects (i.e., clubhouse, maintenance facility, gym, etc.) will not be assessed impact fees as the impact is considered to be captured in the residential fees. Areas that are accessible by the public (i.e., a leasing office) will be charged impact fees according to use.

DESIGNATED RESIDENTIAL PROJECTS DEFERRED FEE PAYMENTS

California Senate Bill 937 (SB 937), which became effective on January 1, 2025, significantly delays the collection of fees for residential projects defined as "Designated Residential Development Projects." Specifically, SB 937 states that public agencies may not impose development impact fees on Designated Residential Development Projects until the project receives a Certificate of Occupancy or Temporary Certificate of Occupancy. Furthermore, local agencies may not charge interest on the delayed fee payments for such projects; rather, the fees must reflect the fee amount in place at the time the project's building permits are issued. In addition, the bill extends housing entitlements by 24 months for projects with entitlements issued prior to January 1, 2024 and set to expire on or before December 21, 2025.

SB 937 was designed to incentivize housing production by mitigating the effects of rising construction costs and interest rates, which hinder the financial feasibility of new housing projects. By deferring fee payments with zero interest, SB 937 can help to incentivize housing developers, who must demonstrate financial feasibility to investors and lending institutions before receiving necessary funding. Additionally, by extending entitlements, the bill allows developers more time to raise funding before constructing the project. By providing these incentives to developers, the bill strives to increase housing production, allowing local jurisdictions to fulfill their housing goals.

Housing projects must meet one of the following conditions to be considered a Designated Residential Development Project:

1. 100% of residential units (excluding the manager's unit) are reserved for low-income households.
2. The project meets the requirements regarding a Low Barrier Navigation Center Developments, per Government Code Section 65662.

3. The project is approved by a local government and meets all site-specific criteria, affordability criteria, and objective development standards pertaining to affordable housing developments located in commercial zones or mixed-income housing developments along commercial corridors, as specified by Article 2 (commencing with Section 65912.110) or Article 3 (commencing with Section 65912.120) of Chapter 4.1 of the Government Code.
4. The project is subject to a streamlined ministerial approval process, per Government Code Section 65913.4.
5. The project meets the criteria specified in the Affordable Housing on Faith and Higher Education Lands Act of 2023 (SB4)
6. The project is entitled to a Density Bonus, per Government Code Section 65915.
7. The project features 10 or fewer units.

Although fees are deferred for Designated Residential Development Projects until the project receives a Certificate of Occupancy or Temporary Certificate of Occupancy, it is important to note that public agencies may still collect utility service fees after receiving an application for utility services. In addition, developers may be required to pay development impact fees prior to the Certificate of Occupancy if construction does not commence within five years of the building permit issue date.

PROGRAM MANAGEMENT

The City, with assistance from consultants, oversees the implementation and administration of the TIMP Fee Program, consistent with the requirements of the Mitigation Fee Act. For all TIMP fees, a Program Management Fee is added to fund the costs of City's management and ongoing fee program administration, collection, and reporting. This includes costs associated with City staff and consultant time, studies, and administration to support the program. Industry standard ranges from three to six percent (3-6%) for the administrative component of a development fee program. The City has historically collected five percent (5%) for administrative costs on each fee, which was previously included as a soft cost mark-up. Administratively, the five percent (5%) charge per fee was difficult to account for throughout the numerous fee funds.

Thus, a separate Program Management Fee will be collected in a separate fund for ease of administration. Additional information regarding the Program Management Fee can be found in the Program Management Impact Fee Nexus Study, prepared by Harris & Associates (March 2024). The administrative functions of the Program Management Fund include, but is not limited to, the following:

- Annual fee adjustments
- Annual fee reporting
- Additional fee reporting every five years
- Application and tracking of fee credits and reimbursements

- Posting of nexus studies and fee schedules on the City's website
- Periodic nexus study updates
- Staff and consultant time related to fee preparation, collection, tracking, and administration

CREDITS AND REIMBURSEMENT POLICIES

Fee credits and reimbursements may be allowed for developer-constructed facilities in compliance with Title 13 of the Tracy Municipal code and other applicable polices. Credits and reimbursements shall be calculated specifically for each project as applicable. It should be noted that per Section 13.08.020 (e) of the Tracy Municipal Code "The Subdivider shall not be entitled to any credit for program implementation or contingencies."

PROGRAMMING REVENUES WITH THE CIP

The City should maintain its Capital Improvement Program (CIP) to adequately plan for future infrastructure needs. The CIP should commit all projected fee revenues and fund balances to specific projects that are necessary to serve growth. The CIP provides documentation necessary for the City to hold funds in a project account for longer than five years if necessary to collect sufficient funds to complete a project. This report outlines the projects that are to be funded with the fee program and forms the basis of the CIP, as identified in the Cost Summary and CIP section above, **Table 2-3** and **Table 2-4**,.

FEE REPORTING

Assembly Bill No. 1483, which became effective January 1, 2020, requires that public agencies make the following information available on their website. The following information must be provided:

1. A current schedule of fees, exactions, and affordability requirements imposed by the city, county, or special district, including any dependent special districts, of the city or county applicable to a proposed housing development project, which shall be presented in a manner that clearly identifies the fees, exactions, and affordability requirements that apply to each parcel.
2. All zoning ordinances and development standards, which shall specify the zoning, design, and development standards that apply to each parcel.
3. The list of information required to be compiled pursuant to Section 65940.
4. The current and five previous annual fee reports or the current and five previous annual financial reports, that were required pursuant to AB 1600.
5. An archive of impact fee nexus studies, cost of service studies, or equivalent, conducted by the city, county, or special district on or after January 1, 2018.

Any updates to the above information must be available within 30 days.

ACCESSORY DWELLING UNITS

An accessory dwelling unit (ADU) is a second unit that is attached or detached from a single-family home. In accordance with Assembly Bill No. 881 approved on October 9, 2019, TIMP fees will not be charged for an ADU that is less than 750 square feet. For an ADU that is 750 square feet or larger, the ADU will be charged proportionately in relation to the square footage of the primary dwelling unit. Since the TIMP residential fees are now being charged on a square footage basis, ADU fees will be calculated by multiplying the TIMP Single Family Residential fee by the ADU's square footage.

SPECIALIZED DEVELOPMENT PROJECTS

The fees in this report may not apply to specialized development projects such as golf courses, cemeteries, sports stadium, truck lots, or other specialized land uses. For specialized development projects the City will review the development's impacts to determine the applicable fees. The fee rates presented in this Nexus Study may be reduced, exempted, or waived under certain circumstances as determined by the City. Any exemption or reduction in fees will be based on the City's independent analysis and review of the subject property. In addition, specialized land uses may be calculated utilizing the cost per EDU applied to the number of EDUs of the specialized land use as determined by the City's independent analysis.

Some developments may include more than one land use type. In these cases, the fee is calculated separately for each land use. The City has the discretion to impose the fees based on the specific aspects of a proposed development regardless of zoning. The fee imposed should be based on the land use type that most closely represents the impacts of the development.

Section 4 APPENDIX: TRACY CITYWIDE PUBLIC SAFETY MASTER PLAN UPDATE (DECEMBER 2023)

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Citywide Public Safety Master Plan Update

City of Tracy, California

12/4/2023

Indigo | Hammond & Playle Architects, LLP
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ACKNOWLEDGEMENTS

The Citywide Public Safety Master Plan is a City of Tracy document. It has been prepared by INDIGO | Hammond & Playle Architects, LLP, in coordination with City leaders, staff and consultants listed here.

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Figure 63 - Net Zero-Energy Transportation Center, Vacaville, Ca. 61

EXECUTIVE SUMMARY

The City of Tracy initiated this Citywide Public Safety Master Plan (CPSMP) update to maintain a clear statement of community objectives for public safety, establish a vision of the future, and include strategies to achieve that vision. The CPSMP update promotes a future land use pattern that is consistent with the community's long-range goals.

The information and concepts presented in the CPSMP update are used to guide local decisions regarding public uses of land and the provision of public safety facilities and services. The Plan is long-range in its view and is intended to guide Police Department development in the City through Horizon Year 2040 and to guide Fire Department development through buildout of Tracy's sphere of influence.

This CPSMP update includes evaluation of current conditions; space standards and functional flow; staff and space need projections; alternative facility plans; and comparative cost estimations.

This CPSMP update is intended to be used as a guideline document for the identification of public safety facilities needed to serve future land development projects within the City's Sphere of Influence. This CPSMP update is also a guideline document for the identification of public safety upgrades needed to adapt existing spaces to new or expanded uses. Finally, this CPSMP update serves as a reference document for existing public safety facilities and their functional characteristics. Modifications and refinement to the public safety master plan represented herein may be considered by the City during the Specific Plan and development review process for new development. Any significant modifications to the elements of this CPSMP update should be approved by the City and will require that a formal "Supplement" be adopted by the City Council. The study area for this CPSMP update is the City's 42 square mile Sphere of Influence area (see Figure 1).

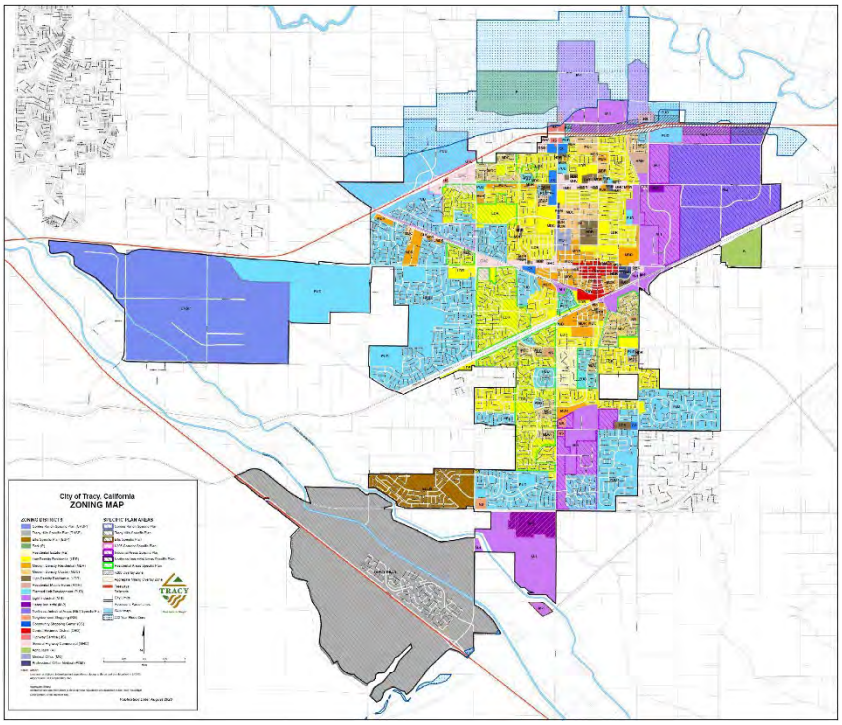


Figure 1 – 2020 Zoning Map

The combination of existing and proposed public safety facilities shall meet the needs to serve the City's Sphere of Influence area whether under Horizon Year 2040 land use conditions, in the case of the Police, or at buildout per the General Plan, in the case of the Fire Department. At Horizon Year 2040, Tracy will have approximately 141,000 residents. The growth assumptions in this Master Plan are based on data from September 2021, received from the City of Tracy. They don't include the growth assumed in the City of Tracy 6th cycle Housing Element.

Citywide Public Safety Master Plan Update - Summary

South San Joaquin County Fire Authority

In 1999, the City Fire Department and the Tracy Rural Fire District consolidated to form the South San Joaquin County Fire Authority (SSJCFA). The SSJCFA was created to provide fire protection services to the entire jurisdictional area of both the corporate City limits and surrounding rural community, including Banta, Lammersville, and Vernalis. Both Tracy Rural and the City of Tracy contract with the SSJCFA to receive fire protection services. The SSJCFA in turn contracts with the City of Tracy to provide employee and administrative services.

Tracy Operating Joint Powers Authority

In 2011, the Tracy Operating Joint Powers Authority (TOJPA) was formed to issue $13.7 million in public bonds. The bonds were issued to raise $770,000 to help finance the acquisition and construction of certain public capital improvements, which are intended to consist generally of police range facilities, a new fire station, an animal shelter, a Police CAD/RMS system, remodeling of the City's maintenance service yard including building renovation, way finding signage, park improvements and HVAC system upgrades. The TOJPA has already played a role in the construction of fire stations 92, 95, and 96 in addition to the animal shelter (phase 1), and ongoing training facility upgrades.

Recommendations

This public safety master plan continues to further the purpose of the TOJPA, by implementing the 2017 recommendations of the SSJCFA's Standards of Cover Study, proposing four new fire stations and the expansion of the Fire Training Facility. Further, by consensus of City leadership, this master plan proposes keeping the Police Department in the downtown civic center, adding a proposed substation to the southern service area of the City, and expanding the animal shelter. Lastly, this public safety master plan proposes implementation of the 2020 South San Joaquin County Fire Authority Radio System Overall Assessment's recommendations for short and long term upgrades.

Fire Facilities Citywide

Existing City Fire Department facilities to remain include the following:

- 1916 - 9,700 square foot Fire Administration building on a 0.6 acre site at 835 Central Avenue.
- 2005 - 7,400 square foot Fire Station 91 at 1701 West 11th Street.
- 2014 - 5,100 square foot Fire Station 92 1035 E. Grant Line Road.
- 2014 - 5,100 square foot Fire Station 96 1800 W. Grant Line Road.

New City Fire Department stations and facilities:

- Proposed relocated 7,750 square foot Fire Station 97 on a 2 acre site in the Valpico area. This Station includes an extra 700 square feet for an extended ladder truck bay.
- Proposed 9,900 square foot Fire Training Facility expansion on 5.13 acre site at 1399 S. Chrisman Rd.
- Proposed 7,070 square foot Fire Station 99 on a 0.9 acre site near Ellis.

Existing Rural Fire District Stations to remain include the following:

- 2006 - 6,200 square foot Fire Station 93 at 1400 W. Durham Ferry Road.
- 2021 - 7,100 square foot Fire Station 95 on 0.9 acre site at 7151 Tracy Hills Drive.

New Rural Fire District station:

- Proposed relocated 7,750 square foot Fire Station 94 on a 2 acre site in the Cordes Ranch area.

<u>Police Facilities Citywide</u>

Existing Police Department facilities, citywide, to remain include the following:

- 1996 - 27,600 square foot City of Tracy Police Facility on 2.7 acres at 1000 Civic Center Drive.
- 2015 - 9,700 square foot Animal Shelter on 2.2 acres at 2375 Paradise Road.
- 2,300 square foot Capt. John J. Serpa Memorial Training Facility on 2 acres at 6649 S. Tracy Blvd.

New City Police Department stations and facilities:

- Proposed 5,900 square foot Animal Shelter addition on City-owned land at 2375 Paradise Road.
- Proposed 19,800 square foot Public Safety Facility addition on 4.7 acres of City-owned Civic Center campus land at 1000 Civic Center Drive.
- Proposed 8,800 square foot South Tracy Substation on 2.2 acres to be purchased by City near Ellis, South Linne, and Tracy Hills developments.
- Proposed 12,900 expansion of Capt. John J. Serpa Memorial Training Facility on City-owned land at 6649 S. Tracy Blvd..

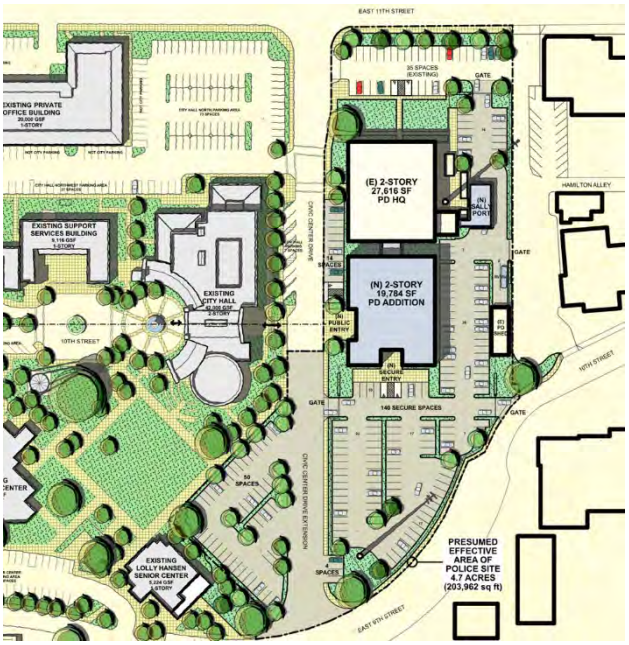


Figure 2 – Civic Center Expansion of Police Headquarters

The City's 2023 population is projected to exceed 100,000 people. The Police Department consists of 154 personnel, 99 of those sworn officers, for a ratio of 0.99 to this population.

The population of Tracy is expected to exceed 141,000 by Horizon Year 2040. The department will need to grow to 230 personnel to serve this population, with 152 of those sworn officers, for a ratio of 1.08.



Figure 3 - Bird's Eye View of Proposed Public Safety Addition

This 2023 Citywide Public Safety Master Plan Update supports the complete renovation of the 27,600 square foot Police Facility at 1000 Civic Center Drive; and, it further proposes to add on to this facility with a 2-acre expansion of the site and a 2-story addition of 19,784 square feet. The result: a new 47,400 square foot all-in-one Public Safety Center at City Hall on 4.7 acres.

This 2023 Citywide Public Safety Master Plan Update also supports the construction of a new 8,800 square foot Police Substation on 2.3 acres to be purchased by City near Ellis, South Linne, and Tracy Hills developments. This new site adds 94 parking spaces, with 74 of those inside a secure enclosure.



Figure 4 - Proposed Police Substation

This Substation along with the Public Safety Center renovation and addition will provide the Police Department with the building and site space it requires to serve the City through Horizon Year 2040.

For training facilities, this master plan supports the Police Department upgrading 900 square feet of the existing 2,300 square foot Capt. John J. Serpa Memorial Training Facility at 6649 S. Tracy Blvd and adding an additional 12,900 square feet of training facilities.

In addition to the above, small office space (approx. 323 SF) will be included for the Police at the proposed Multi-Gen Rec Center. See the concurrent Public Facilities Master Plan update for more information.

<u>Public Safety Radio Communications Facilities</u>

The City shall upgrade its communications infrastructure for P25 radio and microwave voter connectivity. All police and fire facilities to have SCD TAC 16 voted receivers, local radios, and microwave connections. The Police Department headquarters shall receive corresponding transmission upgrades.

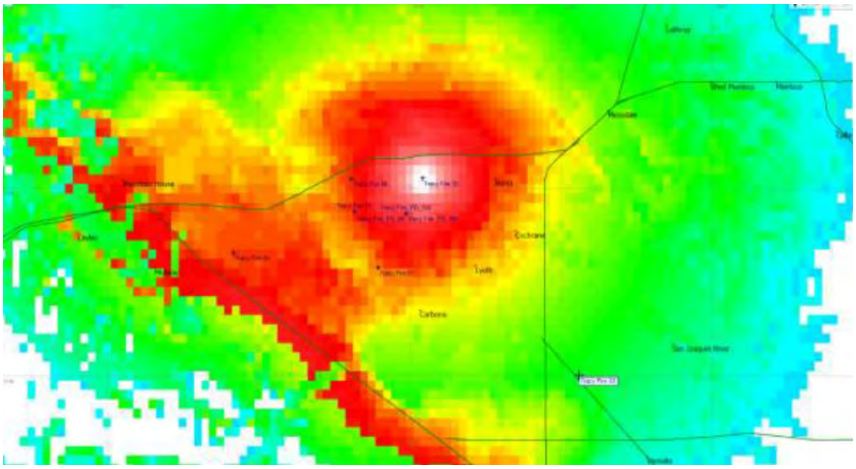


Figure 5 – Public Safety Radio Communications Systems Modeling

Cost Estimate Summary

The Public Safety Master Plan carries a total project development cost of approximately $130.8 million as shown below. Included are estimated 2023 direct construction bid day costs ($84.2 million), indirect and contingency costs ($29.5 million), vehicles and furnishings, fixtures, and equipment (FF&E, $13.9 million), and land acquisition ($3.7 million). See also Appendix D.

PLACE NAME	2023 Construction Bid Day Cost	35% Indirect & Contingency: 10% Design & Planning; 10% CM; 15% General Contingency	FF&E & Vehicles	Land Acquisition	2023 Total Project Cost
Fire Headquarters | Station "A"					
Fire Station 91					
Fire Station 92					
Fire Station 93					
~~Fire Station 94~~ (To Be Relocated. Property ownd by SCFA.)					
Fire Station 94 (Relocation - Cordes Ranch Area)	$6,942,300	$2,429,805	$2,600,000	$500,000	$12,472,000
Fire Station 95 (Tracy Hills Area)	$6,197,192	$2,169,017	$874,518	$192,837	$9,433,000
Fire Station 96					
~~Fire Station 97~~ (To Be Relocated. Sell property.)					*($451,350)*
Fire Station 97 (Relocation - Valpico) incl. Ladder Bay	$6,942,300	$2,429,805	$1,000,000	$500,000	$10,872,000
Fire Station 99 (Ellis Area)	$5,427,849	$1,899,747	$1,000,000	$233,012	$8,561,000
Fire Training Facility - Phases 2 & 3	$6,793,881	$2,377,858	$500,000	$0	$9,672,000
SUBTOTAL FIRE DEPARTMENT	**$32,303,500**	**$11,306,200**	**$5,974,500**	**$1,425,800**	**$50,558,700**
PD Remodel & Addition on Expanded Civic Center Site	$31,599,384	$11,059,784	$2,160,114	$0	$44,819,000
~~PD Annex~~ (1979 Police Station to be Demolished)					
~~PD North Annex~~ (Leased - to be let go)					
South Tracy Police Substation	$9,479,695	$3,317,893	$648,049	$1,760,000	$15,206,000
Police Department Training Facility	$4,887,202	$1,710,521	$36,098	$402,925	$7,037,000
Police Department Animal Shelter - Phase 2	$5,044,104	$1,765,436	$1,000,000	$0	$7,810,000
SUBTOTAL POLICE DEPARTMENT	**$51,010,400**	**$17,853,600**	**$3,844,300**	**$2,162,900**	**$74,872,000**
Public Safety Radio Communications Facilities	$862,240	$301,784	$4,067,185	$125,000	$5,356,000
SUBTOTAL COMMUNICATIONS FACILITIES	**$862,200**	**$301,784**	**$4,067,185**	**$125,000**	**$5,356,000**
TOTAL PUBLIC SAFETY FACILITIES (rounded)	**$84,177,000**	**$29,462,000**	**$13,886,000**	**$3,714,000**	**$130,790,000**

Figure 6 - Public Safety Master Plan Cost Estimate Summary

Cost Attributions

This study identifies and projects public safety facility needs for the City of Tracy and it estimates the total project costs for these facilities in current dollars. The City is providing a separate study to document the required nexus findings to implement a fee program. This study will establish a nexus between future development in Tracy, the public facilities that will serve those projects, and the impact fees that will fund those facilities. The purpose of this separate, concurrent study is to ensure that a rational nexus exists between future development in the area and the use and need of the proposed infrastructure.

Solar Nanogrid Cost Estimate Summary

Effective January 1, 2023, the 2022 California Energy Code has been mandated by the California Building Standards Commission for all California jurisdictions (including the City of Tracy) to begin enforcement thereof. This forthcoming edition of the energy code requires electrical solar systems on all new City office buildings, including, by and large, the proposed public safety facilities envisioned in this report.

Also, effective January 1, 2023, the 2022 California Energy Code will require battery storage systems for these building types. The storage of electrical energy allows for the use of electricity from the battery during high peak period demands for electricity, the time when such delivered energy is the most expensive. This, of course, will reduce the cost of energy consumption even further.

This combination of solar and battery storage scaled to individual buildings is referred to as a "Solar Nanogrid." Providing Solar Nanogrids for all proposed new public safety facilities and additions will cost an estimated $6.8 million per Figure 8 (below). The attributable costs, if this CEC measure is adopted, will be incorporated into the City's concurrent nexus study fee structure in addition to the Public Safety Master costs shown in Figure 6 (previous page). See Appendix E for full details.

KEY	PLACE NAME	Program Area	Loads		Rooftop Solar			Solar Carport (e)			
		New	Predicted (N) Facility Load	Predicted Maximum Battery Load	Rooftop Solar Maximum Capacity	Rooftop Solar Maximum Size	Estimated Rooftop Solar Cost @ $3K/kW	Needed Solar Carport Capacity	Needed Solar Carport Size	Needed Solar Carport System Size	Estimated Solar Carport Cost @ $3.4K/kW
94	Fire Station 94 (Reloc. Cordes Ranch Area) incl. Ladder Bay	7,750 sf	104 MWh/Yr	99 kW	70 MWh/Yr	74 kW	$222,000	34 MWh/Yr	3,800 sf	36 kW	$122,400
97	Fire Station 97 (Relocation - Valpico) incl. Ladder Bay	7,750 sf	104 MWh/Yr	99 kW	70 MWh/Yr	74 kW	$222,000	34 MWh/Yr	3,800 sf	36 kW	$122,400
99	Fire Station 99 (Ellis Area)	7,070 sf	95 MWh/Yr	90 kW	64 MWh/Yr	67 kW	$201,000	31 MWh/Yr	3,500 sf	33 kW	$112,200
T	Fire Training Facility - Phases 2 & 3	9,868 sf	132 MWh/Yr	126 kW	89 MWh/Yr	94 kW	$282,000	43 MWh/Yr	4,800 sf	46 kW	$156,400
	SUBTOTAL FIRE DEPARTMENT	**39,500 sf**	**435 MWh/Yr**	**414 kW**	**293 MWh/Yr**	**309 kW**	**$927,000**	**142 MWh/Yr**	**15,900 sf**	**151 kW**	**$513,400**
P	PD Remodel & Addition on Expanded Civic Center Site	19,809 sf	265 MWh/Yr	253 kW	89 MWh/Yr	94 kW	$282,000	176 MWh/Yr	19,600 sf	186 kW	$632,400
S	South Tracy Police Substation	8,794 sf	118 MWh/Yr	113 kW	79 MWh/Yr	84 kW	$252,000	39 MWh/Yr	4,300 sf	41 kW	$139,400
T	Police Department Training Facility	12,866 sf	173 MWh/Yr	165 kW	116 MWh/Yr	123 kW	$369,000	57 MWh/Yr	6,300 sf	60 kW	$204,000
D	Police Department Animal Shelter - Phase 2	5,900 sf	79 MWh/Yr	76 kW	53 MWh/Yr	56 kW	$168,000	26 MWh/Yr	2,900 sf	27 kW	$91,800
	SUBTOTAL POLICE DEPARTMENT	**47,400 sf**	**635 MWh/Yr**	**607 kW**	**337 MWh/Yr**	**357 kW**	**$1,071,000**	**298 MWh/Yr**	**33,100 sf**	**314 kW**	**$1,067,600**
	SUBTOTAL PUBLIC SAFETY FACILITIES	**87,300 sf**	**1,070 MWh/Yr**	**1,021 kW**	**630 MWh/Yr**	**666 kW**	**$1,998,000**	**440 MWh/Yr**	**49,000 sf**	**465 kW**	**$1,581,000**

(continued)

KEY	PLACE NAME	2020 Subtotal Solar Carport Cost	Annual Construction Input Inflation 2021 & 2022	2023 Subtotal Solar Carport Bid Day Cost	Battery		Annual Construction Input Inflation 2021 & 2022	2023 Subtotal Battery System Bid Day Cost	2023 Total Project Bid Day Cost for Solar and Battery Installation	35% Indirect & Contingency: 10% Design & Planning; 10% CM; 15% General Contingency	2023 Total Project Cost for Solar and Battery Installation
					Needed Code-Required 6-Hour Battery	Estimated Battery System Cost					
94	Fire Station 94 (Reloc. Cordes Ranch Area) incl. Ladder Bay	$122,400	26.8%	$155,203	0.30 MWh	$240,000	26.8%	$304,320	$459,523	$160,833	$620,356
97	Fire Station 97 (Relocation - Valpico) incl. Ladder Bay	$122,400	26.8%	$155,203	0.30 MWh	$240,000	26.8%	$304,320	$459,523	$160,833	$620,356
99	Fire Station 99 (Ellis Area)	$112,200	26.8%	$142,270	0.27 MWh	$216,000	26.8%	$273,888	$416,158	$145,655	$561,813
T	Fire Training Facility - Phases 2 & 3	$156,400	26.8%	$198,315	0.31 MWh	$248,000	26.8%	$314,464	$512,779	$179,473	$692,252
	SUBTOTAL FIRE DEPARTMENT	**$513,400**		**$651,000**	**1.18 MWh**	**$944,000**		**$1,197,000**	**$1,848,000**	**$646,800**	**$2,494,800**
P	PD Remodel & Addition on Expanded Civic Center Site	$632,400	26.8%	$801,883	0.76 MWh	$608,000	26.8%	$770,944	$1,572,827	$550,490	$2,123,317
S	South Tracy Police Substation	$139,400	26.8%	$176,759	0.34 MWh	$272,000	26.8%	$344,896	$521,655	$182,579	$704,235
T	Police Department Training Facility	$204,000	26.8%	$258,672	0.50 MWh	$400,000	26.8%	$507,200	$765,872	$268,055	$1,033,927
D	Police Department Animal Shelter - Phase 2	$91,800	26.8%	$116,402	0.23 MWh	$184,000	26.8%	$233,312	$349,714	$122,400	$472,114
	SUBTOTAL POLICE DEPARTMENT	**$1,067,600**		**$1,353,700**	**1.83 MWh**	**$1,464,000**		**$1,856,400**	**$3,210,100**	**$1,123,500**	**$4,333,600**
	TOTAL PUBLIC SAFETY FACILITIES (rounded)	**$1,581,000**	26.8%	**$2,005,000**	**3.01 MWh**	**$2,408,000**	26.8%	**$3,054,000**	**$5,059,000**	**$1,771,000**	**$6,829,000**

Figure 7 - Estimated Solar Nanogrid Cost Summary

METHODOLOGY

Beginning 2021, the master plan team led by INDIGO coordinated with City of Tracy personnel and its separate consultants to prepare an interim and now DRAFT REPORT for a Citywide Public Safety Master Plan (CPSMP update) which assesses current and future public safety building needs. Included in the CPSMP update are Police Department and Fire Department facilities. Problems, opportunities, and community assets were identified.

The consultant worked with a Facilities Committee formed by the City composed of leadership from the Fire Department, the Police Department, the City Engineer, and other City staff. Periodic meetings with this committee have been attended by this consultant.

The CPSMP update establishes division-by-division programmatic needs, basing projections on standards of service and the staffing of other cities that are geographically and demographically similar to the community at Horizon Year 2040. This comparison approach substantiates the space required for City operations by making adjustments on the basis of statistical procedures to enhance predictive accuracy. The CPSMP update is based on projections in the City's General Plan and detail in the Sphere of Influence as provided by the City. The CPSMP update takes full advantage of several pre-existing studies and development land use types which have been provided by the City. See Figure 9 for current City organization.

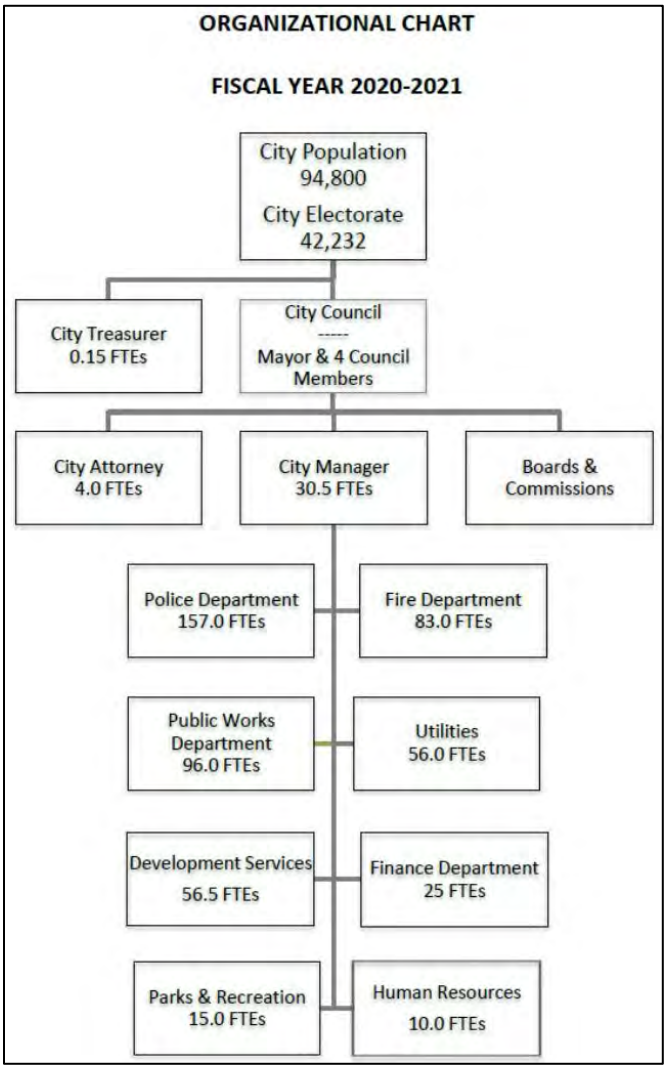


Figure 8 - City Organizational Chart

The scope of this report is subdivided into the following sections:

- EVALUATION OF CURRENT CONDITIONS
- SPACE STANDARDS AND FUNCTIONAL FLOW
- STAFF AND SPACE NEED PROJECTIONS
- MASTER PLAN
- COST
- FUNDING OPTIONS
- DESIGN GUIDELINES

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EVALUATION OF CURRENT CONDITIONS

Existing Staff Levels and Space Utilization

Generally, the City of Tracy's 240 FTE of public safety staff – out of 533 FTE total City staff - are located in public safety facilities adding up to 108,000 square feet in area. These facilities are organized in as efficient manner as possible, given significant space separation issues and building deficiencies confronting both Police and Fire. Of the 108,000 square feet, the following 35,200 square feet of existing facilities require replacement:

- In 1995, Station 94 was relocated to a 5,600 square foot facility at 16502 W. Schulte Road. The condition of this 26-year-old facility is poor. The station houses a 2003 Pierce/Saber type 1 pumper ALS unit staffed with three personnel and a 2016 HME type 3 engine. The station is located on a site adjacent to CAL FIRE Santa Clara Unit, Station 26.



Figure 9 – 1995 Tracy Rural Fire Station 94, 16502 West Schulte Road (to be relocated)

- In 1986, the City built the 3,000 square foot Fire Station 97 at 595 West Central Ave. The condition of this 35-year-old facility is fair, and more significantly it is 40% of the size the South San Joaquin County Fire Authority (SSJCFA) now needs. Station 97 currently houses a 2015 Spartan Hi-Tech, type 1 pumper and is also staffed with three personnel trained to the Advanced Life Support (ALS) level.



Figure 10 – 1986 Tracy Fire Station 97, 595 West Central Ave (to be relocated)

- In 1979, the Police Department moved into the newly built 9,800 square foot Tracy Public Safety Facility Building at 400 East 10th Street as part of the new Civic Center complex. This 1-story building

included cast-in-place concrete partition walls for the 2,400 square foot jail. The department at this time consisted of less than 30 personnel.

- The condition of this 44-year-old building is poor;
- The facility requires demolition due to lack of accessibility, lack of essential service compliance, and unsuitability for renovation due to concrete jail infrastructure;
- Demolition also facilitates Civic Center expansion in place of existing Police Department.



Figure 11 - 1979 Tracy Police Building, 400 East 10th Street (to be demolished)

- In 2019, the department leased a 16,800 square foot "North Annex" industrial space at 1325 N MacArthur Drive to serve as an offsite evidence facility. The facility is outfitted with evidence lockers, 3 large evidence vaults, a drying room, a property release room, space for evidence vehicles, and a car lift. The condition of this leased facility is excellent. However, any time evidence is separated from the main police building, including its sallyport and holding facilities, it creates a more challenging chain-of-custody environment for the department and separates the Evidence Technician from Records and Patrol personnel, potentially weakening esprit de corps. The existing 1,000 square foot Evidence space in the 1996 building is now potentially made redundant, but it is not easily adapted to other uses. Because this is a leased space, this master plan does not count the department's space use at 1325 N MacArthur Drive as "Existing Space" in its summary of attributable space.



Figure 12 - Leased North Annex Space, 1325 North MacArthur Drive (to be let go)

The end result of these needed adjustments to existing area is that 240 FTE of public safety staff are located in 73,100 square feet of existing space anticipated to remain in operation through Horizon Year 2040 and buildout. Figure 13 shows current staffing and space allocations organized by City departments and Figure 9 shows current City Organizational Chart.

Departments	Budget-listed Staff (FTE)	Existing Space to Remain (SF)
Police		39,600
Sworn	99	
Civilian	58	
Police Subtotal	157	39,600
Fire		
Certified Firefighters/ Fire Stations/ Training	77	9,700
Civilian/ Administration	6	23,800
Fire Subtotal	83	33,500
Public Safety Total	**240**	**73,100**

Figure 13 - Summary of Existing Public Safety Staffing & Space

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Evaluation of Existing Facilities

A very general assessment of existing facilities conditions was conducted, based on prior tours of the facilities, approximate age of the facilities, and review of photos. Detailed assessments of existing conditions, including roofing conditions, mechanical and electrical systems conditions, hazardous materials present, complete accessibility code compliance, etc., was not included in the scope of this study.

The three condition types identified are “good,” “fair,” and “poor,” as described below. These assessments indicate the physical condition of the facilities and are not intended to rate programmatic functionality of the uses within. See Figure 14 for a tabular list of all public safety within the scope of this study and an assessment of their condition.

Good Condition:

- The facility is in good or excellent condition;
- The facility has benefitted from ongoing maintenance;
- The facility’s key systems may be worn but utility is not impaired;
- Key building systems, such as roof, windows, mechanical, electrical, etc., are estimated to have an average minimum of 10-20 years of life remaining;
- Relatively few accessibility compliance issues are present.

Fair Condition:

- The facility is in fair condition;
- The facility has received intermittent maintenance;
- The facility’s key systems may be soiled or shopworn, rusted, deteriorated or damaged, with utility slightly impaired;
- Renovation or repair is expected in the near future;
- Key building systems, such as roof, windows, mechanical, electrical, etc., are estimated to have an average minimum of 5-15 years of life remaining;
- Accessibility compliance issues are present.

Poor Condition:

- The facility is in poor condition;
- The facility has received little or no maintenance;
- The facility’s key systems may be badly broken, soiled, mildewed, deteriorated or damaged with utility seriously impaired;
- Prompt renovation or repair is needed;
- Serious accessibility compliance issues may be present.

EXISTING PUBLIC SAFETY FACILITIES						
KEY	PLACE NAME	YEAR	CONDITION	ADDRESS	(E)	(E) to Remain
A	Fire Headquarters | Station "A"	1916	Good	835 Central Avenue	9,646 sf	9,646 sf
91	Fire Station 91	2005	Good	1701 West 11th Street	7,401 sf	7,401 sf
92	Fire Station 92	2014	Good	1035 E. Grant Line Road	5,136 sf	5,136 sf
93	Fire Station 93	2006	Good	1400 W. Durham Ferry Rd	6,147 sf	6,147 sf
~~94~~	~~*Fire Station 94 (To Be Relocated)*~~	*1995*	*Poor*	*16502 West Schulte Rd*	~~*5,552* sf~~	*0 sf*
96	Fire Station 96	2014	Good	1800 W. Grant Line Road	5,136 sf	5,136 sf
~~97~~	~~*Fire Station 97 (To Be Relocated)*~~	*1986*	*Fair*	*595 West Central Av.*	~~*3,009* sf~~	*0 sf*
					42,027 sf	33,466 sf
P	Police Department HQ	1996	Good	1000 Civic Center Dr.	27,616 sf	27,616 sf
I	~~*Police Department Annex - Investigations*~~	*1979*	*Poor*	*400 E. Tenth Street*	~~*9,800* sf~~	*0 sf*
A	~~*Police Department N. Annex - Leased Bldg*~~	*N/A*	*Excellent*	*1325 N. MacArthur Dr.*	~~*16,759* sf~~	*0 sf*
T	Police Department Training Facility	Varies	Fair	6649 S. Tracy Blvd.	2,296 sf	2,296 sf
D	Police Department Animal Shelter	2015	Excellent	2375 Paradise Rd.	9,692 sf	9,692 sf
					66,163 sf	39,604 sf
				TOTAL EXISTING PUBLIC SAFETY FACILITY SPACE	108,190 sf	**73,070** sf

Figure 14 - Existing Public Safety Assessment



Figure 16 – Existing Fire Dept Administration Site



Figure 15 - Existing Police Department Site

SPACE STANDARDS AND FUNCTIONAL FLOW

Recommendations for Operational Efficiency

As described above, the City of Tracy's 240 FTE of public safety staff are located in 73,100 square feet of existing space anticipated to remain in operation, along with all proposed modifications and additions, through Horizon Year 2040 and buildout. The current space needed for efficient operations shall be estimated and weighed against future needs in the City's concurrent nexus study. Meanwhile, this study recommends the following:

- Retain existing 16,800 square foot leased North Annex, housing Evidence, until permanent replacement co-located with Police Department for improved chain-of-custody and esprit de corps can be built.
- Begin 12,904 square foot expansion of Police Training Facility as soon as possible.
- Begin 9,900 square foot expansion of Fire Training Facility as soon as possible.

The end result of these needed adjustments to existing area is that 240 FTE of public safety staff will be located in 92,100 square feet of space.

The Figure 17 (below) shows the ideal relationships between departments within the Police Department.

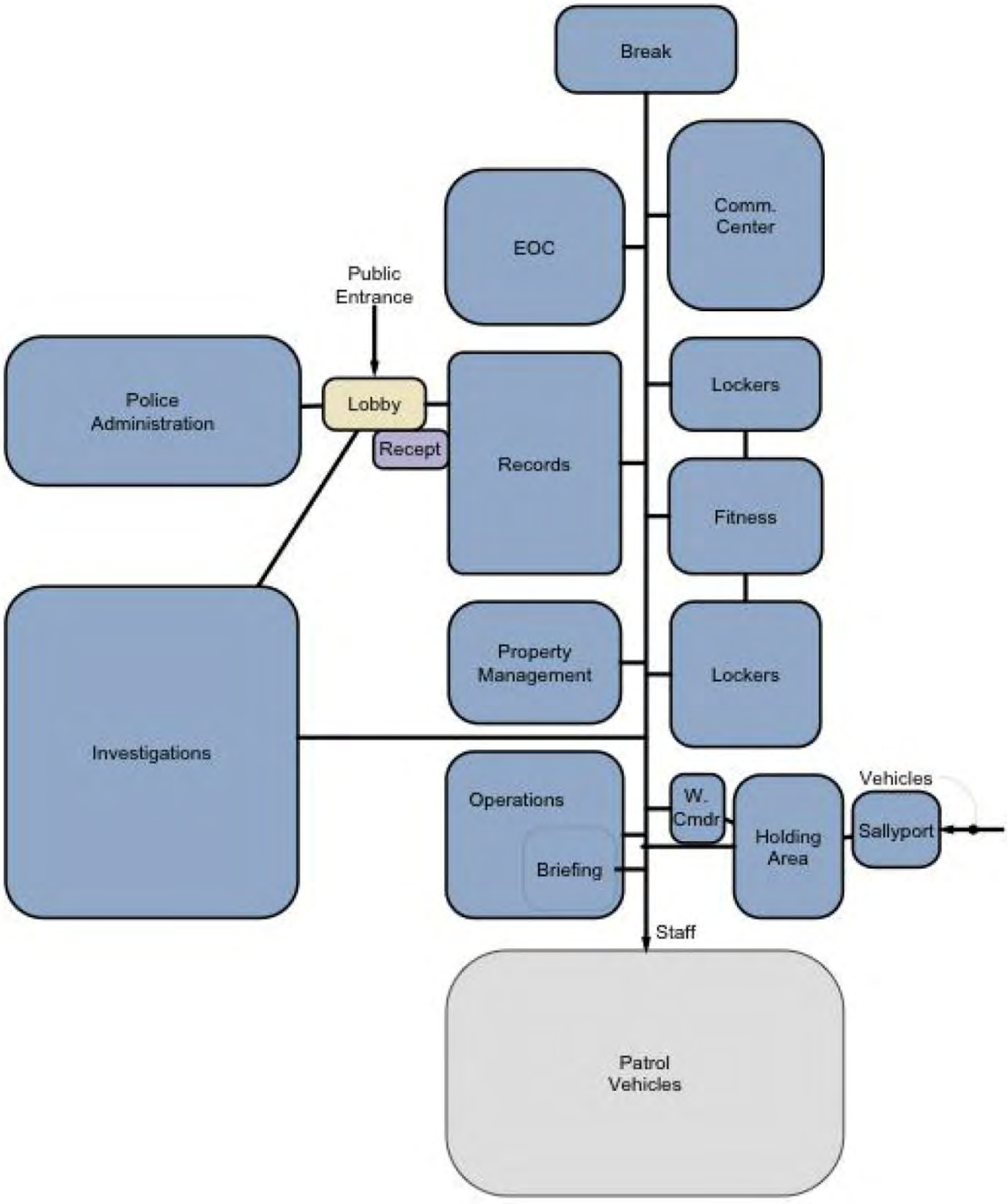


Figure 17 – Police Department Relationship Diagram

Space & Facility Standards

Space standards were informed by a combination of existing space and normal and customary space for similar functions in other jurisdictions. The 25-year-old Police Department building is a "relatively new" facility. While it has a number of deficiencies, the basic quality and space allocation of the facility as built is a good indicator of the size and quality of spaces the city intended for the employees of the Police Department. Most of the Police Department's space deficiencies relate to increased demand since completion of the building, so space standards are based on the original intent where it is clear from the original drawings. The space projections described in a section below provide adjustments for functions that expanded, displacing other functions.

Similarly, the relatively recent renovation of the Fire Administration Building provides a good indication of the intended provision for the administrative and office functions. The real growth issue for the Fire Department is the placement of new stations to cover growth areas of the city. Fire Station 95, under construction, will become the department's newest facility, representing the operational characteristics it wants for future stations. It is unnecessary to provide a line item breakdown of spaces for the purposes of this master plan, so the gross building area of Fire Station 95 is used as the model for each needed fire station. Figure 18 shows space standards for the CPSMP update.

Position	Net Sq. Ft.	Comment
Police Department		
Chief of Police	300	Existing
Captain	190	Existing
Lieutenant	190	Existing
Executive Assistant	160	Existing
Sergeant	105	Existing
Typical Enclosed Office	100	Existing
Typical Open Workstation	64	
Detective	24	
Copy/Supply Enclosed	100	
Copy/Supply Open Office	64	
Coffee Counter	20	
Fire Department		
Fire Chief	320	Existing
Division Chief	220	Existing
Fire Captain	120	
Typical Open Workstation	64	
Fire Station	7,100	Gross SF

Figure 18 - Public Safety Space Standards

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STAFF AND SPACE NEED PROJECTIONS

Staff projections provide an intermediate step in the development of an organization's space needs. There are a number of methods for projecting staffing at Horizon Year 2040 and buildout. The method used here is to project staffing based on the staffing of six other cities that are geographically and demographically similar to the City of Tracy's projected population for Horizon Year 2040, in the case of the Police Department, and buildout, in the case of the Fire Department. The growth assumptions in this Master Plan are based on data from September 2021, received from the City of Tracy. They don't include the growth assumed in the City of Tracy 6th cycle Housing Element.

Growth Factors & Staff Projection Table

The staff levels of the six cities, and current and required staff at Horizon Year 2040 and buildout for the City of Tracy are shown in Figure 19. These closely matched cities have a range of 92,000 to 160,000 residents. As would be expected, increases in city staff generally correspond to increases in population, ranging from a low of 1.02 sworn officers per 1,000 population in Vallejo and a low of 0.53 certified firefighters in Fairfield to a high of 1.18 sworn in Hayward and 0.89 certified in Vacaville.

		Police				Fire			
City	General Pop.	Sworn Officers	Sworn/ 1,000 Pop.	Civilian	Civilian / 1,000 Pop.	Cert. Fire-fighters	Cert./ 1,000 Pop.	Civilian	Civilian / 1,000 Pop.
Tracy 2023	**100,000**	**99.0**	**0.99**	**58.0**	**0.57**	**77**	**0.77**	**6**	**0.06**
Horizon Year 2040 / Buildout	**141,000 / General Plan**	**152.2**	**1.08**	**77.9**	**0.55**	**97.5**	**0.69**	**12**	**0.08**
Concord	129,300	154.0	1.19	57.0	0.44				
Fairfield	117,000	125.0	1.07	73.1	0.62	62	0.53	7	0.06
Hayward	160,300	189.0	1.18	119.5	0.75	130	0.81	24.4	0.15
Livermore	91,900	95.0	1.03	50.5	0.55	55.5	0.60	7	0.08
Vacaville	98,900	113.0	1.14	59.0	0.60	88	0.89	12	0.12
Vallejo	119,100	122.0	1.02	53.0	0.45	81	0.68	6	0.05

Figure 19 - Population and Staffing

On the Police side of the matched cities, the average ratio of staff per 1,000 population in each category comes to 1.11 sworn officers and 0.57 civilian employees. Tracy's current ratios are 0.99 sworn (89% of the average) and 0.57 civilian (100% average). Tracy's projected 2040 ratios are 1.08 sworn and 0.55 civilian (both 97% of the average).

On the Fire side of the matched cities, the average ratio of staff per 1,000 population in each category comes to 0.70 certified firefighters and 0.09 civilian employees. Tracy's current ratios are 0.77 certified (110% of the average) and 0.06 civilian (67% of the average). Tracy's projected buildout ratios are 0.69 sworn (99% of the average) and 0.08 civilian (both 89% of the average).

Staffing for firefighters was based on current staffing plus those needed for the additional fire stations needed to serve the community at buildout. The South San Joaquin County Fire Authority Standards of Cover study by Citygate Associates dated May, 2017 clearly considered all of the city's proposed expansion areas with an efficient distribution of stations, so assumptions regarding fire stations for the Public Safety Master Plan Update are consistent with those recommendations.

The Citygate study recommends four new fire stations for the entire fire authority. The average staffing of each existing station (not including the ladder company at Fire Station #91) is 3 fire captains, 3 fire engineers, 3 firefighters, and 0.3 fire reserves. This results in a small drop in the ratio of certified firefighters from 0.77 to 0.69 per 1,000 population. Inspection of the Citygate study and staffing patterns consistent with that seem to validate that the same level of service is provided at buildout as currently exists.

A table with current and Horizon Year 2040 and buildout staffing for public safety agencies is provided in Appendix A.

Space Projection Tables

Space projections were developed on a line item basis using the staffing projections, reviews of existing space and plans, and spaces that are normal and customary for public safety. Appendix B provides the spaces needed under the current budget and at Horizon Year 2040 and buildout. Subtotals of net space are provided for each department with estimates of "departmental" space, effectively equivalent to lease space in a commercial building with allowances for internal circulation, columns, etc. Gross building area is provided by use of an efficiency factor that provides allowances for exterior building walls, vertical circulation elements, primary circulation, public toilets, and mechanical rooms. The efficiency factor varies from 75% to 90% depending on type of facility.

	Building	Police															Subtotal w/ 33% Gross Circulation
		Admin	Field Operations	Community Services	Traffic	Code Enforcement	Support Services	Animal Services	Records	Dispatch	Shared Support	Investigations	Crime Scene	Holding	Ancillary Areas	Training	
P	PD Remodel & Addition	1,890 sf	1,331 sf	1,630 sf	764 sf	1,170 sf	410 sf		1,737 sf	1,220 sf	510 sf	3,770 sf	9,261 sf	1,890 sf	7,855 sf		47,425 sf
S	South Tracy Police Substation		1,839 sf		236 sf				463 sf				309 sf		3,765 sf		8,794 sf
T	PD Training Facility															11,400 sf	15,162 sf
D	PD Animal Shelter - Phase 2							15,592 sf									15,592 sf
	SUBTOTAL POLICE DEPARTMENT	**1,900 sf**	**3,200 sf**	**1,600 sf**	**1,000 sf**	**1,200 sf**	**400 sf**	**15,600 sf**	**2,200 sf**	**1,200 sf**	**500 sf**	**3,800 sf**	**9,600 sf**	**1,900 sf**	**11,600 sf**	**11,400 sf**	**87,000 sf**

Figure 20 - Summary of Police Department Space Needs

Building		Fire			Subtotal
		Admin	Training	Stations	
A	Fire Headquarters | Station "A"	9,646 sf			**9,646 sf**
91	Fire Station 91			7,401 sf	**7,401 sf**
92	Fire Station 92			5,136 sf	**5,136 sf**
93	Fire Station 93			6,147 sf	**6,147 sf**
94	Fire Station 94 (Reloc. Cordes Ranch Area) incl. Ladder Bay			7,750 sf	**7,750 sf**
95	Fire Station 95 (Tracy Hills Area)			7,070 sf	**7,070 sf**
96	Fire Station 96			5,136 sf	**5,136 sf**
97	Fire Station 97 (Relocation - Valpico) incl. Ladder Bay			7,750 sf	**7,750 sf**
99	Fire Station 99 (Ellis Area)			7,070 sf	**7,070 sf**
T	Fire Training Facility - Phases 2 & 3		9,868 sf		**9,868 sf**
	SUBTOTAL FIRE DEPARTMENT	**9,600 sf**	**9,900 sf**	**53,500 sf**	**73,000 sf**

Figure 21 - Summary Fire Department of Space Needs

KEY	PLACE NAME	Program Area			
		Existing	*Remodel*	New	2040/ Buildout
A	Fire Headquarters | Station "A"	9,646 sf			9,646 sf
91	Fire Station 91	7,401 sf			7,401 sf
92	Fire Station 92	5,136 sf			5,136 sf
93	Fire Station 93	6,147 sf			6,147 sf
~~94~~	~~Fire Station 94~~ (To Be Relocated. Land owned by SCFA.)	*5,552 sf*			
94	Fire Station 94 (Reloc. Cordes Ranch Area) incl. Ladder Bay			7,750 sf	7,750 sf
95	Fire Station 95 (Tracy Hills Area)			7,070 sf	7,070 sf
96	Fire Station 96	5,136 sf			5,136 sf
~~97~~	~~Fire Station 97~~ (To Be Relocated. Sell property.)	*3,009 sf*			
97	Fire Station 97 (Relocation - Valpico) incl. Ladder Bay			7,750 sf	7,750 sf
99	Fire Station 99 (Ellis Area)			7,070 sf	7,070 sf
T	Fire Training Facility - Phases 2 & 3			9,868 sf	9,868 sf
	SUBTOTAL FIRE DEPARTMENT	**33,500 sf**	***0 sf***	**39,500 sf**	**73,000 sf**
P	PD Remodel & Addition on Expanded Civic Center Site	27,616 sf	*27,616 sf*	19,809 sf	47,425 sf
I	~~PD Annex~~ (1979 Police Station to be Demolished)	*9,800 sf*			
A	~~PD North Annex~~ (Leased - to be let go)	*16,759 sf*			
S	South Tracy Police Substation			8,794 sf	8,794 sf
T	Police Department Training Facility	2,296 sf	*918 sf*	12,866 sf	15,162 sf
D	Police Department Animal Shelter - Phase 2	9,692 sf		5,900 sf	15,592 sf
	SUBTOTAL POLICE DEPARTMENT	**39,600 sf**	***28,500 sf***	**47,400 sf**	**87,000 sf**
RCT	Public Safety Radio Communications Facilities			400 sf	400 sf
	SUBTOTAL COMMUNICATIONS FACILITIES	**0 sf**	***0 sf***	**400 sf**	**400 sf**
	SUBTOTAL PUBLIC SAFETY FACILITIES	**73,100 sf**	***28,500 sf***	**87,300 sf**	**160,400 sf**

Figure 22 – Existing Space Available and Space Need through Horizon 2040 and Buildout

The scope of the proposed Police Department Headquarters and Training Facility remodels and additions includes renovation of the existing facilities to both provide for future development and to correct existing deficits. The percent of the cost attributable to growth can be determined by dividing the square footage related to future development by the square footage of the proposed renovation. The City's concurrent nexus study will provide estimates of the square footage related to future development for this purpose. The proposed Animal Shelter and South Tracy Substation additions include no anticipated renovation of existing facilities.

Fire administration does have some vacant offices, but the remodeled station used for the department's administrative offices also has old crew quarters that are under-utilized.

Additional fire stations are required to meet future increases in demand. The need for expanded training facilities is as much a strategic question of whether to use in-house or regional resources as it is a calculation of development-driven demand.

A related issue is the distribution of future fire stations to meet the needs of the incorporated and unincorporated areas. Based on Citygate's proposed locations for future fire stations 94, 95, 97, and 99; the service areas for each were determined by Harris & Associates and areas within each service area calculated separately for incorporated city, developed unincorporated area, and undeveloped unincorporated area.

Impact fees cannot charge for the future correction of current unmet needs. The City's concurrent nexus study will demonstrate that unmet needs have been excluded from the final impact fees.

CITYWIDE PUBLIC SAFETY MASTER PLAN UPDATE

The consensus public safety master plan continues to implement the 2017 recommendations of the Fire Department Standards of Cover Study and, by consensus of City leadership, keeps the Police Department in the downtown civic center. The consensus public safety master plan proposes implementation of the 2020 South San Joaquin County Fire Authority Radio System Overall Assessment's recommendations for short and long term upgrades.

Fire Facilities Citywide

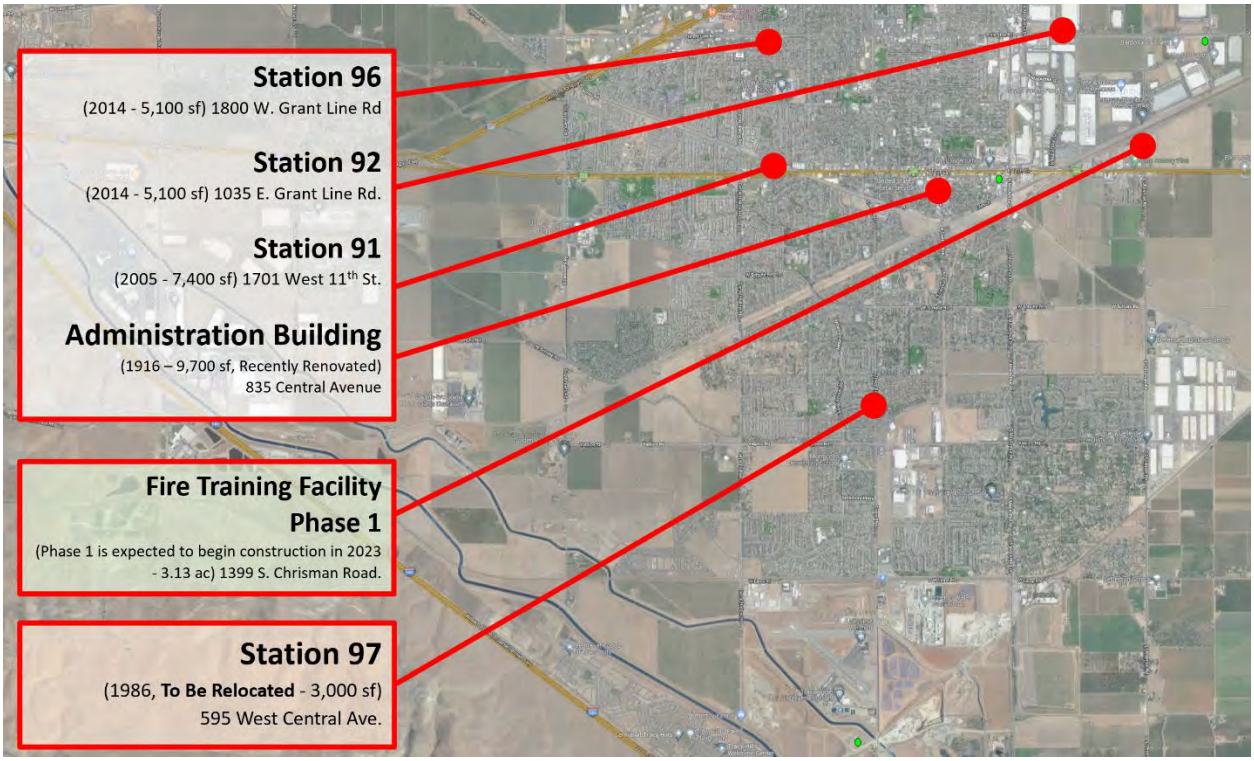


Figure 23 – Map of Existing City Fire Facilities

City Fire Administration Building

In 1916, the City passed a bond that provided for renovations of the Administration Building on a 0.6 acre site at 835 Central Avenue. This building also served as the City Hall and Jail until city offices were moved out in 1947. With the recent renovations completed, this landmark building continues to serve as the Fire Department's headquarters 106 years later and remains in good condition. The use of office spaces have changed since the previous master plan, including the South San Joaquin County Fire Authority's addition of a prevention bureau, and just more overall staff in general. These offices have displaced some existing Fire Training space, which will be relocated to the new Fire Training Facility site, currently under Phase 1 construction and to be expanded to 5.13 acres with classroom and office space during future Phase 2 & 3 renovations.



Figure 24 – 1916 Tracy Fire Department Building, 835 Central Avenue (to be upgraded)

Tracy Rural Fire Protection District

In 1945, the Tracy Rural Fire Protection District (TRFPD) was established to protect the greater Tracy region. This 200 square mile region is bounded (clockwise) by the Grant Line Canal to the north, the Paradise Cut to the northeast, the San Joaquin River to the east, the Stanislaus County line to the southeast, I-580 to the south, and the Alameda County line to the west. Per the 2017 Fire Department Standards of Cover Study, Rural Area first-due response time maximum is 11 minutes. This measure includes a 7:30-minute travel time. See below for TRFPD and City stations discussed in chronological order.

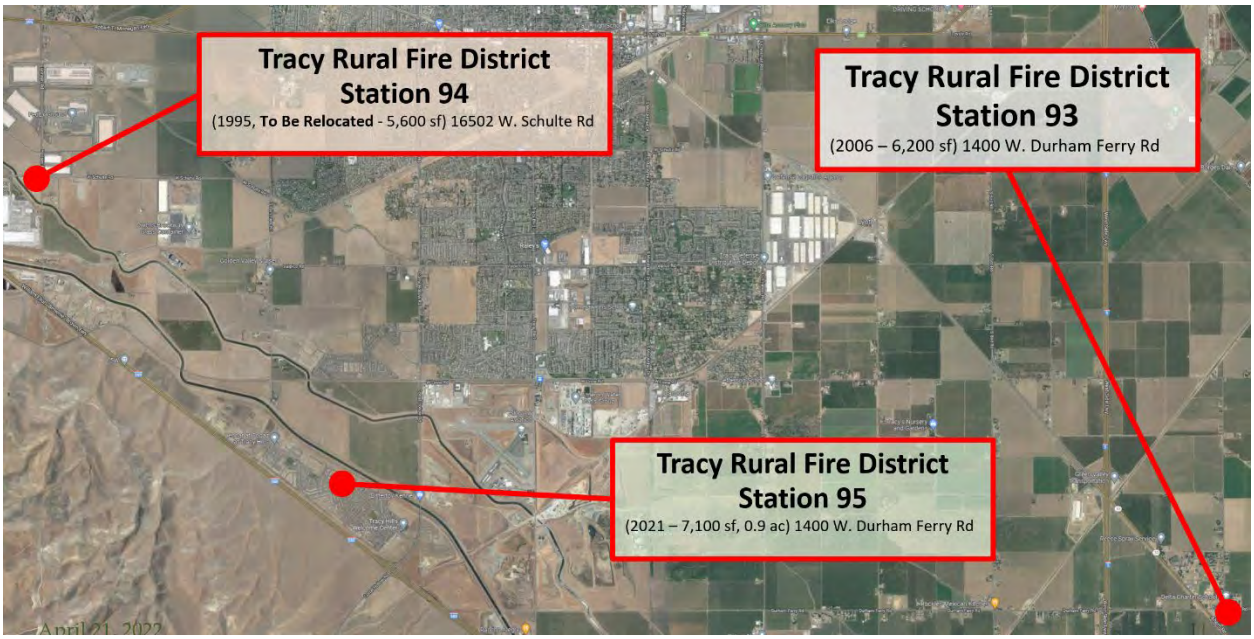


Figure 25 – Map of Existing Rural Fire District Stations

2017 Standards of Cover Study

The 2017 Fire Department Standards of Cover Study recommends an eight-station deployment to provide substantially improved first-due and multiple-unit coverage to serious emergencies in the growing urban areas. The Study also identified additional response time issues with the dispatch call handling. These issues have since been resolved as addressed by Fire Division Chief, David A. Bramell:

We have worked to speed up the dispatch process through Stockton Fire Dispatch taking the live caller directly from the Public Safety Answering Point (PSAP) instead of the live caller being questioned by AMR before sending it to Stockton. In 2019 (after the 2017 SOC study), our staff and particularly Chief Bradley, led an effort to introduce and change state legislation that provided a pathway to improve the dispatch process. The particulars of this legislation are found in Senate Bill 438.

City Fire Station 97

In 1986, the City built the 3,000 square foot Fire Station 97 at 595 West Central Ave. The condition of this 35-year-old facility is fair, and more significantly it is 40% of the size the South San Joaquin County Fire Authority (SSJCFA) now needs. Station 97 currently houses a 2015 Spartan Hi-Tech, type 1 pumper and is also staffed with three personnel trained to the Advanced Life Support (ALS) level.



Figure 26 – 1986 Tracy Fire Station 97, 595 West Central Ave (to be relocated w/ expanded ladder truck bay)

This master plan supports the relocation of Fire Station 97 to a new 7,750 square foot facility on a 2 acre site in the Valpico area. This proposed station will include an extra 700 square feet for an extended ladder truck bay. This plan proposes that the City sell that decommissioned property once the replacement station has been built.

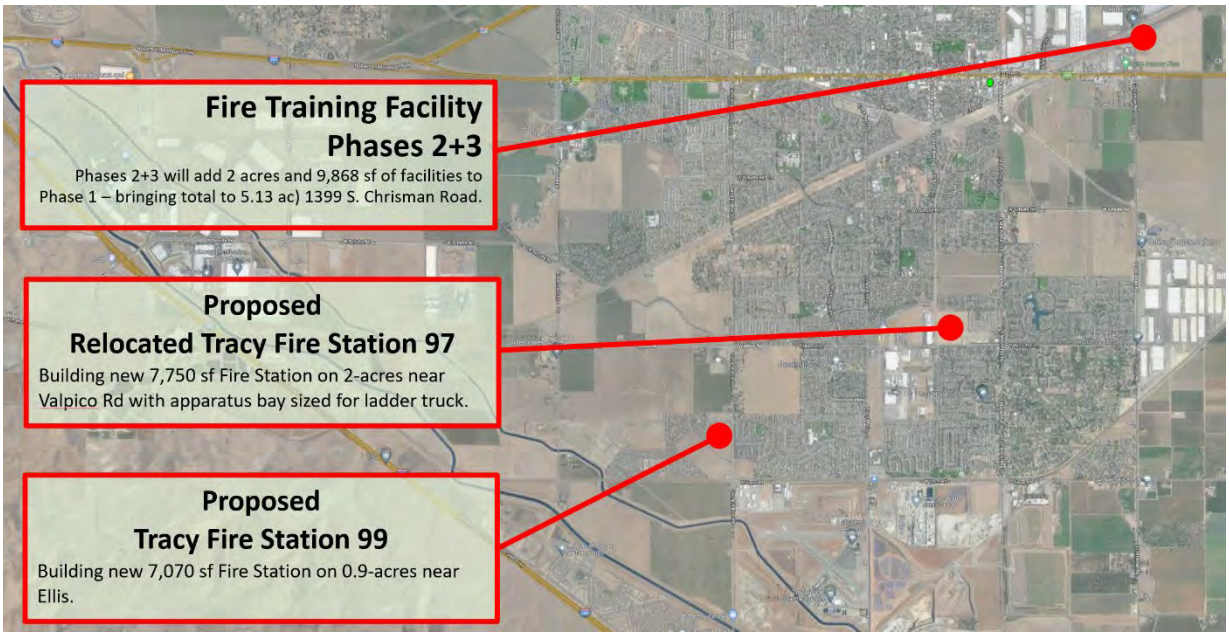


Figure 27 – Map indicating locations of Proposed City Fire Facilities

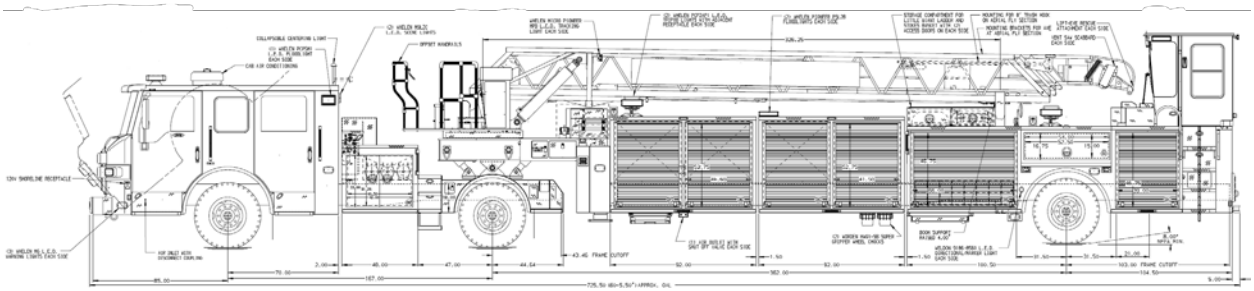


Figure 28 - 2021 60.5-ft Ladder Truck requires Larger Facility

Rural Fire District Station 94

In 1995, Station 94 was relocated to a 5,600 square foot facility at 16502 W. Schulte Road. The condition of this 26-year-old facility is poor. The station houses a 2003 Pierce/Saber type 1 pumper ALS unit staffed with three personnel and a 2016 HME type 3 engine. The station is located on a site adjacent to CAL FIRE Santa Clara Unit, Station 26.



Figure 29 – 1995 Tracy Rural Fire Station 94, 16502 West Schulte Road (to be relocated)

This master plan supports the relocation of Fire Station 94 to a new 7,750 square foot facility on a 2 acre site in the Cordes Ranch area, sized appropriately to incorporate a new ladder truck.

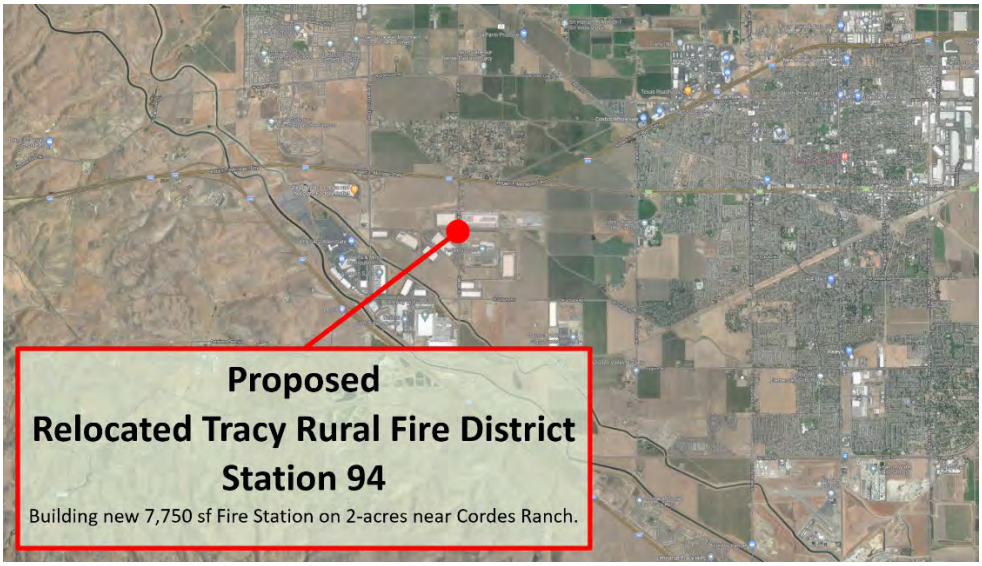


Figure 30 – Map indicating approximate location of Relocated Station 94

South San Joaquin County Fire Authority

In 1999, the City Fire Department and the Tracy Rural Fire District consolidated to form the South San Joaquin County Fire Authority (SSJCFA). The SSJCFA was created to provide fire protection services to the entire jurisdictional area of both the corporate City limits and surrounding rural community, including Banta, Lammersville, and Vernalis. Both Tracy Rural and the City of Tracy contract with the SSJCFA to receive fire protection services. The SSJCFA in turn contracts with the City of Tracy to provide employee and administrative services.

City Fire Station 91

In 2005, Tracy's Fire Station 91, dedicated "Eagan Station", was relocated from the downtown area to a new 7,400 square foot facility at 1701 West 11th Street. This met the recommendations of the 1998 Standards of Response Coverage report. Further review by Kirchhoff and Associates in 2008 confirmed that Station 91's new location would conform to the City's adoption of the NFPA 1710 Standard for 6.5 minutes total reflex response time. Station 91 is in good condition and it is the City's only "double house" station staffing both an engine and truck company. Staffed with three personnel, Engine 91 is a 2015 Spartan Hi-Tech type 1 pumper. Truck 91, a 2017 Pierce Tractor-Drawn Aerial, is also staffed with three personnel. A 2005 Pierce Kenworth Water Tender is also housed at Station 91. Both Engine 91 and Truck 91 are staffed to the Advanced Life Support (ALS) level.



Figure 31 – 2005 Tracy Fire Station 91, 1701 West 11th Street (to remain)

Rural Fire District Station 93

In 2006, Tracy Rural Fire District's Station 93 was relocated to a new 6,200 square foot facility at 1400 W. Durham Ferry Road. Station 93 houses a 2008 Pierce Saber type 1 pumper ALS unit staffed with three personnel. This facility is in good condition.



Figure 32 – 2006 Fire Station 93, 1400 W. Durham Ferry Road (to remain)

City Fire Station 92

In 2014, Tracy's Fire Station 92 and Fire Station 96 were relocated per the recommendations of the 2007 Standards of Cover Study. Both stations moved into identical new 5,100 square foot facilities.

Tracy's Fire Station 92 moved into the Northeast industrial area at 1035 E. Grant Line Road. Station 92 houses a 2015 Spartan Hi-Tech, type 1 pumper ALS unit staffed with three personnel and a 2008 HME, type 1 pumper from the California Office of Emergency Services (CalOES). Station 92 shall receive radio system upgrades – see Figure 20 for more information.



Figure 33 – 2014 Fire Station 92, 1035 East Grant Line Road (to remain)

City Fire Station 96

Tracy's Fire Station 96 moved closer to I-205 at 1800 W. Grant Line Road. Station 96 houses a 2009 Spartan HI-TECH type 1 pumper ALS unit staffed with three personnel. Station 96 also houses HazMat 42, a Type 2 Hazardous Materials response unit assigned from CalOES. The Fire Authority is one of only 12 local government agencies in the State of California to be assigned a fully-equipped Type 2 Hazardous Materials response vehicle from CalOES. The vehicle is available to respond to both local and statewide Hazardous Materials incidents. Personnel assigned to this station are certified Hazardous Materials Specialists.



Figure 34 – 2014 Tracy Fire Station 96, 1800 West Grant Line Road (to remain)

Tracy's Fire Station 92 and Fire Station 96 remain in good condition, but there are some functional issues as addressed by Fire Division Chief, David A. Bramell:

Neither floor plan included a public access bathroom (a citizen would have to walk through the station to use a restroom) and there is very limited space for the Captain to conduct a supervisory meeting in the office space (current Captain's office is within their bedroom).

Rural Fire District Station 95

Tracy Rural Fire District's Station 95, built in 2021, is a new 7,100 square foot facility at 7151 Tracy Hills Drive. Fire Station 95's plan addresses the aforementioned issues with Station 92 and Station 96. This facility is in accord with the 2017 Standards of Cover Study. This master plan supports the adoption of

Station 95 as the basis of design for future 7,100 square foot SSJCFA fire stations on similar 0.9 acre sites. Station 95 houses an ALS engine company staffed with three personnel.



Figure 35 – 2021 Fire Station 95, 7151 Tracy Hills Drive

City Fire Station 99

The Standards of Cover Study also recommends the construction of a new 7,100 square foot Tracy Fire Station 99 in the Ellis area, on 0.9 acres per this basis of design, bringing total fire station facilities to 52,800 square feet through buildout.

City Fire Training Facility

Finally, also in 2023, Phase 1 of a new Fire Training Facility is under construction at 1399 S. Chrisman Road. This facility represents a much needed upgrade, including training apparatus specifically designed for fire training. The existing 2,300 square foot Training Facility at 6649 S. Tracy Blvd, now the Capt. John J. Serpa Memorial Training Facility, once shared with Police, will similarly be upgraded for use solely by Police.

- Phase 1, funded prior to this study, consists of a fire training tower, site utilities, parking, and driveway on 3.13 acres.
- Phases 2+3, included in this study, consist of 2 acres of the following improvements:
    - Forty (40) person pre-manufactured classroom, two offices, clinical space, kitchenette, and restrooms
    - Additional Site Utilities (Electrical)
    - Rail Car props
    - Drafting pit
    - Above grade and below grade rescue props
    - Large apparatus and equipment storage facility
    - Connection to city wastewater and storm water systems

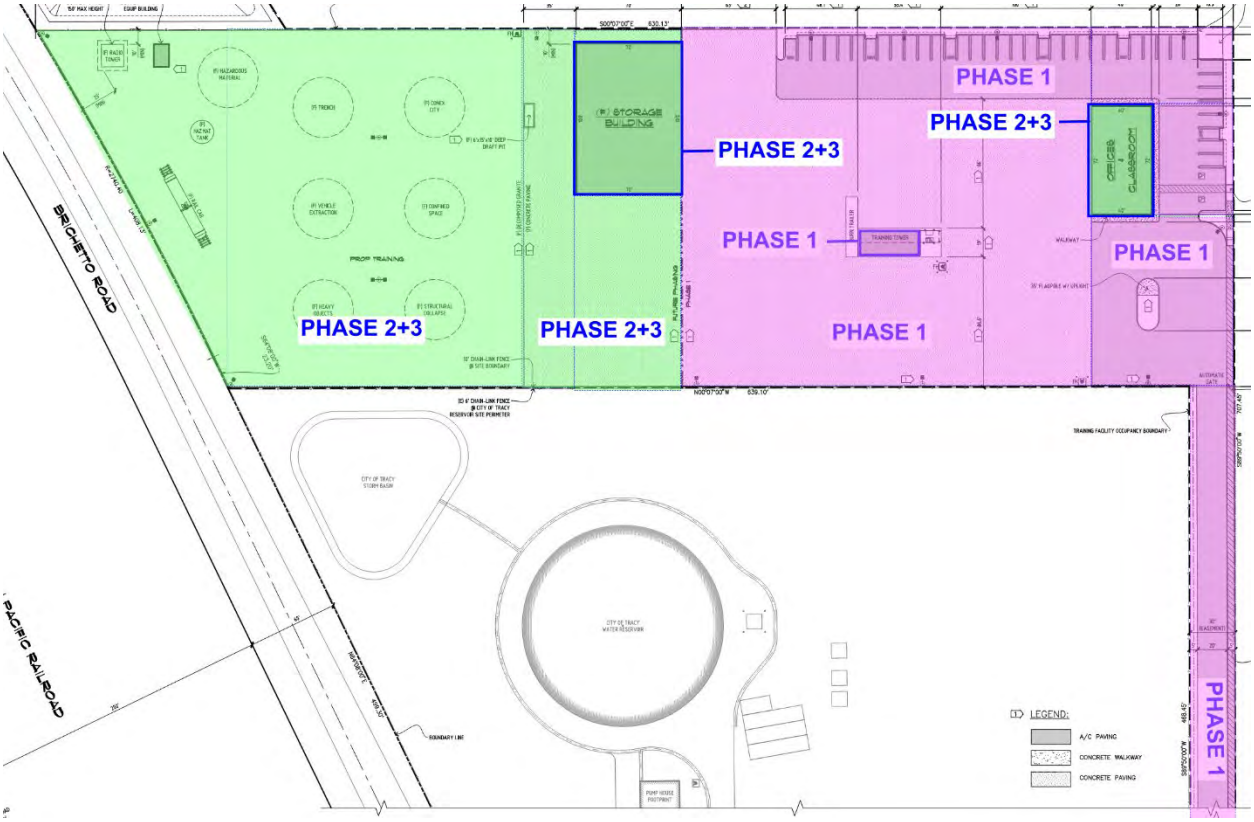


Figure 36 – 2022 Tracy Fire Training Apparatus at NEI Reservoir, 1399 S. Chrisman Rd (under construction)

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Police Facilities Citywide

1940 Police Building

In 1940, the City's first standalone Police station and jail was built on West 8th Street. The building is still standing to this day but is now a business office.



Figure 37 – 1940 Tracy Hall of Justice (decommissioned)

1979 Police Building

In 1979, the Police Department moved into the newly built 9,800 square foot Tracy Public Safety Facility Building at 400 East 10th Street as part of the new Civic Center complex. This 1-story building included cast-in-place concrete partition walls for the 2,400 square foot jail. The department at this time consisted of less than 30 personnel. The condition of this 42-year-old building is poor.



Figure 38 - 1979 Tracy Police Building, 400 East 10th Street (to be demolished)

1996 Police Building

In 1996, the Police Department relocated into the newly built 27,600 square foot City of Tracy Police Facility at 1000 Civic Center Drive. This 2-story building included a 1,000 square foot Evidence space, 1,000 square foot Holding Facility, and an 800 square foot Holding Facility Sallyport. The department at this time consisted of approximately 110 personnel. Tracy's population at the time was approximately 50,000 people. The condition of this 25-year-old building is good.

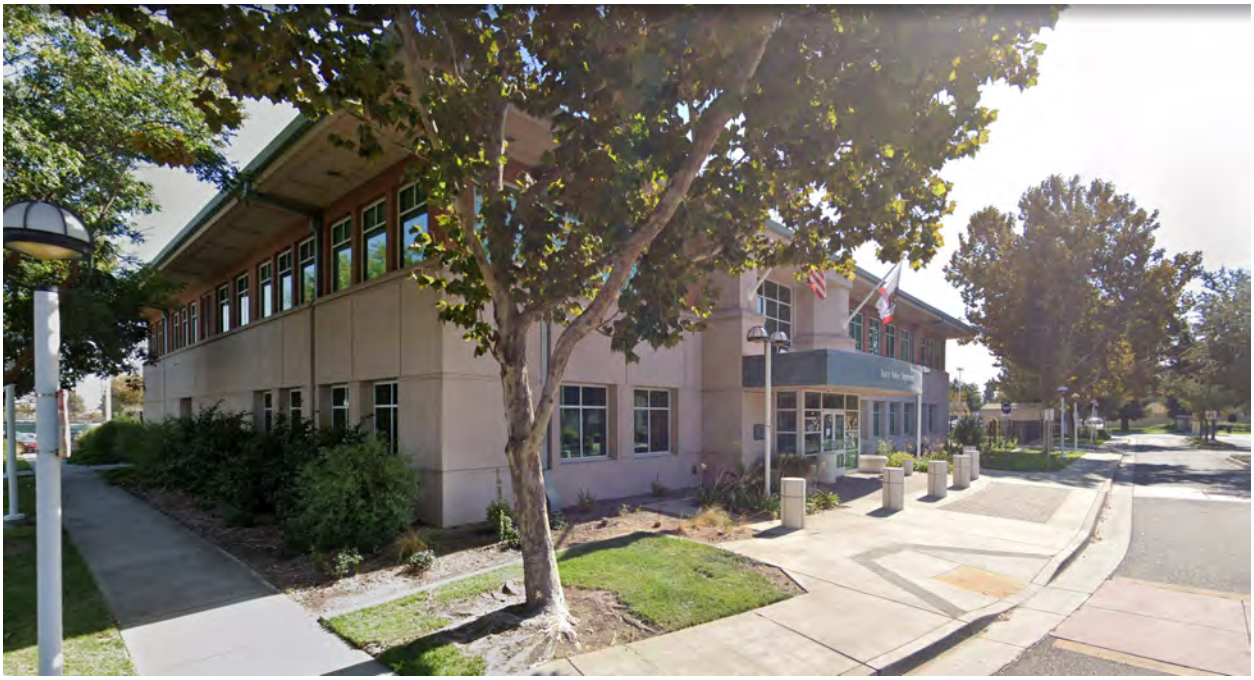


Figure 39 - 1996 Tracy Police Department, 1000 Civic Center Dr (to receive tenant improvement & addition)

Between 1996 and 2021, the Police Department repurposed space within their existing facility to accommodate population growth and the corresponding growth within the department. When repurposing and accommodating no longer proved sufficient, the department began to move some police functions into other facilities.

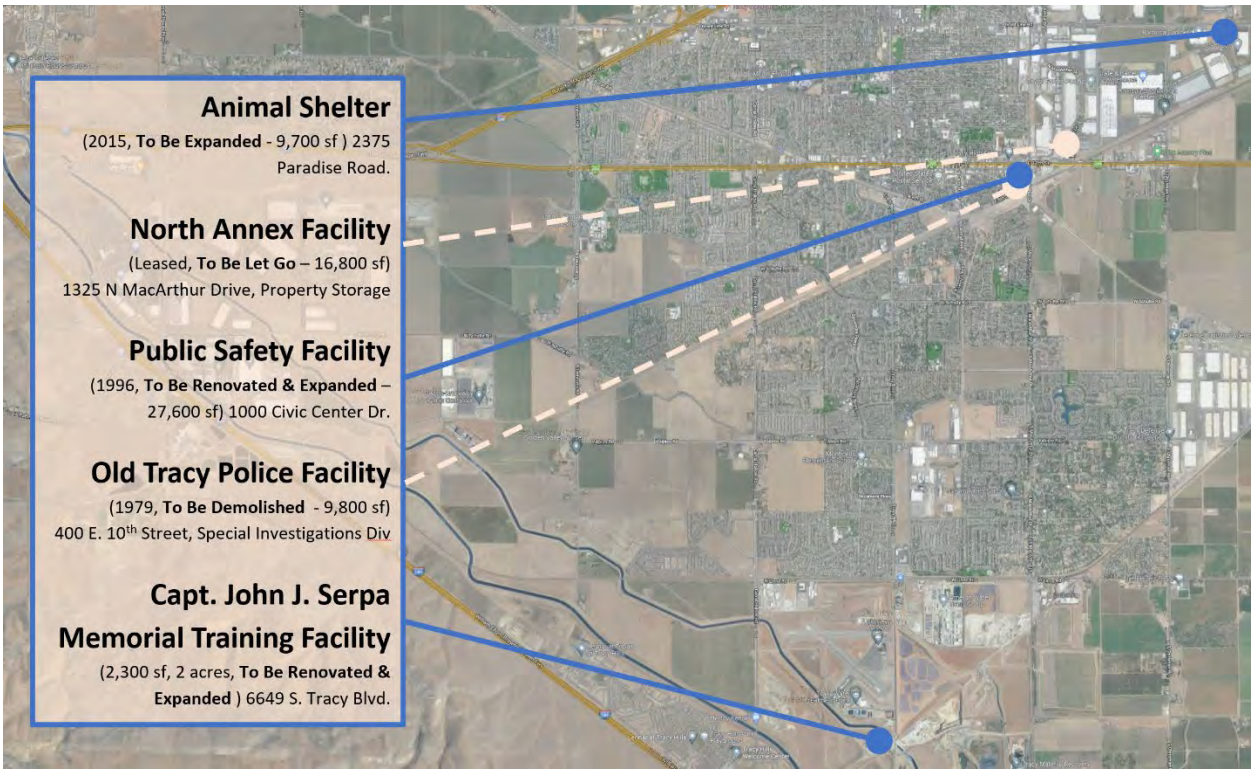


Figure 40 – Map of Existing Police Facilities

1979 Police Building, cont.

In 2012, the Police Department's Special Investigations Division returned to the 1979-era police building still standing at 400 E. 10th Street. This facility is inherently inadequate for meeting modern accessibility clearances and other code compliance standards. The concrete jail cell walls make renovations or any real use of that 2,400 square foot space impractical. In addition to the poor condition, space adaptation and non-compliance issues, separating detectives from the rest of the department potentially weakens esprit de corps. Because of these fundamental issues, this master plan does not count the department's space use at 400 E. 10th Street as "Existing Space" in its summary of attributable space and recommends its demolition.



Figure 41 – Back of 1979 Tracy Police Building, 400 East 10th Street (to be demolished)

City Animal Shelter

In 2015 the Police Department Animal Services Division moved into the newly built $3.8 million 6,000 square foot (9,700 square foot, including kennels) Animal Shelter at 2375 Paradise Road. The Animal Services Unit is comprised of nine employees consisting of a Supervisor, four Animal Services Officers, two Shelter Assistants, and two Administrative Assistants. Since Tracy had no animal shelter prior to 2015, this move did not alleviate the primary growth pressures impacting the 1996-era facility. The move did, however, expand the department's ability to serve the growing animal-loving population. The condition of this 6-year-old facility is excellent.

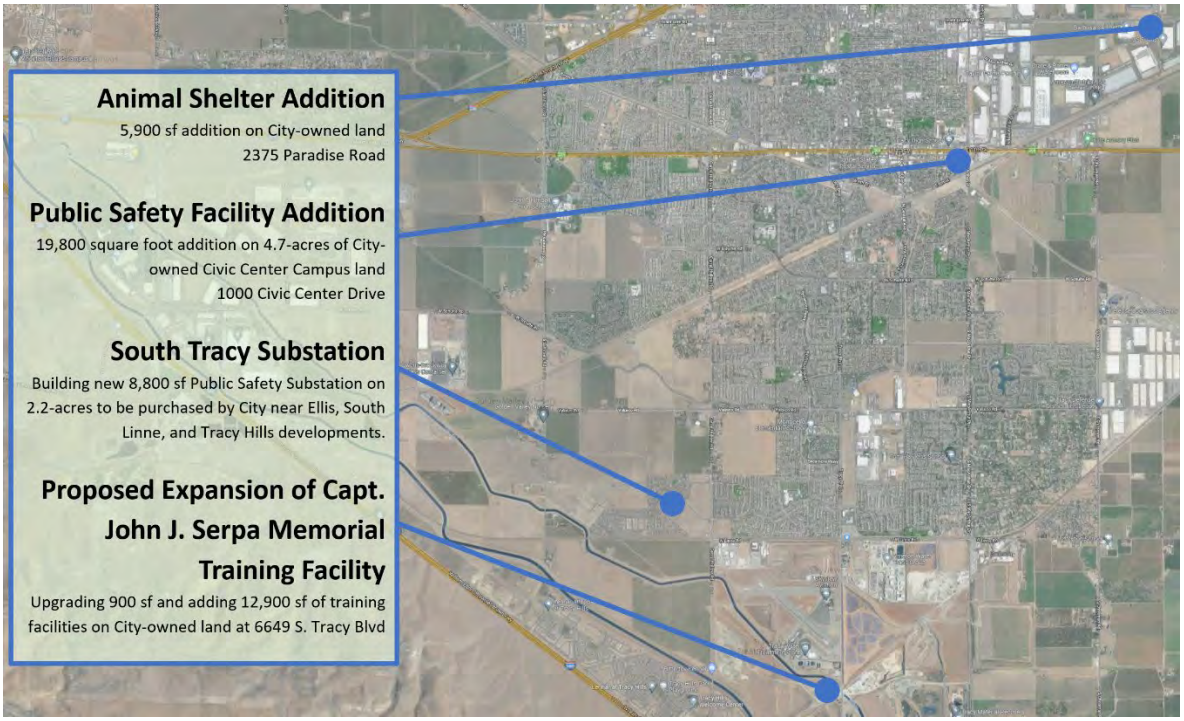


Figure 42 – Map indication locations of Proposed Police Facilities

This master plan supports the second phase addition of 5,900 square feet to the animal shelter to serve the City through Horizon Year 2040.



Figure 43 - 2015 Tracy Animal Shelter, 2375 Paradise Road (to receive addition)

2013 Police Facilities Master Plan

The prior 2013 Citywide Public Safety Master Plan proposed renovating the existing 25-year-old police building at 1000 Civic Center Drive to serve as a mixed use Downtown Police Substation, Emergency Operations Center, Dispatch Call Center, and IS Division office building. This plan also called for the construction of a 41,000 square foot Police Department Service Center on 4-6 acres along the 11th Street corridor to meeting the needs of a growing community through build out.

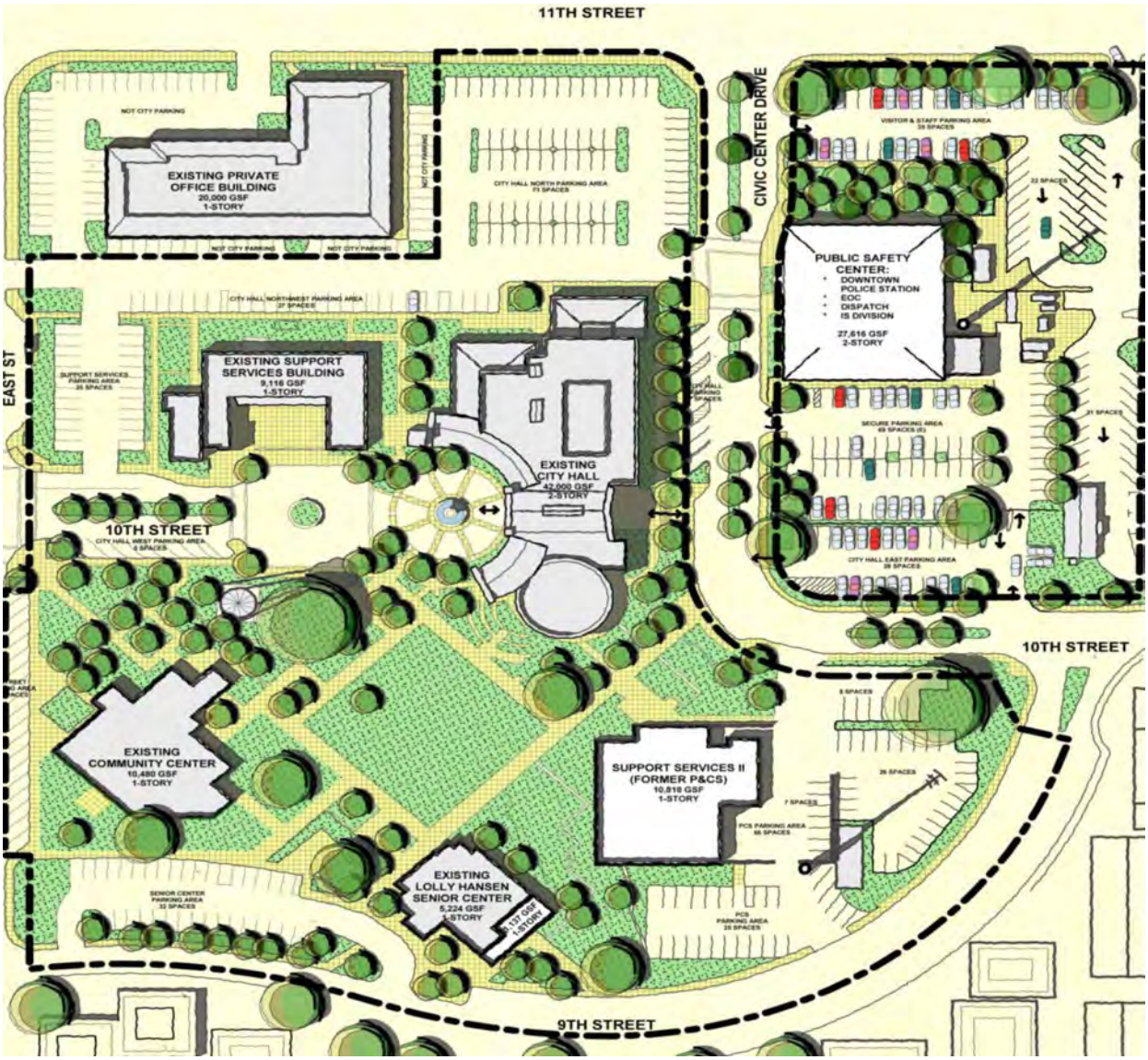


Figure 44 - 2013 Civic Center Master Plan

2023 Police Facilities Master Plan Update

Now, in 2023, the City's population has grown to approximately 95,000 people. The Police Department now consists of 154 personnel, 99 of those sworn officers, for a ratio of 1.03 to this population. The population of Tracy is expected to exceed 141,000 by Horizon Year 2040. The department will need to grow to 230 personnel to serve this population, with 152 of those sworn officers, for a ratio of 1.11. This need for 230 personnel is over twice the capacity of what the original 1996 facility was designed to accommodate, let alone the other ancillary spaces and functions needed to serve a growing population.

Having Investigations and Evidence Divisions operating out of separate facilities is not optimal with the deficiencies described in the preceding paragraphs above.

Civic Center Expansion of Police Building

This 2023 Citywide Public Safety Master Plan Update also supports the complete renovation of the 27,600 square foot Police Facility at 1000 Civic Center Drive; however, it further proposes to add to this facility in place with an expansion of the existing site. A 2-story addition of 19,784 square feet will result in a new 47,400 square foot all-in-one Civic Center Public Safety Facility at Horizon Year 2040. This requires the demolition of the nearby 1979-era police building and partial closure of 10th Street to expand the existing Police Department site at the Civic Center complex from 2.7 acres to 4.7 acres. In addition to providing room for the building expansion, a new vehicle sallyport and ancillary building, this site extension increases parking from 175 existing spaces, with 69 of those secure, up to 243 spaces, with 140 of those inside a secure enclosure. This renovation and addition will provide the Police Department with the building and site space it requires to serve the City through Horizon Year 2040.



Figure 45 - Bird's Eye View of Proposed Civic Center Expansion of Police Building and Site

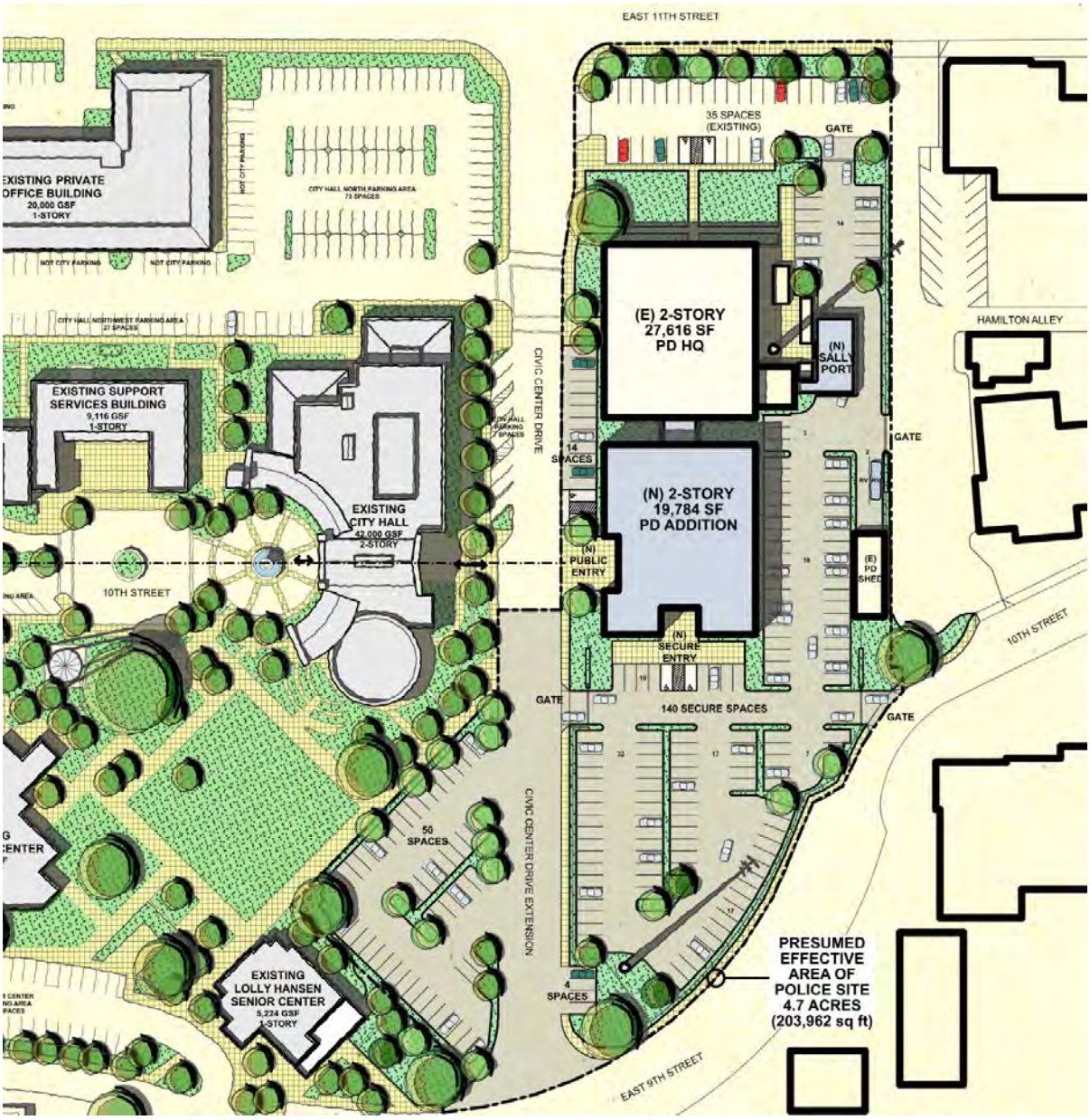


Figure 46 – Civic Center Expansion of Police Building and Site (at Horizon Year 2040)

Police Substation

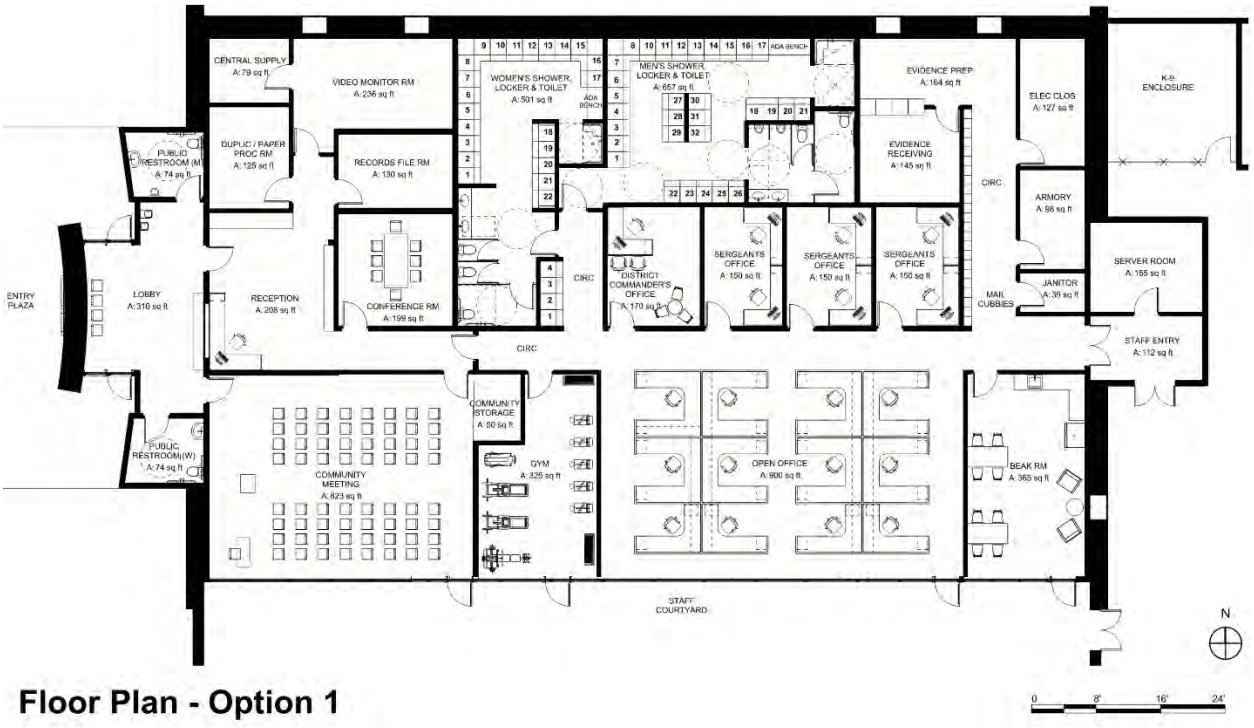
This 2023 Citywide Public Safety Master Plan Update also supports the construction of a new 8,800 square foot facility on 2.3 acres to be purchased by City near Ellis, South Linne, and Tracy Hills developments. This new site adds 94 parking spaces, with 74 of those inside a secure enclosure. With 20 visitor, 20 secure staff, and 54 secure police vehicle spaces, the substation site relieves some of the parking pressures on the Civic Center facility. The site further includes a covered space for an EOC "RV" Vehicle and covered motorcycle parking. This new substation will provide the Police Department with the building and site space it requires to serve the growing southern areas of the City through Horizon Year 2040.



Figure 47 – Civic Center Expansion of Police Building and Site (at Horizon Year 2040)

The following conceptual floor plan options for this facility provide open office space for twelve workstations and private office space for six sergeants workstations. The plans include a public lobby with restrooms and secure access to an 823 square foot Community Meeting room. The Community Meeting room, in turn, has access to a covered outdoor patio. For staff, across from lockers, is a 325 square foot Gym.

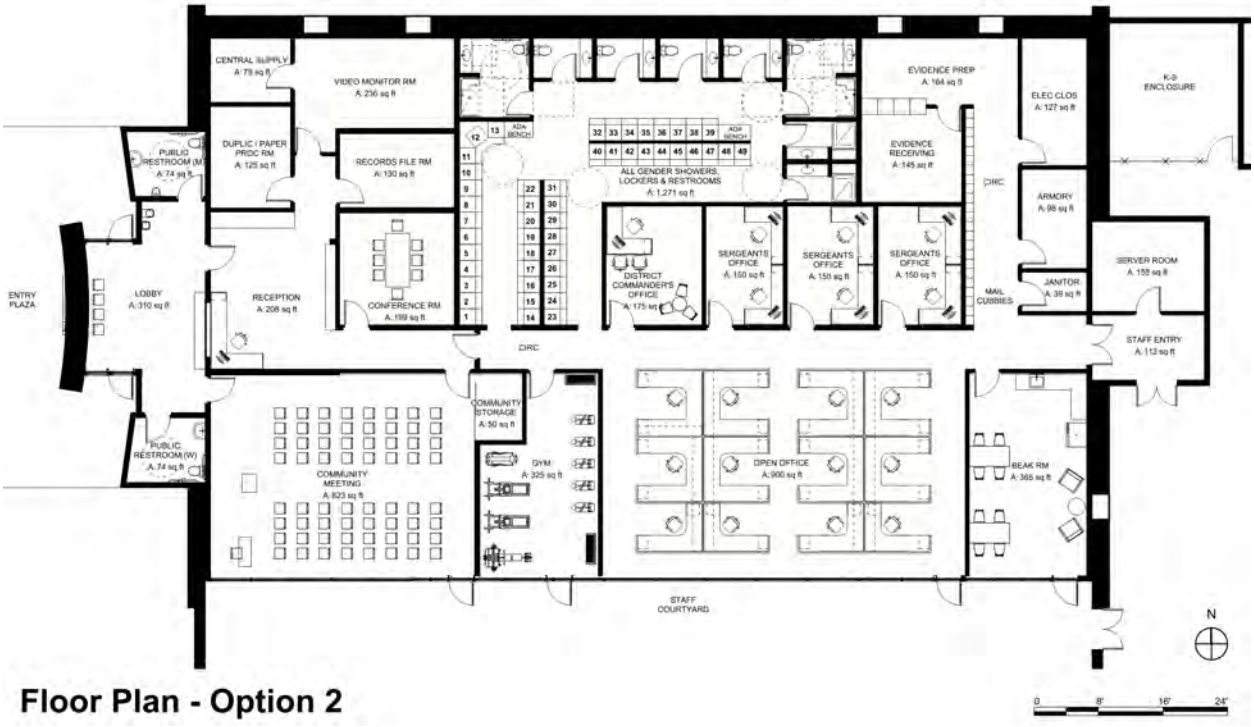
Where the options differ is in the locker room configuration. Option 1 (below) features a typical layout for separate men's and women's locker facilities with semi-private toilet rooms. Changing is assumed to take place in the locker area itself. The trade-off for the higher locker count in this Option (22 women, 32 men, 4 day lockers) is there's only space for 1 semi-private shower each. This Option is less flexible in that if more than 22 women or more than 32 men are posted to this Substation, some staff may miss out on having a full-size locker.



Floor Plan - Option 1

Figure 48 – Conceptual Floor Plan Option 1 with typical Male & Female locker rooms.

Conceptual floor plan Option 2 (below) features an all-gender locker room configuration, providing 49 lockers for any ratio of staff gender posted to this Substation. The locker room features 4 fully-private shower rooms, each with lavs, two of these rooms are fully-accessible and include toilets. In addition, the locker room features 4 fully-private toilet rooms, each with lavs. These 6 single-occupant rooms provide private changing space as well.



Floor Plan - Option 2

Figure 49 – Conceptual Floor Plan Option 2 with an all-gender locker room.

North Annex Leased Building

In 2019, the department leased a 16,800 square foot "North Annex" industrial space at 1325 N MacArthur Drive to serve as an offsite evidence facility. The facility is outfitted with evidence lockers, 3 large evidence vaults, a drying room, a property release room, space for evidence vehicles, and a car lift. The condition of this leased facility is excellent. However, any time evidence is separated from the main police building, including its sallyport and holding facilities, it creates a more challenging chain-of-custody environment for the department and separates the Evidence Technician from Records and Patrol personnel, potentially weakening esprit de corps. The existing 1,000 square foot Evidence spaces in the 1996 are now potentially made redundant and are specialized and not easily adapted to other uses. Because this is a leased space, this master plan does not count the department's space use at 1325 N MacArthur Drive as "Existing Space" in its summary of attributable space.



Figure 50 - Leased North Annex Space, 1325 North MacArthur Drive (to be let go)

For training facilities, this master plan supports the Police Department upgrading 900 square feet of the existing 2,300 square foot Capt. John J. Serpa Memorial Training Facility at 6649 S. Tracy Blvd and adding a much needed additional 12,900 square feet of training facilities. The Fire Department is currently constructing their own separate 8,100 square foot Fire Training Facility at 1399 S. Chrisman Road.



Figure 51 - Captain John J. Serpa Memorial Police Training Facility (to be upgraded and expanded)

Public Safety Radio Communications Facilities

As summarized in "South San Joaquin County Fire Authority (SSJCFA) Radio System Overall Assessment" (2020) by Silke Communications, the City shall upgrade its communications infrastructure as follows.

Future Radio System:

- Two channel, repeated VHF analog voted unicast system, digital (P25) ready, with remote monitoring capability.
- New subscriber radios shall be P25 capable with just software licensing upgrades.

Microwave network for voter connectivity:

- Microwave links to Station 91, 92, 93, 94, future 95, 96, current or future 97, Fire Training Facility, and Fire Administration.

Station Infrastructure:

All stations have SCD South, TAC 16 voted receivers, local radios and microwave connections.

- Station 91: tower upgrade to 100 feet depending on future Station locations to West
- Station 92: minimum 100 foot tower
- Station 93: minimum 150 foot tower
- Proposed Station 94: minimum 100 foot tower
- Recently Completed Station 95: minimum 100 foot tower
- Station 96: up to 100 foot tower depending on neighbors
- Proposed Station 97 or Fire Training Center: 180 foot tower that will become system hub
- All future Stations to have minimum 100 foot tower.

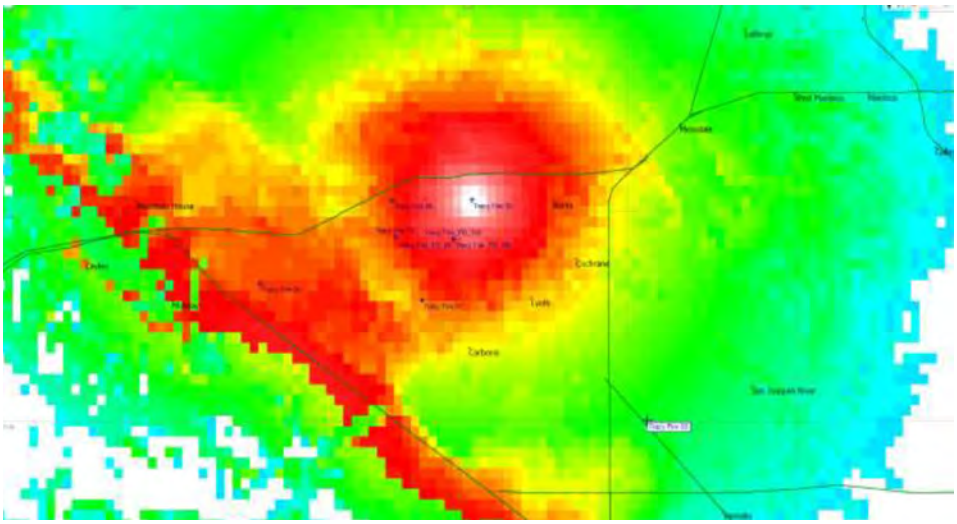


Figure 52 – Tracy Public Safety Radio Communications Systems Modeling

In addition, this master plan supports upgrades to the radio room at the 1996 Police Department Building, including replacing the voting hardware with new network enabled voters and improving the SCD and TAC 16 transmission system. These upgrades will provide the best near term radio system improvements for the least cost and least disruption. Also recommended is for the police to employ dual band portable and mobile (UHF/VHF) radios that will provide inter-operability with the Fire Department and other law enforcement agencies.

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COST

Estimate Summary

The Public Safety Master Plan carries a total project development cost of approximately $130.8 million as shown on Figure 53. Included are estimated construction costs ($84.2 million), indirect and contingency costs ($29.5 million), vehicles and furnishings, fixtures, and equipment (FF&E, $13.9 million), and land acquisition ($3.7 million). See also Appendix D.

PLACE NAME	2023 Construction Bid Day Cost	35% Indirect & Contingency: 10% Design & Planning; 10% CM; 15% General Contingency	FF&E & Vehicles	Land Acquisition	2023 Total Project Cost
Fire Headquarters | Station "A"					
Fire Station 91					
Fire Station 92					
Fire Station 93					
~~Fire Station 94~~ (To Be Relocated. Property ownd by SCFA.)					
Fire Station 94 (Relocation - Cordes Ranch Area)	$6,942,300	$2,429,805	$2,600,000	$500,000	$12,472,000
Fire Station 95 (Tracy Hills Area)	$6,197,192	$2,169,017	$874,518	$192,837	$9,433,000
Fire Station 96					
~~Fire Station 97~~ (To Be Relocated. Sell property.)					*($451,350)*
Fire Station 97 (Relocation - Valpico) incl. Ladder Bay	$6,942,300	$2,429,805	$1,000,000	$500,000	$10,872,000
Fire Station 99 (Ellis Area)	$5,427,849	$1,899,747	$1,000,000	$233,012	$8,561,000
Fire Training Facility - Phases 2 & 3	$6,793,881	$2,377,858	$500,000	$0	$9,672,000
SUBTOTAL FIRE DEPARTMENT	**$32,303,500**	**$11,306,200**	**$5,974,500**	**$1,425,800**	**$50,558,700**
PD Remodel & Addition on Expanded Civic Center Site	$31,599,384	$11,059,784	$2,160,114	$0	$44,819,000
~~PD Annex~~ (1979 Police Station to be Demolished)					
~~PD North Annex~~ (Leased - to be let go)					
South Tracy Police Substation	$9,479,695	$3,317,893	$648,049	$1,760,000	$15,206,000
Police Department Training Facility	$4,887,202	$1,710,521	$36,098	$402,925	$7,037,000
Police Department Animal Shelter - Phase 2	$5,044,104	$1,765,436	$1,000,000	$0	$7,810,000
SUBTOTAL POLICE DEPARTMENT	**$51,010,400**	**$17,853,600**	**$3,844,300**	**$2,162,900**	**$74,872,000**
Public Safety Radio Communications Facilities	$862,240	$301,784	$4,067,185	$125,000	$5,356,000
SUBTOTAL COMMUNICATIONS FACILITIES	**$862,200**	**$301,784**	**$4,067,185**	**$125,000**	**$5,356,000**
TOTAL PUBLIC SAFETY FACILITIES (rounded)	**$84,177,000**	**$29,462,000**	**$13,886,000**	**$3,714,000**	**$130,790,000**

Figure 53 - Public Safety Master Plan Cost Estimate Summary

<u>Public Safety Radio Communications Facilities</u>

The total project cost of the Public Safety Radio Communications Facilities have been estimated at approximately $5.4 million. See description on page 43 for more information about the system.

Facility Allocations

The City is conducting an independent analysis of the public safety impact fees necessary to cover the costs of the proposed new public safety buildings in the City of Tracy. This analysis includes a review of the facilities needs, and resulting building program and cost estimates, in this report. The purpose of this review shall be:

- to validate public safety facility improvement needs to support Horizon Year 2040 and buildout of the Tracy General Plan;
- to identify and segregate costs attributable to current deficiencies for existing development versus costs for facility expansion and upgrade requirements associated with new development; and
- to then provide an estimate of the impact fee burdens that would be placed on different categories of new development in accordance with their relative contribution to demand for the new or upgraded facilities, in order to fund the capital facilities program.

Land Acquistion Value

For the purposes of estimating land acquisition value, this report estimates $250,000 per acre. This unit cost derives from the Harris & Associates 2019 Public Safety Impact Fee Update. Notable exceptions to this unit cost (also deriving from the 2019 Fee Update):

- $402,925 for PD Training Facility land acquistion, and
- $1,760,000 for 2.2 acres of South Tracy Police Substation land acquistion.

Site Development Cost

For the purposes of estimating site development cost, this report estimates $800,000 per acre. This unit cost derives from cost data averaged from multiple comparable public safety projects. Notable exceptions to this unit cost are the following facility upgrades and additions not requiring comprehensive landscaping or parking additions:

- $275,000 per acre for FD Training Facility expansion,
- $250,000 per acre for PD Training Facility expansion,
- $200,000 per acre for PD Animal Shelter Phase 2 expansion, and
- $360,000 per acre for the Radio Communications Tower improvements.

Building Construction Cost Inflation

For the purposes of building construction cost, this report estimates an average 2023 Bid Day Unit Cost of $730 per square foot of combined remodel and new construction across all projects.

- Fire facility unit costs average $820 per square foot for all new construction.
- Police facility unit costs average $670 per square foot for approximately 38% remodel construction and 62% new construction.
- The Radio Communications Tower unit costs reflects much more dense construction necessities for its 400 square feet, with a unit cost of $2,160.

These unit costs derive from cost data averaged from multiple comparable public safety projects.

FUNDING OPTIONS

This study identifies and projects public safety facility needs for the City of Tracy and it estimates the total project costs for these facilities in current dollars. The City is providing a separate study, looking at all proposed master plan updates, examining the nexus of attributions of these costs, whether existing vs new development, or facilities serving populations inside the City limits vs those outside those limits.

Per above, the City of Tracy is conducting a concurrent study to document the required nexus findings to implement a fee program. This study will establish a nexus between future development in Tracy, the public facilities that will serve those projects, and the impact fees that will fund those facilities. The purpose of this separate, concurrent study is to ensure that a rational nexus exists between future development in the area and the use and need of the proposed infrastructure.

As outlined previously, the vast majority of Public Safety Master Plan costs are the responsibility of the City of Tracy. A small portion of the costs for fire protection facilities are attributable to existing rural (as opposed to newly developed) properties within the service areas of the proposed new fire facilities. After discussion of this matter with Tracy fire authorities, it was deemed prudent to leave it up to the City to negotiate any cost sharing with their rural neighbors.

Funding for Costs Attributable to Existing Development

The Public Safety Master Plan update provides the basis to identify the new facilities that are needed as the City grows as well as the cost of those facilities. The City of Tracy follows the principle that new development pays its fair share of costs for public facilities and services. Most, but not all, Public Safety Master Plan costs are attributable to new development, because without the increase in demand for City services created by new development, the City would have only limited need for new or expanded Public Safety facilities. However, the City still has the need to fund a portion of the Public Safety Master Plan costs that cannot be collected from new development. Following are a number of options that the City could consider for funding existing development's share of costs:

- **Existing Public Safety Facilities Impact Fee Fund Balance** – Funds previously collected from developments that have been completed (i.e., now part of the base of existing development) but not yet expended are likely to be the first source of funding to pay for existing development's share of required facilities. The City will need to confirm that funds are eligible to be spent on the improvements included in this Master Plan.
- **Funds Collected as Part of Development Agreements –** To the extent that the City has or will collect revenues from prior or future development agreements to help fund public benefits in general, or specific public safety improvements, the City may have the ability to utilize some of these funds to pay for existing development's share of costs. This will depend on the specific terms of individual development agreements. Similarly, if existing or future development agreements call for developers to provide in-kind contributions towards public safety improvements, this may help to offset some of the responsibility of existing development to help fund improvements.
- **Grants from Other Governmental or Charitable Sources** – The City may be able to gain access to grant funds from programs for which improvements included as part of this Master Plan would be permissible uses of funds. Such grant funds could help to pay for existing development's share of the improvements. This may include sources such as Community Development Block Grants from the U.S. Department of Housing and Urban Development and

public safety grants from agencies such as the U.S. Department of Homeland Security, and the Federal Emergency Management Agency. Some local, regional, or national charitable organizations may also offer grant funding opportunities from time to time.

- **Parcel Taxes, Assessment Districts and Other Funding Mechanisms Requiring Voter Approval** – If other funding mechanisms discussed above do not provide sufficient funding to cover existing development's share of costs for public safety improvements, the City could utilize funding from voter-approved revenue mechanisms to cover existing development's share. For example, in November 2016 the City Council and voters passed an additional ½ cent local sales tax (known as Measure V). This measure replaced a prior ½ cent sales tax measure that expired. The City began collecting the extra half-cent sales tax in April of 2017 for a term of 20 years. It is expected to generate approximately $9 million annually for the City's General Fund. Depending on other needs, the City could allocate portions of this annual revenue to help pay for existing development's share of public safety facilities costs. If Measure V funds are not available, or insufficient, the City could pursue voter approval to establish a new funding source that could involve new parcel taxes, special taxes, special assessments, or other mechanisms. The City would need to hold an election to allow the affected voters to decide if they wish to tax themselves in order to raise the necessary funds. If a new tax measure was property-based, new development areas that will pay impact fees or make contributions through development agreements, and other areas that have already contributed their fair share of costs through prior payment of impact fees or through development agreements could be exempted from paying the new levies.
- **Infrastructure Financing District** – With the abolition of California Redevelopment Agencies in 2011, cities lost a powerful tool to fund public facilities using property tax increment that otherwise would have accrued to various tax-receiving entities. To partially address the loss of Redevelopment Agency tax increment financing, the State enacted legislation to allow formation of Enhanced Infrastructure Financing Districts (EIFD) and Community Revitalization Investment Authorities (CRIA). Powers of these districts include tax increment financing, but they each have different authorized activities and carry different requirements for how they operate. An element that EIFDs and CRIAs share in common is that they are typically only able to access the tax increment that is directly controlled by the local jurisdiction (e.g., City of Tracy); thus, their ability to generate revenues is limited, particularly in areas where there will be limited new development, such as in existing developed parts of the City.
- **Bond Proceeds** – If the City has an ongoing source of annual revenues that it can dedicate to debt service payments, the City can issue different types of bonds in order to obtain funds to pay for "up front" costs and then repay the bonds over time. General Obligation bonds, which are backed by the City's full faith and credit, require voter approval. Other types of bonds, such as Mello-Roos Community Facility District bonds, or certificates of participation (COPs), which involve more limited security for repayments to bondholders may not require voter approval but have different legal requirements.
- **General Fund Allocations** – After other possible funding sources have been exhausted, the City Council will have the discretion to allocate General Fund monies to help pay for existing development's share of required new facilities, to fill remaining funding gaps. Through its annual budgeting process, the City Council would approve a transfer of money from the General

Fund to its General Projects Fund (#301) where the funds could then be allocated to support specific Public Safety capital projects. For example, this would be the mechanism to allocate a portion of Measure V funds towards Public Safety Master Plan projects.

Funding for Costs Attributable to New Development

New development may contribute its fair share of costs through any of the other funding mechanisms that have previously been mentioned. However, the most typical mechanisms to fund new development's share are:

- Development Impact Fees (i.e., Tracy Infrastructure Master Plan (TRIMP) fees)
- Mello-Roos Community Facilities Districts
- Special Assessment Districts
- Development Agreements (including provision of in-kind improvements, such as construction of new facilities, or provision of sites for new public facilities)

These funding mechanisms are typically established as part of the process of entitling new developments, so voter approvals are not typically necessary. In the case of development impact fees, the City will update the TRIMP fee program to reflect the updated Public Safety Master Plan and ensure that the appropriate level of funds is collected to pay for new development's share of the facilities costs, and to ensure that the City can then expend fee revenues collected through the TRIMP in accordance with an updated fee program.

When mechanisms other than development impact fees are used to pay for only a portion of new development's share of costs, credits can be given to reduce the amount of development impact fees that would otherwise be paid. In addition, sometimes developers provide more than their fair share of public improvements and agree to be repaid over time by impact fees that are paid by subsequent developers who benefit from the improvements.

In addition to development impact fees and the mechanisms listed above, private transaction fees are another mechanism that is being utilized more frequently in California and other states to collect funds from new development. A private transaction fee uses a private sale of real estate to trigger a contractual requirement that funds be paid for a certain purpose. For example, a private transaction fee could stipulate that a certain dollar amount be paid into a fund to pay for public safety improvements every time a home or commercial property is sold, within a specific area. If utilized in place of development impact fees, the City should be aware that private transaction fees may defer the ability to fund new public facilities, since impact fees are typically paid before homes are constructed, while private transaction fees might not be collected until homes are completed and sold to homebuyers.

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DESIGN GUIDELINES

In order to assure consistency with existing City guidelines, a review of relevant existing guidelines is shown here, supplemented with additional recommendations relevant to the CPSMP update.

General Plan Land Use Guidelines

The City's General Plan Land Use Element includes goals, objectives, policies and actions for all public facilities and specified private improvements:

- Establish a clearly defined urban form and city structure.
- Comprehensively plan for new development in the City's Sphere of Influence.
- Ensure that the public facilities such as schools, parks, and other community facilities are accessible and distributed evenly and efficiently throughout the City.
- Promote efficient residential development patterns and orderly expansion of residential areas to maximize the use of existing public services and infrastructure.
- Encourage development near transit stations including the multi-modal station in Downtown, and the Altamont Commuter Express (ACE) station or stations.
- Expand the City's cultural and arts facilities.
- Locate services and amenities within walking distance of neighborhoods.
- Target new uses for the Downtown to reinforce its role as the heart of the City.
- Establish the Downtown as the governmental and cultural focus for the City and the region.
- Ensure land use patterns that minimize conflicts between transportation corridors and neighboring uses.

See "City of Tracy General Plan" (2011).

Civil Engineering and Construction Guidelines

The City has previously commissioned a study that includes minimum standards for the design, construction, maintenance, repair, and alteration of all public facilities and specified private improvements:

- Roadways.
- Storm Drainage.
- Wastewater Facilities.
- Water Facilities.

See "City of Tracy Engineering Design & Construction Standards" (2020).

Streetscape Design Guidelines

Guidelines ensuring that the installed landscape enjoys a long lifespan, is aesthetically pleasing, with minimal maintenance and watering requirements. Tracy's Downtown has a compact, grid street system and serves as the historical heart of the City. There are numerous historical buildings that enhance the City's identity, walkable main streets with a diverse mix of uses, and a small town urban fabric. The City has previously commissioned a study that includes:

- Sound Wall Design.
- Planting Design.
- Irrigation Design.
- Side Streetscapes, Medians and Intersections.

See "City of Tracy Standard Plans" (2020).

General Plan Community Character Urban Design Principles

The City's General Plan Community Character Element includes urban design principles for all public facilities and specified private improvements:

- Human-scale Design.
- Focal Points.
- Edges.
- Visual Landmarks and Entryways.
- Building Siting to Hold Corners.
- Pedestrian Orientation.

See "City of Tracy General Plan" (2011).

Urban Design Guidelines[1]

- Parcel Geometries
- City buildings shall, with some exceptions, be oriented parallel to the existing public streets.
- Civic Center buildings south of 10th Street shall remain oriented 45 degrees to the other parcels in order to align with the existing diagonal walkways.
- Build-to Lines
- To create clearly defined public spaces, the City shall impose build-to lines.
- The goal is to have a minimum of 80% of each building conform to a typical build-to line.
- Pedestrian Plazas, Arcades and Entries
- Buildings shall be designed to enhance the definition and the quality of the plazas they face.
- Major pedestrian entries of civic buildings shall be from boulevards or major plazas.
- Entries shall be easy to find and inviting and shall be protected from the elements by covered arcades.
- Arcades shall be provided to unify civic buildings co-located on the same site and not separated by a vehicular way.
- Landmark Buildings
- All landmark buildings will have prominent roof forms developed from a three tiered hierarchy: major, secondary, and minor.
- Major landmarks shall be the tallest, rising significantly above the nearest roofs.
- The major landmarks are to be the most recognizable from afar and have the most memorable forms.
- The secondary landmarks shall be visibly distinct when seen from the vantage of the nearest public street or easement. These landmarks should not compete with the major landmarks.
- The minor landmarks are special buildings that should be architecturally distinct from, be easier to find, and be more inviting than the other non-landmark buildings.
- All other buildings shall have flat roofs with natural colored roof ballast.

Architectural Design Guidelines[2]

These guidelines have been developed to maintain a high quality appearance and to assure compatibility and harmony of all buildings. The guidelines are not intended to limit creative design or individuality. These guidelines shall apply unless an exceptional quality of design, materials, and contribution to the common character and public spaces can be demonstrated.

The architecture of Tracy's public buildings should promote a civic identity appropriate to the importance of the site. Each building should be reflective of the following:

[1] Adapted from Civic Center Urban Design Guidelines, Group 4, 1999
[2] Adapted from Civic Center Urban Design Guidelines, Group 4, 1999

- Be of enduring quality.
- Demonstrate design excellence.
- Unacceptable styles or themes
- Overtly historical.
- Mission or Spanish revival.
- Residential scale or imagery.
- Commercial or retail imagery.
- Corporate or office building style or imagery.
- Required Building Features
- Arcades.
- Varied building forms.
- Pedestrian scaled elements
- Articulated building “bases” at a pedestrian scale. Building bases should, at appropriate locations, be suitable as places to sit.
- Rhythm of windows and wall scaled to the walking pace of a pedestrian.
- Interesting elements and details to look at.
- Places to gather.
- Garden walls and trellises.
- Prominent roofs
- Visible from major boulevards and promenades.
- Material shall be metal, concrete, or concrete tile of a neutral shade.
- Articulated from the building mass.
- Flat roofs are not acceptable for landmark buildings.
- Materials and Finishes
- Stone, brick or concrete masonry
- Cast-in-place or precast concrete
- Cement Plaster
- Metal, concrete, or clay tile (flat profile) roofing for landmark buildings
- Parapet bordered, ballasted, membranes for flat roofs.
- Color Strategy
- Bright and sunny
- Light colors predominate
- Neutral shades on roofs and special wall surfaces
- Complimentary colors on accent features

Sustainability Measures

The City’s Sustainability Action Plan includes measures to achieve sustainability targets as applicable for all public facilities and specified private improvements:

- Green Building Ordinance
- Energy Efficiency in Site Planning and Design
- Energy Efficient Products
- Energy Efficient Retrofits for City Street Lights
- Solar Panel Installations on Municipal Facilities
- Energy Efficiency Settings for City Desktop Computers
- Reduced Parking Requirements
- Support for Bicycling
- Support for Transit
- Smart Growth, Urban Design and Planning
- Parking Cash-Out Programs for Employees
- Increased Use of Low Carbon Fueled Vehicles
- High-Density Infill Projects
- Non-Toxic Building Materials
- Green Building Training for City Staff
- Emerald Tracy Website
- San Joaquin Council of Governments Sustainable Communities Strategy

See "City of Tracy *Sustainability Action Plan*" (2011).

This study augments the above already published measures with the following regional-appropriate measures to achieve sustainability, including extending the survivability of facilities. These are recommended as design guidelines for the public facilities to be built resulting from this master plan.

Extended Survivability – Facilities built under the CPSMP update should be designed with extended survivability built-in. The recent earthquake & tsunami in Japan is yet another example of what happens in disasters when structures are not able to survive and remain in service. This was probably a 300-year event, but the probability of such events is often misunderstood and misused. This event could easily have happened today, here in California. While an ocean tsunami is not possible in Tracy, the area is certainly earthquake-prone. The USGS database shows that there is a 98.035% chance of a major earthquake within 50 kilometers of Tracy – well within the lifetime of Tracy's public buildings and representing a serious threat to the delivery of public services when they are needed most. This may be the City of Tracy's highest duty and responsibility - to serve the public during times of critical emergency. (See Figure 54.)



Figure 54 - Earthquake, Chile

To do so, the City must have facilities that have survived any predicted event and remain functional and can support emergency service delivery. Most planning and building design standards for earthquakes are based on the ability of a structure to withstand only a 100-year event. The earthquake and tsunami in Japan, Hurricane Katrina, and other major events demonstrate the need for facilities to remain useable post disaster for extended periods without electric power and other services. Designing for this is called the "*extended survivability*" design process.



Figure 55 – Viscous Damper Retrofit, Kent WA

Extended Survivability Defined - "*Extended Survivability*" is the ability of a facility to remain useable even when disaster has stricken and electric and other utilities are down for extended periods. As an urban planning and architectural design concept, it defines how a district or building is able to continue to operate even during a protracted outage of utility services such as electric power, natural gas, water and sewerage. As applied in California, it defines the ability to survive the maximum anticipated earthquake, forest fire, flood or other natural disaster, and to endure the prolonged power and other outages that may follow. At present, public safety facilities need only to comply with minimum building code requirements and provide for emergency power generation for a limited period of time, up to 72 hours. Largely unaddressed, however, is the long term functionality of the post-disaster facility. Examples of earthquake-resistant design are shown in Figure 55, Figure 56, Figure 57, and Figure 58.

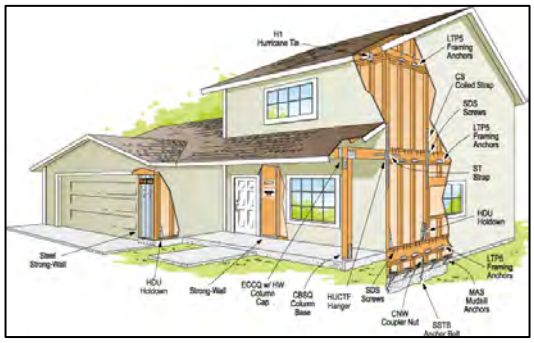


Figure 56 – Code-Prescribed Earthquake-Resistance

This is where extended survivability comes in. This is especially critical for Police and Fire essential services buildings which need to function after a disaster. Advances in earthquake engineering, energy conservation, and design with climate and onsite energy production have made this possible to achieve. However, it requires the adoption of a new architectural and engineering design paradigm. A major component of this paradigm is the use of sustainable and passive design with climate-adapted techniques.

Passive planning and design principles utilize the forces of nature to help ensure continued building functionality. Structural design techniques such as using "shock absorbers" in the frame to soften the blow of earthquake forces, allow the building to respond with minimal impact to structure and contents. (See Figure 61, p.58) Use of natural lighting from skylights and windows allows daytime building use without electric power for lighting.

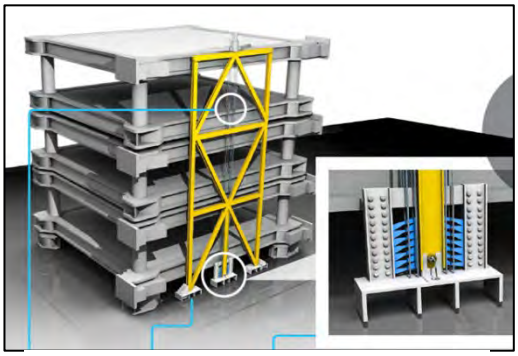


Figure 57 – Steel Fuse Technology, Stanford & Northeastern Universities

Natural ventilation and operable windows help ensure that the building can be used even when power or fuel supply for mechanical systems is compromised. Heating and cooling load avoidance strategies, passive solar design principles, and use of thermal mass to reduce indoor temperature fluctuation are all effective techniques. The reduced demand on emergency power generation resulting from the above listed strategies greatly extends the period of time when the building can remain operational. Finally, small photovoltaic electric systems can then maintain computer and critical communications functionality.

Benefits & Relation To Sustainability **-** The three main benefits of extended survivability in buildings are: 1) *extended emergency operations* are provided long after onset of an emergency, 2) *workplace quality* is dramatically improved and 3) *energy-efficiency* is improved substantially reducing energy costs and making LEED certification easier.

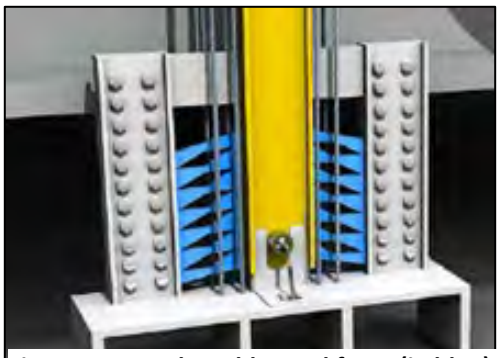


Figure 58 – Replaceable steel fuses (in blue) contort to absorb seismic energy.

Extended Emergency Operations - The first benefit is that services remain available in a post-emergency scenario and allow for continuous, operations long after the onset of an emergency event such as earthquake, flood, fire, etc. Services required for functionality, building envelope integrity, safety provisions, water and energy availability and the presence of light and air are all provided in a cascading arrangement depending on the extent and duration of emergency. (See Figure 59.)

OPERATION		NORMAL MODE	EMERGENCY MODE	EXTENDED SURVIVABILITY MODE
		normally available	<72 hr. post-event	>72 hr. post-event
		(N)	(E)	(ES)
FUNCTION	All functions fully operational	x		
	Most functions are operational	x	x	
	Critical functions are operational	x	x	x
ENVELOPE	Envelope is intact and fully functional	x		
	Envelope, if damaged, can be immediately occupied	x	x	
	Envelope, if damaged, operates in manual mode	x	x	x
	Envelope admits natural light and air for occupancy	x	x	x
SAFETY	Structure resists all normal and lateral loads	x		
	Structure may be damaged but is safe to occupy	x	x	
	Structure and utilities may be damaged but safe to oc	x	x	x
WATER	Water systems are fully available	x		
	Water supplied by City pressure or e-generator pumps	x	x	
	Water provided only by storage or solar pumps	x	x	x
ENERGY	Normal heating and cooling is available	x		
	Heating and cooling powered by e-generator	x	x	
	Passive heating and cooling, thermal mass	x	x	x
	Photovoltaic with battery backup	x	x	x
LIGHT & AIR	Mechanical ventilation fully available	x		
	Electric lighting fully available	x		
	Electric lighting available assist from e-generator	x	x	
	Natural ventilation with power assist from e-generator	x	x	
	Natural lighting available with battery nightlighting	x	x	x
	Natural ventilation available	x	x	x

Figure 59 - Table of Extended Emergency Operations

Normal (N) Mode operations provide for full serviceability. Emergency (E) Mode operation takes effect during the first 72 hours of an emergency and provides most services normally available, thanks in large part to the presence of emergency power generation with proper fuel supply. (See Figure 60.) Extended Survivability (ES) Mode provides for continued serviceability during protracted emergencies when the grid may be down for long periods of time, beyond the 72-hour duration fuel supply and when refueling may not be an option due to the nature of the emergency, for example in a major earthquake. In this mode of operation, unlimited and ongoing operations of critical systems are possible.



Figure 60 – Emergency Generator with Shear Lugs Added to Seismic Skid Mount

The traditional code-based design approach does not design with extended survivability in mind. Design to code-only assures life safety for typical structures so people can get out, but does not limit damage to the degree that the building can remain in use. After an earthquake, for example, buildings still standing must often undergo major rehabilitation or be completely replaced due to the prohibitive cost of repair. Extended survivability design protocol includes the use of high performance engineering methodologies instead of prescriptive code-based design techniques. (See Figure 61.)



Figure 61 - Earthquake Protected Police Building with Seismic Dampers & Daylighting, Vacaville, CA

Workplace Quality Improved - The second benefit of designing for extended survivability is that a much higher quality workplace environment results from the use of natural lighting and ventilation. Daylight provides building users with superior visual acuity, a sense of psychological well being, and dramatic energy savings. Extensive research has shown that naturally lit buildings which control the use of daylight for the benefit of the occupants improve worker satisfaction and productivity as well as reduce absenteeism. This is due to the superior quality of natural light, exposure to the diurnal cycle and the provision of exterior views which are all part of a daylighting strategy. Just as we bring daylight and air inside the building envelope, we understand the importance of bringing people to the outside of buildings. Shelter, good solar orientation, courtyards and covered walkways provide outdoor spaces which can be used year-round.

Energy-efficiency, LEED and Sustainability - The third benefit is that the planned absence of energy to run the building causes the designer to consider the climate of a region in its design, which in turn makes a building inherently more energy-efficient. Designing for the specifics of climate is the most powerful way to reduce energy consumption. By designing with natural systems instead of trying to override them, low-cost or even no-cost energy reduction gains are made. In simple terms, passive solar, thermal mass storage, natural lighting and ventilation and other low-cost sensible techniques are employed to reduce reliance on energy-intensive mechanized solutions.

Developing a strong, simple extended survivability rationale results in elegant building designs that harness natural forces with the latest in technology and, in the process, make buildings more easily certifiable in high-performance building programs such as LEED. The path to LEED, zero net-energy buildings and carbon neutrality becomes easier to follow under the extended survivability framework, helping Tracy meet those goals, as well as creating highly energy-efficient public facilities which are better, more productive work environments.

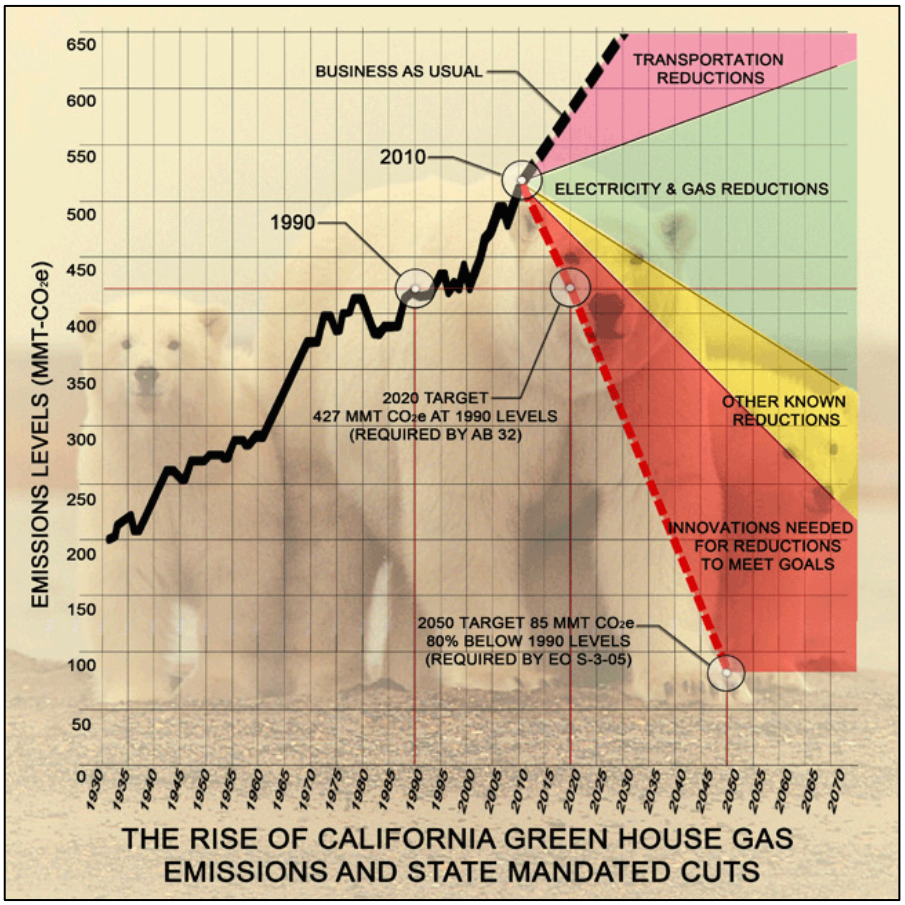


Figure 62 - Green House Gas Mandate

Green House Gas Reduction **-** Extended survivability and energy efficiency measures directly mitigate greenhouse gas (GHG) emissions, facilitating City of Tracy compliance with AB 32 and EO S-3-05. The GHG target from Tracy's Sustainability Action Plan is a 15 percent reduction in per capita emissions from the 2006 baseline of 11.6 metric tons of carbon dioxide equivalent. This target is adopted as a facility design guideline for the public facilities resulting from this CPSMP update.

Green house gases (GHG) trap heat in the atmosphere, causing the earth to warm. The scientific consensus on climate change is that the fossil fuel driven increase in CO2 emissions has caused a rapid increase in global average temperatures over the past one hundred years; this is particularly evident over the last five decades.

In response, California has enacted climate change legislation, most notably AB 32, which establishes climate change emissions reduction targets for the state. AB 32 requires GHG emissions to be reduced to 1990 levels by 2020 and EO S-3-05 would see emissions drop to preindustrial levels by 2050. General Plan update CEQA approvals offer the path to AB 32 compliance for Cities, with the State Attorney General providing ultimate oversight and enforcement.

Local governments have a unique ability to effect GHG mitigation by adopting Climate Action Plans (CAPs). When successfully amended to the General Plan, City and county CAPs provide a roadmap to reduce not only direct operational GHG emissions, but also influence the GHG footprints of citizens, industries, and businesses within their jurisdiction. Through visibility and purchasing power, local governments can set an example for households and businesses in their GHG-reduction practices. Nearly every local, county and state agency in California is acting to mitigate GHG emissions. (See Figure 62 and Figure 62)

Net Zero-Energy Buildings (ZEB) Definition - Net zero-energy buildings (ZEB), including their site, consume zero net energy and emit zero net carbon annually. The result is net zero energy costs, when averaged over a year, for the City.

Simplified ZEB Protocol - Designing for the specifics of climate is the most powerful way to reduce energy consumption and achieve zero-net energy buildings. By designing with natural systems instead of trying to override them, low-cost or even no-cost energy reduction gains are made. In simple terms, passive solar, thermal mass storage, natural lighting and ventilation and other low-cost sensible techniques are first employed. Once the basic building envelope has been optimized for the particular Central Valley climate zone for Tracy, efficient mechanical and electrical systems are used that support all facility uses such as lobbies, office, and training space. Total yearly energy demand is then calculated and converted to photovoltaic capacity in kW to offset this demand. (See Figure 63, p.61.)

ZEB and Life Cycle Cost - Choices at every stage - from standards and specifications to design and construction - are made based on efficacy of function, energy-efficiency, durability and cost. Cost is not only first cost but life cycle cost including maintenance, operations, recycling and replacement cost. Since total envelope and process loads are reduced to minimum, there is a corresponding reduction in the offset cost to achieve zero-net energy since less on-site renewable energy (e.g. photovoltaics) is required. This means less cost to installed KW capacity.



Figure 63 - Net Zero-Energy Transportation Center, Vacaville, Ca.

Facility Design Recommendations – A menu of key extended survivability and sustainability features, where appropriate, recommended for the buildings included in the CPSMP update, includes:

- **Photovoltaic power for critical needs** – Consider small-scale rooftop photovoltaics array to power critical emergency circuits, IT, radio, etc. Could be rooftop mounted or site racks.
- **Isolate and protect critical utilities** – Evaluate each building system for criticality including but not limited to radio, telecommunications, power, sanitary sewer, potable water, etc. Identify feasible measures which can be cost-effectively taken to harden against flooding, earthquake or other threat to be determined.
- **Design structures to "immediate-occupancy" level** – The new Police Department Service Center and Fire Stations will be designed to the highest structural level, that of immediate occupancy, which means that the structural frame and all building services will be available after a seismic event.
- **Use seismic dampening to improve survivability at same cost** – Consider use of viscous fluid dampers (VFD) or other structural dampening techniques to increase the resilience of the building frame under earthquake loads, improving survivability during and serviceability after an earthquake.
- **Use energy-efficient design to extend survivability and reduce utility bills –** A variety of measures such as east-west building orientation, use of thermal mass, high-efficiency mechanical strategies,

etc. will reduce energy consumption and extend the duration in which emergency power can be provided.

- **Use natural light and ventilation to improve workplace quality and extend survivability –** Use of natural lighting and ventilation provides for a high-quality workplace day-in and day-out, but also means that the building can be passively operated and inhabited when emergency power has been exhausted.
- **Make full use of daylighting** – Make full use of windows for daylight, use skylights at roof so that most of building can be naturally lit for use in emergency. Daylighting means that primary work spaces are provided with natural light from skylights and/ or high windows with light shelves, with the electric lighting system controlled by light sensors which automatically turn them off when there is sufficient natural light. 30% - 50% of the energy used by most buildings in the U.S. goes into lighting, a large share of that can be saved by a daylighting system.
- **Add window shading** – Use overhangs, solar screens and other devices to permit view out, yet reduce summer heat load, reduce air conditioning demand and extend duration of emergency generator power due to reduced rate of fuel consumption. Saves on utility bill, too.
- **Provide super-insulation** – Maximum insulation values are utilized. Wall insulation of up to R-40 is encouraged, twice the usual thermal resistance of a wall. Roof insulation values between R-30 and R-40 are desired. Consider alternative building technologies like using California's Central Valley's own straw bale as insulation for buildings which provides up to R-40 walls.
- **Increase thermal mass** – Heat storage capacity is maximized through the use of high specific heat and heat capacity materials such as concrete, masonry and even interior wallboard assemblies. Novel use of materials to increase thermal mass should be considered such as straw bale covered concrete exterior walls, concrete floor and concrete roof to name a few. The large heat storage capacity of these surfaces will moderate temperature swings in the building and reduce the demand for heating and cooling. The resulting "thermal flywheel" effect can be amplified through use of nighttime ventilation strategies to help "carry" the building through hot summer days with less mechanical cooling required.
- **Nighttime ventilation** – During the summer, when the night air is cool, buildings can be ventilated with outside air to cool the heavy mass of interior and exterior walls. A cool slab and heavy mass walls will help keep the building cool for much of the day. Thus, demand for mechanical refrigeration cooling can be greatly reduced in Tracy's hot climate.
- **Reflective cool roof** – Where re-roofing is required, use "cool roof" products. Roofs should be cool roof designs which reduce roof surface temperatures, reduce heat transmission into the building and reduce "heat island" effect.
- **Use natural ventilation** – Natural ventilation or mixed-ventilation delivery of outside air could be provided. Naturally ventilated air will flow from low vents to high vents.
- **High-efficiency mechanical systems** – Use high-efficiency mechanical systems which will reduce utility bills at same time as extending duration of emergency generator power due to reduced rate

of fuel consumption. Consider water-based systems in order to avoid the inherently less-efficient heat transfer provided by air-based systems.

- **Raise sites for minimum 100-year flood protection** – Public facility sites should be raised minimum 1' above base flood elevation (BFE) to protect against projected 100-year flood events. Consider berming to further protect against flooding.
- **Design two-story buildings** – This provides a second level retreat in case of severe flooding, helping ensure delivery of public services during emergencies. Also saves land. The resulting compact building design allows multiple departments to share one elevator, resulting in a resource-efficient and energy-efficient design.
- **Place critical functions on second floor** – In order to provide an area of retreat in case of flooding which exceeds the 100-year projection, place critical functions on second floor where flood water will not reach. Critical functions include the Emergency Operations Center (EOC), Dispatch/ Communications, other.
- **Elevate emergency generator and fuel supply** – Raise emergency power generator and its 72-hour fuel supply to be able to withstand any flooding risk, also includes transfer switch and emergency power panels. Space below to be used for storage and hardened against flooding.

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APPENDIX A – PUBLIC SAFETY STAFFING PROJECTIONS

Projected staffing for public safety agencies are shown in the table below. It should be emphasized that staffing projections are an intermediate step to determine needed facilities, and are not a basis for budgeting future positions.

Police Department Staffing Projections

	Current	2040	Comment
Police Department			
Office of the Chief			
Chief of Police	1.0	1.0	Sworn
Deputy Chief	0.0	1.0	Sworn
Professional Standards Officer	1.0	1.6	Sworn
Executive Assistant	1.0	1.0	Civilian
Bureau of Field Operations			
Captain	1.0	1.0	Sworn
Administrative Assistant	1.0	1.4	Civilian
Patrol Division			
Lieutenant	4.0	4.0	Sworn
Day Shift			
Sergeant	2.0	4.2	Sworn
Corporal	2.0	4.2	Sworn
Officer	12.0	19.1	Sworn
Community Service Officer	2.0	2.8	Civilian
Swing Shift			
Sergeant	2.0	4.2	Sworn
Corporal	2.0	4.1	Sworn
Officer	12.0	19.0	Sworn
Community Service Officer	2.0	2.8	Civilian
Night Shift			
Sergeant	2.0	3.6	Sworn
Corporal	2.0	3.6	Sworn
Officer	12.0	19.0	Sworn
Community Services Division			
Lieutenant	1.0	1.0	Sworn
Neighborhood Resource Unit			
Sergeant	1.0	2.0	Sworn
Corporal	1.0	2.0	Sworn
Officer	1.0	1.6	Sworn
School Resource Officer	3.0	4.7	Sworn
DARE Officer	1.0	1.6	Sworn
Crime Prevention Specialist	2.0	2.8	Civilian
Volunteers in Police Services	25.0	35.6	Unpaid Civilian
Traffic Safety Unit			
Sergeant	1.0	1.0	Sworn
Corporal	1.0	1.0	Sworn
Officer	3.0	4.7	Sworn
Traffic Interns	2.0	2.8	Unpaid Civilian

(table continued on following page)

Police Department Staffing (continued)			
Code Enforcement			
Community Preservation Manager	1.0	1.0	Civilian
Code Compliance Analyst	1.0	1.4	Civilian
Administrative Assistant II	1.0	1.4	Civilian
Building Inspector II	1.0	1.4	Civilian
Code Enforcement Officer	3.0	4.3	Civilian
Bureau of Support Serivces			
Police Support Operations Manager	1.0	1.0	Civilian
Police Support Services Technician	1.0	1.4	Civilian
Animal Services			
Supervisor	1.0	1.0	Civilian
Administrative Assistant II	2.0	2.8	Civilian
Animal Services Officer	4.0	5.7	Civilian
Animal Services Aide	2.0	2.8	Civilian
Records			
Records Unit Supervisor	1.0	1.0	Civilian
Police Records Assistants	7.0	10.1	Civilian
Dispatch			
Communications Unit Supervisor	1.0	1.0	Civilian
Lead Public Safety Dispatchers	4.0	4.0	Civilian
Public Safety Dispatchers	12.0	17.3	Civilian
Bureau of Investigations			
Captain	1.0	1.0	Sworn
Lieutenant	1.0	1.0	Sworn
Administrative Assistant II	1.0	1.4	Civilian
Crime Analyst	1.0	1.4	Civilian
General Investigations Unit			
Sergeant	1.0	2.7	Sworn
Corporal	1.0	2.7	Sworn
Detective	9.0	14.2	Sworn
Special Investigations			
Sergeant	1.0	1.0	Sworn
Corporal	1.0	1.0	Sworn
Detective	3.0	4.7	Sworn
Special Enforcement			
Sergeant	2.0	2.0	Sworn
Corporal	1.0	1.6	Sworn
Officer	6.0	9.5	Sworn
Crime Scene Unit			
Crime Scene Supervisor	1.0	1.0	Civilian
Crime Scene Technician	4.0	5.7	Civilian
Subtotal Sworn Officers	96.0	152.2	
Subtotal Civilians	58.0	77.9	
Police Department Budgeted Total	**154.0**	**230.1**	
Interns and Volunteers	27.0	38.4	
Police Department Occupant Total	**181.0**	**268.5**	

Fire Department Staffing Projections

Fire Department	Current	Buildout	
Fire Chief	1.0	1.0	Certified
Division Chief	2.0	2.0	Certified
EMS Manager	1.0	1.0	Civilian
Executive Assistant	1.0	1.0	Civilian
Fire Prevention Division			
Fire Marshal	1.0	1.0	Certified
Administrative Assistant II	1.0	2.0	Civilian
Fire Inspectors	3.0	4.5	Certified
Hazardous Materials Inspector	0.0	1.0	Civilian
Plans Check Examiner	1.0	2.0	Civilian
Building Permit Technician	1.0	2.0	Civilian
Fire Operations Division			
Battalion Chief	3.0	3.0	Certified
Administrative Assistant II	1.0	2.0	Civilian
Fire Captain	22.0	28.0	Certified
Fire Engineer	21.0	27.0	Certified
Firefighter	24.0	30.0	Certified
Fire Training Division			
Fire Captain	0.00	1.0	Certified
Administrative Assistant II	0.00	1.0	Civilian
Subtotal Certified Firefighters	77.0	97.50	
Subtotal Civilian	6.0	12.00	
Fire Department Budgeted Total	**83.00**	**109.50**	
Budgeted Separately: Fire Reserve	25.0	37.5	Certified
Fire Department Occupant Total	**108.00**	**147.00**	

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APPENDIX B – PUBLIC SAFETY SPACE PROJECTIONS

Police Department Space Projections

Function/Department	Unit S.F.	Current No. Units	Current Net Area	Horizon 2040 No. Units	Horizon 2040 Net Area	Comments
Police Department						
Administration						
Chief of Police	300	1	300	1	300	
Deputy Chief	200	0	0	1	200	
Professional Standards Officer	120	1	120	2	240	
Executive Assistant	120	1	120	1	120	
Reception/Waiting	225	1	225	1	225	
Conference Room	230	1	230	1	230	
File Room	85	1	85	1	85	
Coffee Counter	20	1	20	1	20	
Supply	30	1	30	1	30	
Subtotal, Net Area			1,130		1,450	
Departmental Area (add 30%)			1,470		1,890	
Bureau of Field Operations						
Captain	160	1	160	1	160	
Administrative Assistant	64	1	64	1	64	1 @ Substation
Patrol Division						
Watch Commander's Office	140	1	140	0	0	1 @ Substation
Sergeants	150	1	150	0	0	1 @ Substation
Corporals	150	1	150	0	0	1 @ Substation
Community Service Officers	150	1	150	0	0	1 @ Substation
Patrol Ready Room	240	1	240	0	0	1 @ Substation
Conference Room	100	1	100	0	0	1 @ Substation
Report Area	24	4	96	0	0	6 @ Substation
Briefing Room	300	1	300	1	300	
Armory	100	1	100	1	100	
SWAT Armory	100	1	100	1	100	
Patrol War Bag Storage	—	1	20	1	20	Shelves with access zone
Files	—	0	160	1	160	See also Substation
Equipment Room	—	0	130	1	130	See also Substation
Mail Boxes	—	1	80	1	80	See also Substation
Subtotal, Net Area			2,140		1,114	
Departmental Area (add 30%)			2,780		1,331	58% Substation reduction
Community Services Division						
Lieutenant Office	160	1	160	1	160	
Neighborhood Resource Unit						
Sergeant Office	120	1	120	2	240	
Corporal	64	1	64	2	128	
Officer	64	1	64	2	128	
School Resource Officer	48	3	144	5	240	
DARE Officer	64	1	64	2	128	
Crime Prevention Specialist	64	2	128	3	192	
Convenience Copier/Printer	20	1	20	1	20	
Coffee Counter	20	1	20	1	20	
Subtotal, Net Area			784		1,256	
Departmental Area (add 30%)			1,020		1,630	

Function/Department	Unit S.F.	Current No. Units	Current Net Area	Horizon 2040 No. Units	Horizon 2040 Net Area	Comments
Police Department						
Bureau of Field Operations, cont…						
Traffic Safety Unit						
Sergeant Office	120	1	120	1	120	
Corporal	64	1	64	1	64	
Officer	64	3	192	3	192	2 @ Substation
Traffic Interns	48	2	96	2	96	1 @ Substation
Equipment Room	80	1	80	1	80	
Convenience Copier/Printer	20	0	0	1	20	
Coffee Counter	20	1	20	1	20	
Subtotal, Net Area			572		592	
Departmental Area (add 30%)			740		764	24% Substation reduction
Code Enforcement						
Community Preservation Mgr	120	1	120	1	120	
Code Compliance Analyst	64	1	64	2	128	
Administrative Assistant II	64	1	64	2	128	
Building Inspector II	64	1	64	2	128	
Code Enforcement Officer	64	3	192	5	320	
Drawing Files	15	1	15	1	15	
Layout Table	20	1	20	1	20	
Convenience Copier/Printer	20	1	20	1	20	
Coffee Counter	20	1	20	1	20	
Subtotal, Net Area			579		899	
Departmental Area (add 30%)			750		1,170	
Total Bureau of Field Operations Net			5,205		5,311	
Departmental			6,760		6,785	

Function/Department	Unit S.F.	Current No. Units	Current Net Area	Horizon 2040 No. Units	Horizon 2040 Net Area	Comments
Police Department						
Bureau of Support Services						
Police Support Operations Manager	190	1	190	1	190	
Police Support Services Technician	64	1	64	2	128	
Subtotal, Net Area			254		318	
Departmental Area (add 30%)			330		410	
Records						
Records Unit Supervisor	120	1	120	1	120	Shared between shifts
Police Record Assistants	64	7	448	9	576	2 @ Substation
Service Counter	50	1	50	1	50	
Fingerprint Livescan	25	1	25	1	25	
File Area	—	1	170	1	170	High density storage
Work Room	220	1	220	1	220	
Document Scanning	100	1	100	1	100	Also @ Substation
Storage	100	1	100	1	100	
Coffee Counter	20	1	20	1	20	
Subtotal, Net Area			1,253		1,381	
Departmental Area (add 30%)			1,630		1,737	21% Substation reduction

Function/Department	Unit S.F.	Current No. Units	Current Net Area	Horizon 2040 No. Units	Horizon 2040 Net Area	Comments
Police Department						
Bureau of Support Services, cont…						
Dispatch						
Communications Supervisor	160	1	160	1	160	spare console in office
Communications Operator	115	6	690	10	1,150	
Lockers	—	1	42	1	63	
Storage	100	1	100	1	100	
Break Room	100	1	100	1	100	
Toilet	50	1	50	1	50	
Equipment Room	80	1	80	1	80	
Subtotal, Net Area			1,222		1,703	
Departmental Area (add 30%)			1,590		2,210	
Shared Support						
Conference Room	150	1	150	1	150	
Mail Room	100	1	100	1	100	
Mail Boxes	20	1	20	1	20	Alcove outside mail room
Shipping & Receiving	120	1	120	1	120	
Subtotal, Net Area			390		390	
Departmental Area (add 30%)			510		510	
Total Bureau of Support Services Net			3,119		3,792	
Departmental			4,060		4,867	

Function/Department	Unit S.F.	Current No. Units	Current Net Area	Horizon 2040 No. Units	Horizon 2040 Net Area	Comments
Police Department						
Bureau of Investigations						
Captain	160	1	160	1	160	
Lieutenant	160	1	160	1	160	
Administrative Assistant II	64	1	64	2	128	
Crime Analyst	64	1	64	2	128	
General Investigations Unit						
Sergeant	120	1	120	3	360	
Corporal	64	1	64	3	192	
Detective	24	9	216	15	360	
Special Investigations						
Sergeant	120	1	120	1	120	
Corporal	64	1	64	1	64	
Detective	24	3	72	5	120	
Special Enforcement						
Sergeant	120	2	240	2	240	
Officer	24	6	144	10	240	
Shared Spaces						
Equipment Room	50	1	50	1	50	
Reception Counter	50	1	50	1	50	
Interview Room	50	3	150	4	200	
Conference Room	250	1	250	1	250	
Copy/Supply	80	1	80	1	80	with plotter
Subtotal, Net Area			2,068		2,902	
Departmental Area (add 30%)			2,690		3,770	

Function/Department	Unit S.F.	Current No. Units	Current Net Area	Horizon 2040 No. Units	Horizon 2040 Net Area	Comments
Police Department						
Bureau of Investigations, cont…						
Crime Scene Unit						
Crime Scene Supervisor	120	1	120	1	120	
Crime Scene Technician	64	4	256	6	384	
Property Receiving & Staging						
Work Area	100	1	100	1	100	
Lockers	60	1	60	1	60	
Receiving & Processing Area	260	1	260	1	260	
Evidence Viewing	100	1	100	1	100	
Laboratory	90	4	360	6	540	
Computer Forensics	320	1	320	1	320	
Chemical Storage	100	1	100	1	100	
Equipment Storage	100	1	100	1	100	
Waste Area	80	1	80	1	80	
Property Room	—	1	3,600	1	5,200	All forms of prop storage
Subtotal, Net Area			5,456		7,364	
Departmental Area (add 30%)			7,090		9,261	3% Substation reduction
Temporary Holding Facility						
Vehicular Sallyport	430	1	430	1	430	
Pedestrian Sallyport	50	1	50	1	50	
Prebooking	100	1	100	1	100	
Identification	100	1	100	1	100	
Shower	50	1	50	1	50	
Property	100	1	100	1	100	
Holding Cell	60	5	300	8	480	
ADA Holding Cell	60	1	60	1	60	
Interview Room	80	1	80	1	80	
Subtotal, Net Area			1,270		1,450	
Departmental Area (add 30%)			1,650		1,890	
Total Bureau of Investigations Net			8,794		11,716	
Departmental			11,430		14,921	

Appendix B – Public Safety Space Projections, continued…

Function/Department	Unit S.F.	Current No. Units	Current Net Area	Horizon 2040 No. Units	Horizon 2040 Net Area	Comments
Police Department						
Ancillary Areas						
Lobby	1,000	1	1,000	1	542	458 sq ft Lobby @ Substation
Probation Office	100	1	100	1	100	
Community/Conference Room	250	1	250	0	0	200 sq ft Conf @ Substation
Live Scan	70	1	70	1	70	
Interview Room	70	1	70	1	70	
Break Room	255	1	255	1	255	
Staff Lactation Room	70	1	70	1	70	
Fitness Room	860	1	860	1	535	325 sq ft Gym @ Substation
Men's Lockers	22	60	1,290	119	2,559	33 Lockers @ Substation
Women's Lockers	22	36	774	42	903	16 Lockers @ Substation
DOC	900	1	900	1	900	Former EOC
DOC Conference	300	1	300	1	300	
DOC Table & Chair Storage	145	1	145	1	145	
Computer Room	400	1	400	1	245	155 sq ft IT @ Substation
Subtotal, Net Area			6,484		6,694	
Departmental Area (add 30%)			8,430		7,855	32% Substation reduction
Emergency Operations Center						
EOC	1,000	0	0	1	1,000	
Conference	240	0	0	2	480	
Table & Chair Storage	150	0	0	1	150	
Intermediate Distribution Frame	80	0	0	1	80	
Subtotal, Net Area			0		1,710	
Departmental Area (add 30%)			0		2,220	
Summary for Police Department Total Needs						
Net Area			23,602		29,223	
Departmental Area			30,680		36,648	
Gross Area (add 30%)			40,800		47,400	

Function/Department	Unit S.F.	Current No. Units	Current Net Area	Horizon 2040 No. Units	Horizon 2040 Net Area	Comments
Police Substation						
Public Spaces						
Lobby	310	0	0	1	310	
Public Toilets	74	0	0	2	148	
Community Meeting/ Briefing	823	0	0	1	823	
Community Room Storage	50	0	0	1	50	
Conference Room	200	0	0	1	200	
Secure Spaces						
Reception	208	0	0	1	208	
Kitchen/ Break Room	365	0	0	1	365	
Video Monitor Room	236	0	0	1	236	
Records Files	130	0	0	1	130	
Duplication/ Paper Processing Rm	125	0	0	1	125	
Central Supply	79	0	0	1	79	
Open Office Workstations	75	0	0	12	900	
District Commander's Office	175	0	0	1	175	
Sergeants Office Workstations	75	0	0	6	450	
Showers, Lockers, and Toilets	26	0	0	49	1,274	49+ Lockers
Gym	325	0	0	1	325	
Janitor Closet	39	0	0	1	39	
Evidence Prep	164	0	0	1	164	
Evidence Receiving	145	0	0	1	145	
Electrical Closet	127	0	0	1	127	
Armory	62	0	0	1	62	
Server Room	155	0	0	1	155	
Staff Entry	112	0	0	1	112	
Subtotal, Net Area			0		6,602	
Gross Area (+33%)			0		8,800	

Function/Department	Unit S.F.	Current No. Units	Current Net Area	Horizon 2040 No. Units	Horizon 2040 Net Area	Comments
Animal Services (net subtotals)						
Public Areas			733		1,680	
Animal Areas			3,572		4,817	
Staff Areas			1,300		1,877	
Shelter Veterinary			0		644	
Subtotal, Net Area			5,605		9,018	
Departmental Area (add 30%)			7,287		11,723	
Gross Area (add 33%)			9,692	-	15,592	-

Function/Department	Unit S.F.	Current No. Units	Current Net Area	Horizon 2040 No. Units	Horizon 2040 Net Area	Comments
Police Training						
Administrative						
Training Office	120	1	120	1	120	
Clerk	64	0	0	1	64	
Visiting Instructor	64	0	0	1	64	
Reception/Waiting	100	0	0	1	100	
Copy/Workroom	200	1	143	1	200	
Supplies Storage	100	1	72	1	100	
Instructional Areas						
Classroom	1,085	1	777	1	1,085	
Arrest & Control Activity Area	3,100	1	2,220	1	3,100	
Tactical Firearms Simulator	970	1	695	1	970	
Furniture Storage	150	1	107	1	150	
Supplies Storage	150	1	107	1	150	
Break Area	450	1	322	1	450	
Weight Room	900	1	645	1	900	
Men's Shower	818	1	586	1	818	
Women's Shower	502	1	360	1	502	
Subtotal, Net Area			6,170		8,773	
Departmental Area (add 30%)			8,021		11,400	
Training Total Gross Area (+33%)			10,694		15,200	

Function/Department		Current Area	Horizon 2040 Area	Comments
Police Building Totals				
Police Total Net Area		35,377	53,616	
Police Total Departmental Area		45,988	59,771	Substation is Gross Only
Police Total Gross Area		61,186	86,992	

Function/Department	Unit S.F.	Current No. Units	Current Net Area	Horizon Year 2040 No. Units	Horizon Year 2040 Net Area	Comments
Police Training						
Site Elements						
Firearms Training Range	1,378	1	1,378	1	1,378	
Storage Building	400	0	0	1	400	Pre-Engineered Bldg.
Site Vehicular Circulation	—	—	345	—	445	
Subtotal Training Site Elements			1,723		2,223	

Function/Department	Unit S.F.	Current No. Units	Horizon Year 2040 No. Units	Comments
Police Department Vehicles				
Administration				
Misc. Equipment UD		1	1	
Sedan		2	4	
SUV		3	5	
Off-Road EV		2	3	
Patrol Force				
Sedan		5	8	
SUV		37	62	
Pickup		3	5	
Community Services Division				
Sedan		1	2	
SUV		2	3	
Pickup		3	5	
Traffic				
Pickup		1	1	
Motorcycles		9	12	
Electric Motorcycle		2	3	
Car Trailer		3	4	
Speed Trailer		2	3	
Parking Enforcement				
Pickup		2	3	
Animal Services				
Pickup		2	3	
General Investigations				
Sedan		5	9	
SUV		4	7	
Undercover		1	2	
Special Enforcement				
SUV		2	3	
Property/Evidence				
Pickup		3	4	
SWAT				
Armored Personnel Carrier		1	1	
Van		1	1	
Generator		1	1	
Mobile Command Post				
KVM Switch		1	1	
Generator		1	1	
Police Vehicles Total		100	157	

Fire Department Space Projections

Function/Department	Unit S.F.	Current No. Units	Current Net Area	Buildout No. Units	Buildout Net Area	Comments
Fire Department						
Administration						
Fire Chief	320	1	320	1	320	
Division Chief	220	2	440	2	440	
EMS Manager	190	1	190	1	190	
Executive Assistant	100	1	100	1	100	
Fire Prevention						
Fire Marshal	190	1	190	1	190	
Administrative Assistant II	64	1	64	2	128	
Fire Inspectors	64	3	192	5	320	
Hazardous Materials Inspector	64	0	0	1	64	
Plans Check Examiner	64	1	64	2	128	
Layout	32	1	32	1	32	
Fire Operations (Administrative)						
Battalion Chief	190	3	570	3	570	
Administrative Assistant II	64	1	64	2	128	
Fire Training Division						
Fire Captain	120	0	0	1	120	
Administrative Assistant II	64	0	0	1	64	
Shared Spaces						
Reception	100	1	100	1	100	
Conference Room	530	1	530	1	530	
Training Room	740	1	740	1	740	Becomes DOC in future
Copy Room	80	1	80	1	80	
Break Room	100	1	100	1	100	
Storage	20	1	20	1	20	
Equipment Storage	400	1	400	1	400	
Subtotal, Net Area			4,196		4,764	
Departmental Area (add 30%)			5,450		6,190	
Fire Admin Total Gross Area			7,270		8,250	
Note: at 9,646 gsf, existing Station "A" exceeds Horizon Year 2040 demand by 1,396 gsf.						
Operations						
Existing Fire Stations	—	5	29,372	4	23,820	without Stations A or 97
Fire Stations 94,95,and 99	7,070	0	0	3	21,210	
Fire Station 97	7,750	0		1	7,750	
Subtotal, Operations Gross Area			29,372		52,780	

Function/Department	Unit S.F.	Current No. Units	Current Net Area	Buildout No. Units	Buildout Net Area	Comments
Fire Training						
Administrative						
Training Office	120	0	0	1	120	
Clerk	64	0	0	1	64	
Visiting Instructor	64	0	0	1	64	
Reception/Waiting	100	0	0	1	100	
Copy/Workroom	200	0	0	1	200	
Supplies Storage	100	0	0	1	100	
Instructional Areas						
Classroom	1,085	0	0	1	1,085	
Furniture Storage	150	0	0	1	150	
Supplies Storage	150	0	0	1	150	
Break Area	450	0	0	1	450	
Weight Room	900	0	0	1	900	
Men's Shower	818	0	0	1	818	
Women's Shower	502	0	0	1	502	
Subtotal, Net Area			0		4,703	
Departmental Area (add 30%)			0		6,114	
Training Total Gross Area			0		8,130	
Site Elements						
Drill /Burn Tower	9,000	0	0	1	9,000	
Drill/Burn Tower Apron	—	0	0	1	49,700	
Misc Training Apron	—	0	0	1	14,000	
Storage Building	400	0	0	1	400	Pre-Engineered Bldg.
Site Vehicular Circulation	—	—	0	—	18,275	
Subtotal Training Site Elements			0		91,375	

Function/Department	Unit S.F.	Current No. Units	Current Net Area	Buildout No. Units	Buildout Net Area	Comments
Fire Department Vehicles						
Administration (SUVs)			9		9	
Fire Prevention (Light Pickups)			3		5	
Fire Training Division (SUV)			0		1	
Fire Operations						
SUV			2			
Mid Size Pickup			4		4	
Heavy Duty Pickup			1		1	
Engine			10		14	Ownership of new engines proportionate to each new station's service to city.
Ladder			1		2	
Water Tender			1		1	Additonal tender used primarily for unincorporated areas.
Hazmat Trailer			1		1	
Fire Vehicles Total			32		38	

APPENDIX C – PUBLIC SAFETY SPACE PROGRAM DISTRIBUTION TABLE

	Building	Shared	Fire			Police														Subtotal
		EOC	Admin	Training	Stations	Admin	Field Operations	Community Services	Traffic	Code Enforcement	Support Services	Animal Services	Records	Dispatch	Shared Support	Investigations	Crime Scene	Holding	Ancillary Areas	Training	w/ 33% Gross Circulation
A	Fire Headquarters	Station "A"																			
91	Fire Station 91		9,646 sf		7,401 sf																9,646 sf
92	Fire Station 92				5,136 sf																7,400 sf
93	Fire Station 93				6,147 sf																5,136 sf
94	Fire Station 94 (Reloc. Cordes Ranch Area) incl. Ladder Bay				7,750 sf																6,147 sf
95	Fire Station 95 (Tracy Hills Area)				7,070 sf																7,750 sf
96	Fire Station 96				5,136 sf																7,070 sf
97	Fire Station 97 (Relocation - Valpico) incl. Ladder Bay				7,750 sf																5,136 sf
99	Fire Station 99 (Ellis Area)				7,070 sf																7,750 sf
T	Fire Training Facility - Phases 2 & 3			9,868 sf																	7,070 sf
			9,600 sf	9,900 sf	53,500 sf																9,868 sf
P	PD Remodel & Addition on Expanded Civic Center Site	2,220 sf				1,890 sf	1,331 sf	1,630 sf	764 sf	1,170 sf	410 sf		1,737 sf	1,220 sf	510 sf	3,770 sf	9,261 sf	1,890 sf	7,855 sf		73,000 sf
S	South Tracy Police Substation						1,839 sf		236 sf				463 sf				309 sf		3,765 sf		47,425 sf
T	Police Department Training Facility																			11,400 sf	8,794 sf
D	Police Department Animal Shelter - Phase 2											15,592 sf									15,162 sf
	SUBTOTAL POLICE DEPARTMENT	2,220 sf				1,890 sf	3,200 sf	1,630 sf	1,000 sf	1,200 sf	400 sf	15,600 sf	2,200 sf	1,200 sf	500 sf	3,800 sf	9,600 sf	1,900 sf	11,600 sf	11,400 sf	15,592 sf
RCT	Public Safety Radio Communications Facilities	400 sf																			87,000 sf
	SUBTOTAL COMMUNICATIONS FACILITIES	400 sf																			400 sf
	SUBTOTAL PUBLIC FACILITIES	2,600 sf	9,600 sf	9,900 sf	53,500 sf	1,900 sf	3,200 sf	1,600 sf	1,000 sf	1,200 sf	400 sf	15,600 sf	2,200 sf	1,200 sf	500 sf	3,800 sf	9,600 sf	1,900 sf	11,600 sf	11,400 sf	160,400 sf

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APPENDIX D – PUBLIC SAFETY FACILITY COST ESTIMATE

KEY	PLACE NAME	Program Area			Site Development Cost			Remodel Cost			New Cost			2020 Direct Construction Bid Day Cost
		Existing	Remodel	New	2040	Site Area	Site Unit Cost	Subtotal	Remodel Area	Unit Cost	Subtotal	New Area	Unit Cost	Subtotal	
A	Fire Headquarters | Station "A"	9,646 sf			9,646 sf	0.6 ac									
91	Fire Station 91	7,401 sf			7,401 sf										
92	Fire Station 92	5,136 sf			5,136 sf										
93	Fire Station 93	6,147 sf			6,147 sf										
94	~~Fire Station 94~~ (To Be Relocated. Land owned by SCFA.)	5,552 sf													
94	Fire Station 94 (Reloc. Cordes Ranch Area) incl. Ladder Bay			7,750 sf	7,750 sf	2.0 ac	$800,000	$1,600,000				7,750 sf	$500	$3,875,000	$5,475,000
95	Fire Station 95 (Tracy Hills Area)			7,070 sf	7,070 sf	0.9 ac						7,070 sf			$4,887,376
96	Fire Station 96	5,136 sf			5,136 sf										
97	~~Fire Station 97~~ (To Be Relocated. Sell property.)	3,009 sf													
97	Fire Station 97 (Relocation - Valpico) incl. Ladder Bay			7,750 sf	7,750 sf	2.0 ac	$800,000	$1,600,000				7,750 sf	$500	$3,875,000	$5,475,000
99	Fire Station 99 (Ellis Area)			7,070 sf	7,070 sf	0.9 ac	$800,000	$745,638				7,070 sf	$500	$3,535,000	$4,280,638
T	Fire Training Facility - Phases 2 & 3			9,868 sf	9,868 sf	5.1 ac	$275,000	$1,410,750				9,868 sf	$400	$3,947,200	$5,357,950
	SUBTOTAL FIRE DEPARTMENT	**33,500 sf**	**0 sf**	**39,500 sf**	**73,000 sf**	**11.6 ac**	**$462,000**	**$5,356,400**	**0 sf**	**$0**	**$0**	**39,500 sf**	**$390**	**$15,232,200**	**$25,476,000**
P	PD Remodel & Addition on Expanded Civic Center Site	27,616 sf	27,616 sf	19,809 sf	47,425 sf	4.7 ac	$800,000	$3,760,000	27,616 sf	$300	$8,284,800	19,809 sf	$650	$12,875,850	$24,920,650
I	~~PD Annex~~ (1979 Police Station to be Demolished)	9,800 sf													
A	~~PD North Annex~~ (Leased - to be let go)	16,759 sf													
S	South Tracy Police Substation			8,794 sf	8,794 sf	2.2 ac	$800,000	$1,760,000				8,794 sf	$650	$5,716,100	$7,476,100
T	Police Department Training Facility	2,296 sf	918 sf	12,866 sf	15,162 sf	2.0 ac	$250,000	$500,000	918 sf	$150	$137,760	12,866 sf	$250	$3,216,500	$3,854,260
D	Police Department Animal Shelter - Phase 2	9,692 sf		5,900 sf	15,592 sf	2.2 ac	$200,000	$438,000				5,900 sf	$600	$3,540,000	$3,978,000
	SUBTOTAL POLICE DEPARTMENT	**39,600 sf**	**28,500 sf**	**47,400 sf**	**87,000 sf**	**11.1 ac**	**$582,300**	**$6,458,000**	**28,500 sf**	**$300**	**$8,422,600**	**47,400 sf**	**$530**	**$25,348,500**	**$40,229,000**
RCT	Public Safety Radio Communications Facilities	0 sf	0 sf	400 sf	400 sf	0.5 ac	$360,000	$180,000				400 sf	$1,250	$500,000	$680,000
	SUBTOTAL COMMUNICATIONS FACILITIES	**0 sf**	**0 sf**	**400 sf**	**400 sf**	**0.5 ac**	**$360,000**	**$180,000**				**400 sf**	**$1,250**	**$500,000**	**$680,000**
	SUBTOTAL PUBLIC SAFETY FACILITIES	**73,100 sf**	**28,500 sf**	**87,300 sf**	**160,400 sf**	**23.2 ac**	**$517,355**	**$11,994,400**	**28,500 sf**	**$296**	**$8,422,600**	**87,300 sf**	**$471**	**$41,080,700**	**$66,385,000**

(continued)

KEY	PLACE NAME	2020 Direct Construction Bid Day Cost	Annual Construction Input Inflation 2021 & 2022* (Construction Financial Management Association)	2023 Direct Construction Bid Day Cost	2023 Bid Day Unit Cost per SF	35% Indirect & Contingency: 10% Design & Planning; 10% CM; 15% General Contingency	Subtotal Direct + Indirect Cost	FF&E & Vehicles (f)	Land Acquisition (e)	2023 Total Project Cost	Other Funding Sources	Remaining Cost
A	Fire Headquarters | Station "A"											
91	Fire Station 91											
92	Fire Station 92											
93	Fire Station 93											
94	~~Fire Station 94~~ (To Be Relocated. Property ownd by SCFA.)											
94	Fire Station 94 (Reloc. Cordes Ranch Area) incl. Ladder Bay	$5,475,000	26.8%	$6,942,300	$900	$2,429,805	$9,372,000	$2,600,000	$500,000	$12,472,000	($1,000,000)	$11,472,000
95	Fire Station 95 (Tracy Hills Area)	$4,887,376	26.8%	$6,197,192	$880	$2,169,017	$8,366,000	$874,518	$192,837	$9,433,000	($1,511,450)	$7,921,550
96	Fire Station 96										($451,350)	($451,350)
97	~~Fire Station 97~~ (To Be Relocated. Sell property.)											
97	Fire Station 97 (Relocation - Valpico) incl. Ladder Bay	$5,475,000	26.8%	$6,942,300	$900	$2,429,805	$9,372,000	$1,000,000	$500,000	$10,872,000	($4,470,000)	$6,402,000
99	Fire Station 99 (Ellis Area)	$4,280,638	26.8%	$5,427,849	$770	$1,899,747	$7,328,000	$1,000,000	$233,012	$8,561,000	($825,332)	$7,735,668
T	Fire Training Facility - Phases 2 & 3	$5,357,950	26.8%	$6,793,881	$690	$2,377,858	$9,172,000	$500,000		$9,672,000	($2,600,000)	$7,072,000
	SUBTOTAL FIRE DEPARTMENT	**$25,476,000**	26.8%	**$32,303,500**	**$820**	**$11,306,200**	**$43,610,000**	**$5,974,500**	**$1,425,800**	**$50,558,700**	**($10,406,800)**	**$40,151,900**
P	PD Remodel & Addition on Expanded Civic Center Site	$24,920,650	26.8%	$31,599,384	$670	$11,059,784	$42,659,000	$2,160,114	$0	$44,819,000		$44,819,000
I	~~PD Annex~~ (1979 Police Station to be Demolished)											
A	~~PD North Annex~~ (Leased - to be let go)											
S	South Tracy Police Substation	$7,476,100	26.8%	$9,479,695	$1,080	$3,317,893	$12,798,000	$648,049	$1,760,000	$15,206,000		$15,206,000
T	Police Department Training Facility	$3,854,260	26.8%	$4,887,202	$350	$1,710,521	$6,598,000	$36,098	$402,925	$7,037,000		$7,037,000
D	Police Department Animal Shelter - Phase 2	$3,978,000	26.8%	$5,044,104	$850	$1,765,436	$6,810,000	$1,000,000	$0	$7,810,000		$7,810,000
	SUBTOTAL POLICE DEPARTMENT	**$40,229,000**		**$51,010,400**	**$670**	**$17,853,600**	**$68,865,000**	**$3,844,300**	**$2,162,900**	**$74,872,000**	**$0**	**$74,872,000**
RCT	Public Safety Radio Communications Facilities	$680,000	26.8%	$862,240	$2,160	$301,784	$1,164,000	$4,067,185	$125,000	$5,356,000	$0	$5,356,000
	SUBTOTAL COMMUNICATIONS FACILITIES	**$680,000**	26.8%	**$862,200**	**$2,160**	**$301,800**	**$1,164,000**	**$4,067,200**	**$125,000**	**$5,356,000**	**$0**	**$5,356,000**
	TOTAL PUBLIC SAFETY FACILITIES (rounded)	**$66,385,000**	26.8%	**$84,177,000**	**$730**	**$29,462,000**	**$113,639,000**	**$13,886,000**	**$3,714,000**	**$130,790,000**	**($10,407,000)**	**$120,380,000**

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APPENDIX E – PUBLIC SAFETY SOLAR NANOGRID COST ESTIMATE

KEY	PLACE NAME	Program Area	Loads		Rooftop Solar			Solar Carport (e)		
		New	Predicted (N) Facility Load	Predicted Maximum Battery Load	Rooftop Solar Maximum Capacity	Rooftop Solar Maximum Size	Estimated Rooftop Solar Cost @ $3K/kW	Needed Solar Carport Capacity	Needed Solar Carport Size	Needed Solar Carport System Size	Estimated Solar Carport Cost @ $3.4K/kW
94	Fire Station 94 (Reloc. Cordes Ranch Area) incl. Ladder Bay	7,750 sf	104 MWh/Yr	99 kW	70 MWh/Yr	74 kW	$222,000	34 MWh/Yr	3,800 sf	36 kW	$122,400
97	Fire Station 97 (Relocation - Valpico) incl. Ladder Bay	7,750 sf	104 MWh/Yr	99 kW	70 MWh/Yr	74 kW	$222,000	34 MWh/Yr	3,800 sf	36 kW	$122,400
99	Fire Station 99 (Ellis Area)	7,070 sf	95 MWh/Yr	90 kW	64 MWh/Yr	67 kW	$201,000	31 MWh/Yr	3,500 sf	33 kW	$112,200
T	Fire Training Facility - Phases 2 & 3	9,868 sf	132 MWh/Yr	126 kW	89 MWh/Yr	94 kW	$282,000	43 MWh/Yr	4,800 sf	46 kW	$156,400
	SUBTOTAL FIRE DEPARTMENT	**39,500 sf**	**435 MWh/Yr**	**414 kW**	**293 MWh/Yr**	**309 kW**	**$927,000**	**142 MWh/Yr**	**15,900 sf**	**151 kW**	**$513,400**
P	PD Remodel & Addition on Expanded Civic Center Site	19,809 sf	265 MWh/Yr	253 kW	89 MWh/Yr	94 kW	$282,000	176 MWh/Yr	19,600 sf	186 kW	$632,400
S	South Tracy Police Substation	8,794 sf	118 MWh/Yr	113 kW	79 MWh/Yr	84 kW	$252,000	39 MWh/Yr	4,300 sf	41 kW	$139,400
T	Police Department Training Facility	12,866 sf	173 MWh/Yr	165 kW	116 MWh/Yr	123 kW	$369,000	57 MWh/Yr	6,300 sf	60 kW	$204,000
D	Police Department Animal Shelter - Phase 2	5,900 sf	79 MWh/Yr	76 kW	53 MWh/Yr	56 kW	$168,000	26 MWh/Yr	2,900 sf	27 kW	$91,800
	SUBTOTAL POLICE DEPARTMENT	**47,400 sf**	**635 MWh/Yr**	**607 kW**	**337 MWh/Yr**	**357 kW**	**$1,071,000**	**298 MWh/Yr**	**33,100 sf**	**314 kW**	**$1,067,600**
	SUBTOTAL PUBLIC SAFETY FACILITIES	**87,300 sf**	**1,070 MWh/Yr**	**1,021 kW**	**630 MWh/Yr**	**666 kW**	**$1,998,000**	**440 MWh/Yr**	**49,000 sf**	**465 kW**	**$1,581,000**

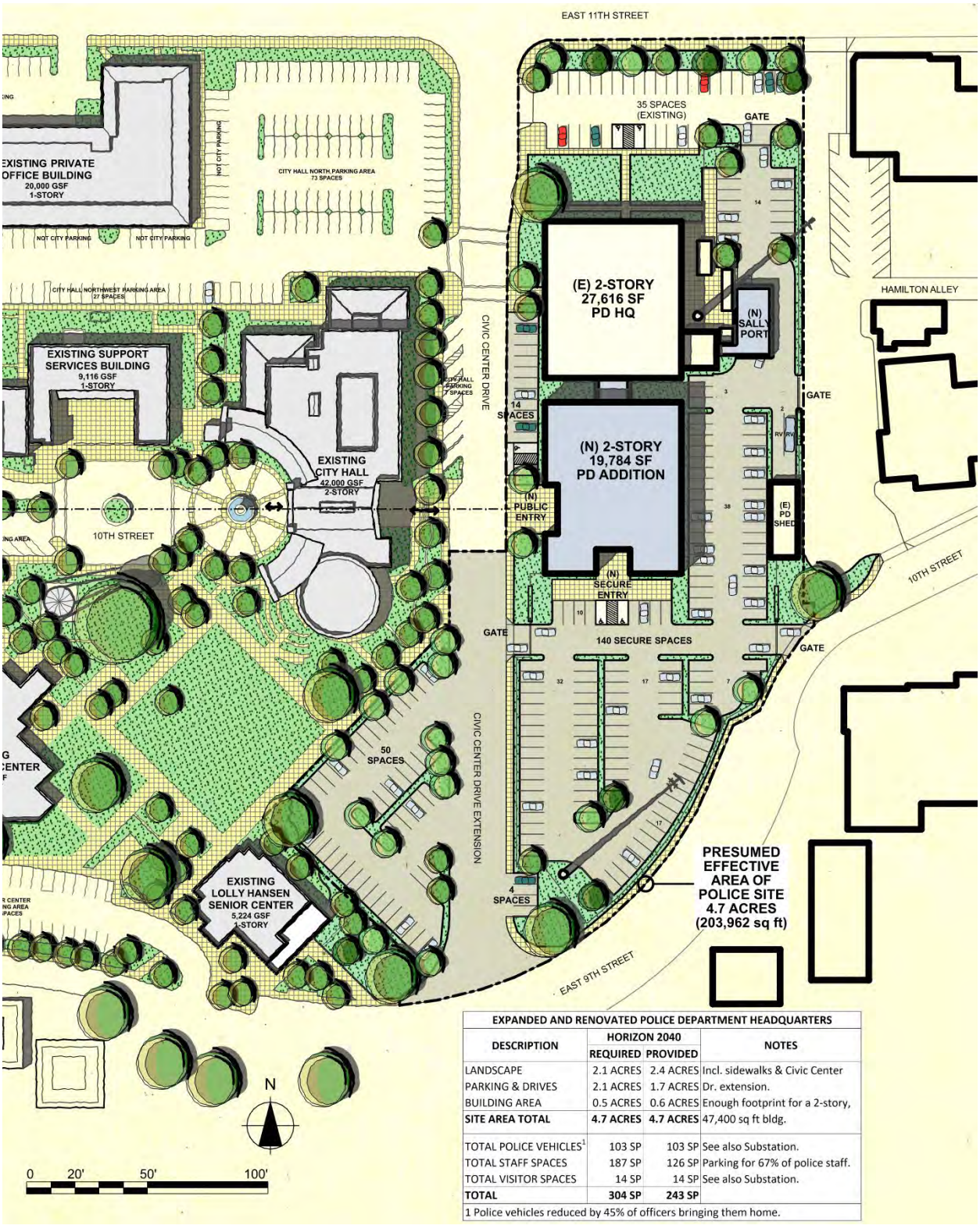
(continued)

KEY	PLACE NAME	2020 Subtotal Solar Carport Cost	Annual Construction Input Inflation 2021 & 2022	2023 Subtotal Solar Carport Bid Day Cost	Battery		2023 Total Project Bid Day Cost for Solar and Battery Installation	35% Indirect & Contingency: 10% Design & Planning; 10% CM; 15% General Contingency	2023 Total Project Cost for Solar and Battery Installation
					Needed Code-Required 6-Hour Battery	Estimated Battery System Cost			
94	Fire Station 94 (Reloc. Cordes Ranch Area) incl. Ladder Bay	$122,400	26.8%	$155,203	0.30 MWh	$240,000	$459,523	$160,833	$620,356
97	Fire Station 97 (Relocation - Valpico) incl. Ladder Bay	$122,400	26.8%	$155,203	0.30 MWh	$240,000	$459,523	$160,833	$620,356
99	Fire Station 99 (Ellis Area)	$112,200	26.8%	$142,270	0.27 MWh	$216,000	$416,158	$145,655	$561,813
T	Fire Training Facility - Phases 2 & 3	$156,400	26.8%	$198,315	0.31 MWh	$248,000	$512,779	$179,473	$692,252
	SUBTOTAL FIRE DEPARTMENT	**$513,400**		**$651,000**	**1.18 MWh**	**$944,000**	**$1,848,000**	**$646,800**	**$2,494,800**
P	PD Remodel & Addition on Expanded Civic Center Site	$632,400	26.8%	$801,883	0.76 MWh	$608,000	$1,572,827	$550,490	$2,123,317
S	South Tracy Police Substation	$139,400	26.8%	$176,759	0.34 MWh	$272,000	$521,655	$182,579	$704,235
T	Police Department Training Facility	$204,000	26.8%	$258,672	0.50 MWh	$400,000	$765,872	$268,055	$1,033,927
D	Police Department Animal Shelter - Phase 2	$91,800	26.8%	$116,402	0.23 MWh	$184,000	$349,714	$122,400	$472,114
	SUBTOTAL POLICE DEPARTMENT	**$1,067,600**		**$1,353,700**	**1.83 MWh**	**$1,464,000**	**$3,210,100**	**$1,123,500**	**$4,333,600**
	TOTAL PUBLIC SAFETY FACILITIES (rounded)	**$1,581,000**	26.8%	**$2,005,000**	**3.01 MWh**	**$2,408,000**	**$5,059,000**	**$1,771,000**	**$6,829,000**

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APPENDIX F – CIVIC CENTER PUBLIC SAFETY FACILITY SITE PLAN

Renovate existing 27,600 square foot building. Expand site to 4.7 acres on Civic Center campus by partially closing 10th Street and demolishing former 1979 Police Station. Add 19,784 square foot addition, expanded vehicle sally port, expanded secure parking, and expanded parking.



EXPANDED AND RENOVATED POLICE DEPARTMENT HEADQUARTERS			
DESCRIPTION	HORIZON 2040 REQUIRED	HORIZON 2040 PROVIDED	NOTES
LANDSCAPE	2.1 ACRES	2.4 ACRES	Incl. sidewalks & Civic Center
PARKING & DRIVES	2.1 ACRES	1.7 ACRES	Dr. extension.
BUILDING AREA	0.5 ACRES	0.6 ACRES	Enough footprint for a 2-story,
SITE AREA TOTAL	**4.7 ACRES**	**4.7 ACRES**	47,400 sq ft bldg.
TOTAL POLICE VEHICLES[1]	103 SP	103 SP	See also Substation.
TOTAL STAFF SPACES	187 SP	126 SP	Parking for 67% of police staff.
TOTAL VISITOR SPACES	14 SP	14 SP	See also Substation.
TOTAL	**304 SP**	**243 SP**	
1 Police vehicles reduced by 45% of officers bringing them home.			

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APPENDIX G – POLICE SUBSTATION SITE PLAN

Provide a new 8,800 square foot facility on 2.3 acres to be purchased by City near Ellis, South Linne, and Tracy Hills developments. With 20 visitor, 20 secure staff, and 54 secure police vehicle spaces, the substation site relieves some of the parking pressures on the Civic Center facility. The site further includes a covered space for an EOC "RV" Vehicle and covered motorcycle parking.



POLICE SUBSTATION		
DESCRIPTION	**HORIZON 2040**	**NOTES**
LANDSCAPE	1.0 ACRES	Incl. Sidewalks and Courtyard.
PARKING & DRIVES	1.1 ACRES	Equals 1-Story 8,800 SF Building
BUILDING AREA	0.2 ACRES	Footprint.
SITE AREA TOTAL	**2.3 ACRES**	
TOTAL POLICE VEHICLES	54 SP	Includes 20 "future" spaces as
TOTAL STAFF SPACES	20 SP	shown on site plan.
TOTAL VISITOR SPACES	20 SP	
TOTAL	**94 SP**	

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APPENDIX H – POLICE SUBSTATION CONCEPT FLOOR PLAN

The floor plan provides open office space for twelve workstations and private office space for six sergeants workstations. The plan includes a public lobby with restrooms and secure access to an 823 square foot Community Meeting room. The Community Meeting room, in turn, has access to a covered outdoor patio. For staff, across from lockers, is a 325 square foot Gym. For maximum flexibility in staffing, Option 2 below shows an all-gender version of the Locker room, with private changing rooms.



Floor Plan - Option 1



Floor Plan - Option 2

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APPENDIX J – GROWTH PROJECTION DATA

The growth assumptions in this Master Plan are based on data from September 2021, received from the City of Tracy. They don't include the growth assumed in the City of Tracy 6th cycle Housing Element.

Table 3-2. Projected Development by Time Frame within the City's Sphere of Influence[a]

Land Use Type	Total Projected New Development by 2025		Total Projected New Development by 2040[b]		Total Projected New Development at Buildout[c]	
	Dwelling Units	Gross Acres	Dwelling Units	Gross Acres	Dwelling Units	Gross Acres
Residential – Very Low Density[d]	-	-	265	223	1,292[e]	907
Residential – Low Density[d]	2,880	647	6,490	1,438	8,375	1,871
Residential – Medium Density[d]	253	49	5,444	608	8,150	902
Residential – High Density	1,591	81	3,300	181	7,033	380
Residential – Very High Density	110	3	110	3	110	3
Commercial	-	45	-	549	-	818
Office	-	1	-	115	-	256
Industrial	-	859	-	3,136	-	4,093
Institutional	-	3	-	187	-	187
Identified Parks[f]	-	139	-	280	-	280
Total	4,834	1,826	15,609	6,720	24,960	9,698

(a) Includes existing development constructed after 2017.

(b) Includes new development constructed within 2025 and 2040 time frames.

(c) Includes new development constructed within 2025, 2040, and Buildout time frames.

(d) For selected projects and development areas, it was assumed that 11.2% of the total gross acres in the very low, low, and medium density residential land use categories will develop as parks.

(e) Includes existing units from Mountain View Annexation.

(f) Includes park areas identified within the Rocking Horse, Ellis, Avenues, Tracy Hills Phase 1, and Legacy Fields developments.

To calculate population data, use 3.50 people per household for population projections, from CA Department of Finance Table E-5 Population and Housing Estimates for Cities, Counties and the State, 2011-2021 with 2010 Census Benchmark
https://www.dof.ca.gov/Forecasting/Demographics/Estimates/e-5/



Public Facilities Impact Fee Nexus Study

City of Tracy
Master Plan Area

June 2025

Prepared for:

TRACY

Prepared by:

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Tracy Citywide Public Facilities Master Plan Update (December 2023)

EXECUTIVE SUMMARY AND INTRODUCTORY SECTIONS

INTRODUCTION

The City of Tracy (City) is located in the Central Valley and is the second most populated city in San Joaquin County (County). The City spans an area of about 26 miles within a triangle formed by Interstate 205 to the north, Interstate 580 to the southwest, and Interstate 5 to the east. The City is located near both fertile and infertile agricultural lands, due to a region of hills west of Tracy. The City is a railroad town that came from the mid-19th century construction.

The City was founded in 1878 and incorporated as a city in 1910. The City of Tracy grew rapidly and prospered as the center of an agricultural area, even when larger railroad operations began to decline in the 1950s. Competition with trucking and automobiles resulted in widespread railroad restructuring. The City has its origins associated with the Central Pacific Railroad, which ran from Sacramento through Stockton to the San Francisco Bay area. The City's ties to the agriculture industry allowed for steady growth in early to mid-20th century but growth accelerated starting in the 1980's as the City served as an extended bedroom community to the San Francisco, Oakland, and Silicon Valley metropolitan areas.

The City is part of the San Jose-San Francisco-Oakland, California Combined Statistical Area, an extension of the Bay Area. At the time of the 2020 U.S. Census, the City population was 93,000. The California Department of Finance estimates that as of January 1, 2023, the City population is 95,615, incorporating the 2020 Census benchmark.

As the resident population and non-resident employment in the City increase, there exists a correlating rise in the demand for public infrastructure and services to support the increased demand on the City. California's Assembly Bill 1600 (AB 1600) adopted in 1987 and codified as California Government Code Section 66000 et. seq., allows the City to impose Development Impact Fees on new development within the City. Development Impact Fees (DIFs) are one-time charges on new development that is collected and used by the City to cover the cost of capital facilities, vehicles, and equipment that are required to serve new growth.

In January 2013, the City adopted the Citywide Public Facilities Master Plan completed by Hammond & Playle Architects, LLP. Following the adoption of the Master Plan, the City hired Harris & Associates to calculate the Public Facilities Impact Fee Program (April 2013). The Public Facilities Impact Fees were adopted in January of 2014 along with other Master Plan Fees and established the fees for development in the new areas of the City that were not already covered in one of the City's existing fee programs. In the years since, the City has applied an annual Engineering News Record (ENR) Construction Cost Index (CCI) increase to the fees but has not completed a comprehensive update.

The City subsequently hired the KPA Group to complete the Citywide Public Facilities Master Plan Update (December 2023), (PFMP). The PFMP was adopted by City Council on April 16, 2024. The purpose of this Nexus Study is to incorporate the findings from the PFMP and update the Public Facilities Impact Fees.

The goal of the City is to develop a fee program that achieves the funding objectives required to fund facilities identified in the master plans, balances fee levels with desired economic growth, and complies with the legal requirements of Assembly Bill 1600 (AB 1600) and Assembly Bill 602 (AB 602).

NEXUS STUDY

Purpose

As development occurs in the City, new backbone infrastructure and capital facilities are required to mitigate the increased demand created by new residents and workers. DIFs fund this required backbone infrastructure and capital facilities as well as the related administrative costs through the City's fee program. The Master Plan fee program area contains separate fee categories for each type of infrastructure and capital facilities. This Nexus Study updates the Public Facilities Impact Fee Program with the information provided in the updated PFMP.

This report is designed to satisfy AB 1600 Nexus requirements, AB 602 guidance, and provide the necessary technical analysis to support the adoption of the updated fees. The fees will be effective 60 days after the City's final action establishing and authorizing the collection of the fees.

Fee Program Costs

The Public Facilities Master Plan identified $311.8 million of Capital Improvement Program (CIP) new construction projects that are needed to be built to serve the City of Tracy at buildout. These costs were in 2023 dollars and have subsequently been updated to 2025 costs based on ENR or in the case of the Aquatic Center, an updated cost estimate. In addition, a new south Tracy Recreation Center estimated to cost $14 million has been added at the request of the City. The costs are further divided between those facilities that are only funded by residential development and those facilities that are funded by both residential and non-residential development.

The Public Facilities Master Plan Fee is based on new development's fair share of the facilities and costs identified in the Public Facilities Master Plan after factoring in other available funding sources. The PFMP calculated the percentage of CIP new construction projects attributable to new development by taking the ratio of the size of the needed facility space at buildout divided by buildout population multiplied by the population growth and then divided by the size of the new facility at buildout. This calculation is shown in **Figure 2-2**. The aquatic center and multi-generation recreation center have considerable funding coming from other sources (68 percent of

the Aquatic Center and approximately 94 percent of the Multi-Generational Recreation Center). This results in roughly $143 million being attributable to the Public Facilities Fee Program. After accounting for the existing fund balance collected, expenditures to date, and the deferred payments expected, the remaining cost to fund the facilities identified in the fee program amounts to $133.63 million.

Updated Fees

Pursuant to AB 602, residential development fees are to be assessed on a per square foot basis. To yield consistency across fees assessed on non-residential land uses, non-residential development fees will continue to be assessed per 1,000 building square foot.

Table ES-1 shows the proposed Public Facilities Impact Fees.

Table ES-1: Proposed Public Facilities Impact Fees

Land Use	Public Facilities
Residential (per SF)[1]	
Single Family Residential	$2.52
Multi-Family Residential (Attached 2-4)	$3.35
High Density Residential (Attached 4+)	$4.90
Non-Residential (per 1,000 Bldg SF)[1]	
Office	$508
Commercial	$304
Industrial	$102

[1] Residential fees rounded to the nearest hundredths. Non-Residential fees rounded to the nearest dollar.

Proposed Fee Comparison with Existing Fees

Table ES-2 compares the proposed Public Facilities Fees to the existing Public Facility Fees (as of July 1, 2024). The existing residential per unit fees were converted to fees per square foot using the same average unit sizes as the proposed fees. The existing non-residential fees were converted from a per acre fees to a per 1,000 building SF fee using the FAR assumptions in this Nexus Study. The Program Management component of the existing Public Facilities Fee was removed to provide an accurate comparison as the Program Management components of each Master Plan Fee has been consolidated into one Program Management standalone fee. To account for new development's fair share of the facilities since the start of the fee program, fund balances were incorporated into the fee calculation and removed from the remaining costs before dividing by the

new development projections. Further information on the comparison is described within Section 2 of this report.

Table ES-2: Proposed Fees Comparison to Existing Fees

Land Use	Proposed Public Facilities Fee	Existing Public Facilities Fee [1]	Percent Change
Residential (per SF)			
Single Family Residential	$2.52	$1.61	57%
Multi-Family Residential (Attached 2-4)	$3.35	$2.19	53%
High Density Residential (Attached 4+)	$4.90	$2.82	74%
Non-Residential (per 1,000 Bldg SF)			
Office	$508.00	$173.76	192%
Commercial	$304.00	$104.25	192%
Industrial	$102.00	$34.76	193%

[1] Program Management (5%) removed from Construction Cost of Existing Fee for an accurate comparison.

NEXUS STUDY REQUIREMENTS (ASSEMBLY BILL 1600)

AB 1600 was enacted by the State of California in 1987 creating the Mitigation Fee Act - Section 66000 et seq. of the Government Code. The Mitigation Fee Act requires that all public agencies satisfy the following requirements when establishing, increasing, or imposing a fee as a condition of approval of a development project:

1. Identify the purpose of the fee.
2. Identify the use to which the fee is to be put. If the use is financing public facilities, the facilities shall be identified.
3. Determine how there is a reasonable relationship between the fees use and the type of development project on which the fee is imposed.
4. Determine how there is a reasonable relationship between the need for the public facility and the type of development project on which the fee is imposed.
5. Determine how there is a reasonable relationship between the amount of the fee and the cost of the public facility or portion of the public facility attributable to the development on which the fee is imposed.

The purpose of this report is to demonstrate that the Public Facilities Fee comply with the Mitigation Fee Act. The assumptions, methodologies, facility standards, costs, and cost allocation factors that were used to establish the nexus between the fees and the development on which the fees will be charged are summarized in the subsequent sections of this report.

ASSEMBLY BILL 602

Assembly Bill (AB) 602, enacted by the State of California in 2021, amended Sections 65940.1 and 66019 of, and added Section 66016.5 to the Government Code. AB 602 requires that if a local agency conducts and adopts an impact fee nexus study after January 1, 2022, the local agency shall follow all of the following standards and practices:

1. Before the adoption of a development fee, an impact fee nexus study shall be adopted.
2. When applicable, the nexus study shall identify the existing level of service for each public facility, identify the proposed new level of service, and include an explanation of why the new level of service is appropriate.
3. A nexus study shall include information that supports the local agency's actions, as required by subdivision (a) of Section 66001 of the Government Code.
4. If a nexus study supports the increase of an existing fee, the local agency shall review the assumptions of the nexus study supporting the original fee and evaluate the amount of fees collected under the original fee.
5. A nexus study adopted after July 1, 2022, shall calculate a fee imposed on a housing development project proportionately to the square footage of proposed units of the development. A local agency that imposes a fee proportionately to the square footage of the proposed units of the development shall be deemed to have used a valid method to establish a reasonable relationship between the fee charged and the burden posed by the development. A nexus study is not required to comply with the requirements to calculate a fee imposed on a housing development project proportionally to the square footage of the proposed units if the local agency makes the following findings:
    - An explanation as to why square footage is not appropriate metric to calculate fees imposed on housing development project.
    - An explanation that an alternative basis of calculating the fee bears a reasonable relationship between the fee charged and the burden posed by the development.
    - That other policies in the fee structure support smaller developments or otherwise ensure that smaller developments are not charged disproportionate fees.
6. Large jurisdictions shall adopt a capital improvement plan as a part of the nexus study.
7. All studies shall be adopted at a public hearing with at least 30 days' notice, and the local agency shall notify any member of the public that requests notice of intent to begin an impact fee nexus study of the date of the hearing.
8. Studies shall be updated at least every eight years, beginning on January 1, 2022.
9. The local agency may use the impact fee nexus study template developed by the Department of Housing and Community Development pursuant to Section 50466.5 of the Health and Safety Code.

This report demonstrates that all fee components comply with AB 602.

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Section 1 POPULATION AND LAND USE ASSUMPTIONS

LAND USE TYPES

To ensure a reasonable relationship between each fee and the type of development paying the fee, different land use types must be distinguished. The land use categories used in this analysis are defined below.

- **Single Family Residential (SFR)**: Detached single-family dwelling units. Includes very low density, low density, and age-restricted units.
- **Multi-Family Residential (MFR)**: Attached residential project consisting of 2 to 4 units.
- **High Density Residential (HDR)**: Attached residential project consisting of 4 or more attached units.
- **Accessory Dwelling Unit (ADU)**: A second unit, attached or detached from a SFR.
- **Office**: All general, professional, and medical office development.
- **Commercial**: All commercial, retail, educational, hotel/motel development, and mixed-use development.
- **Industrial**: All manufacturing and warehouse development.

Some developments may include more than one land use type, such as an industrial warehouse with living quarters (a live-work designation) or a planned unit development with both Single and Multi-Family uses. In these cases, the fees will be calculated separately for each land use type.

GROWTH FORECASTS

Growth projections are used as indicators of demand. The City's existing population, as well as buildout population projections, are critical assumptions used to calculate the Public Facilities Fee. The following resources were used as part of this analysis:

- Estimates of population projections and total development through buildout were based on the City's Land Use Plan by TAZ provided by the City's Planning Department and updated to remove permits that were pulled between the time the projections were made and May 23rd, 2025.
- Estimated persons per household data were based on the 2021 US Census American Community Survey.
- Existing population estimates are from the 2022 California Department of Finance.
- Worker projections were based on the employment density per worker identified in the U.S. Green Building Council LEED BD+C Default Occupancy Counts.

Table 1-1 identifies the estimated growth projections to buildout.

Table 1-1: Projected New Population and Employee Growth

Land Use	Density	Total Projected New Development at Buildout	
Residential	*Persons Per Household*[1]	*Dwelling Units*	*New Population*
Single Family Residential[2]	3.50	15,539	54,387
Multi-Family Residential (Attached 2-4)	2.80	875	2,450
High Density Residential (Attached 4+)[3]	2.60	3,871	10,065
Subtotal Residential		**20,285**	**66,902**
Non-Residential	*Employment Density*[4]	*Square Feet*	*New Employees*
Office	300	4,952,249	16,507
Commercial	500	12,225,611	24,451
Industrial	1,500	70,832,851	47,222
Subtotal Non-Residential		**88,010,711**	**88,180**

Source: City provided land use TAZ data. Updated to remove developments that have pulled permits as of 05/23/2025.

[1] Persons per household assumption using data from the US Census American Community Survey (2021).

[2] Includes Very Low Density, Low Density Residential, and Single Family Age Restricted.

[3] Includes High Density and Very High Density Residential. 1,685 units shifted from Buildout to 2040 to match Master Plan assumptions.

[4] Employment density is the square feet per worker based on U.S. Green Building Council LEED BD+C Default Occupancy Counts.

SERVICE POPULATION

Demand for services and the associated facilities is based on the City's future service population, which includes residents and non-residential workers. In calculating the service population for growth, workers were weighted less than residents to reflect the lower service demand of workers. Non-resident workers spend less time in the City and use fewer services, so the demand for City services is considered to be less than that of a resident. Workers are weighted at 0.24 that of a resident based on worker utilizing services 40-hours a week versus a resident having access to services 168 hours a week. This methodology was established in the City's 2013 Public Facilities Master Plan.

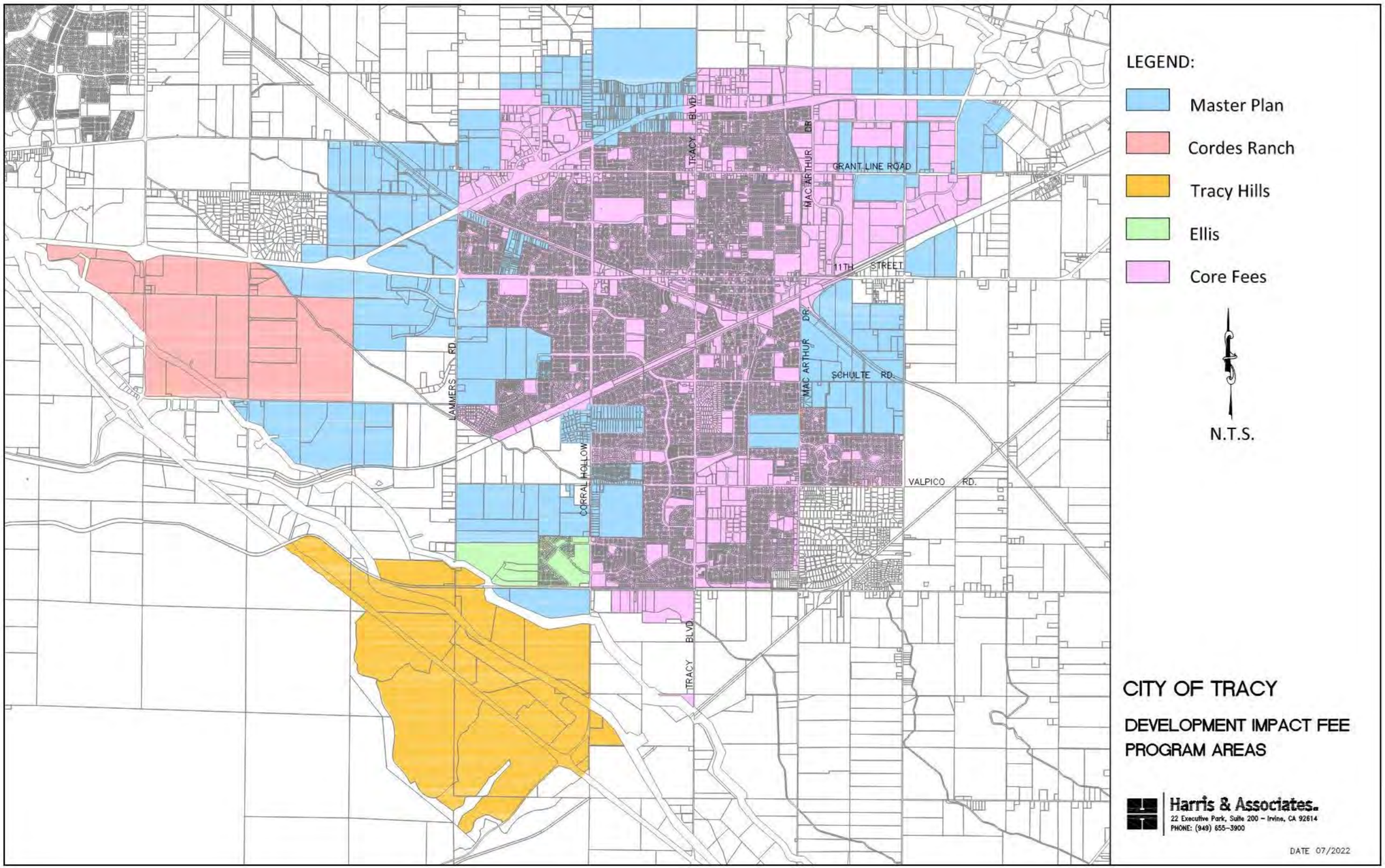
The Public Facilities Master Plan identifies the facilities that are needed to serve buildout of the City. The facilities identified in the Public Facilities Master plan are needed to serve both the existing and future service population. The facility costs are proportionately allocated between existing and future development These calculations can be found within the Public Facilities

Master Plan and in **Figure 2-2**. The Aquatic Center and the Multi-Generational Recreation Center have significant amounts of funding coming from other sources (68% for the Aquatic Center and approximately 94% for the Multi-Generational Recreation Center) therefore, the amount remaining after subtracting these other funding sources is being fully covered by the Public Facilities fee program. In addition, due to the fact that new development could have funded $38.2 million of the multi-generational facility but is only funding $5.2 million, the South Tracy Recreation Center estimated at $14 million, will be 100% funded by new development. The sum of the fee program funding is significantly less than new development's share.

Figure 1-1 shows the Master Plan fee program areas. Cordes Ranch and Tracy Hills are depicted in separate colors to differentiate that while they are generally subject to the Master Plan fees, they have agreements in place with the City that details their specific fees. The Core Fees program area has their own set of fees as outlined in the "Core Fees Development Impact Fee Study" adopted August 2021 and the Ellis program area has their own set of fees as outlined in the "Ellis Program Area Finance and Implementation Plan" adopted August 2013.

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Figure 1-1: City of Tracy Fee Program Areas



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RESIDENT AND EMPLOYMENT DENSITY

Using persons per household (PPH) data for residential units and employment density data for non-residential buildings is a common metric used to establish a reasonable relationship between the demand created by the development project and the fees charged. The residential density factors were derived using information from the US Census American Community Survey (2021) and the non-residential employment density factors are based on U.S. Green Building Council LEED BD+C Default Occupancy Counts. The following average density factors are used for each land use type.

Residential	**Density**
Single Family	3.50 residents per dwelling unit
Multi-Family (Attached 2-4)	2.80 residents per dwelling unit
High Density (Attached 4+)	2.60 residents per dwelling unit
Non-Residential	**Density**
Office	1 worker per 300 square feet
Commercial	1 worker per 500 square feet
Industrial	1 worker per 1,500 square feet

AVERAGE UNIT SIZES

To meet AB 602 requirement five (5), that states that a fee imposed on a housing development project shall be calculated proportionately to the square footage of proposed units of the development, this Nexus Study calculates a fee per unit and then uses the average unit size for Single Family Residential, Multi-Family Residential (Attached 2-4), and High Density Residential (Attached 4+) based on the estimated average size of planned new development within each land use category in the City to convert to a fee per square foot. The average unit size is based on the livable square footage of the residential units.

Basing the average unit size on livable square footage for all residential units is not only consistent with industry standard for fee calculations, but it also provides a strong nexus between the impact of the unit and the fee amount. A good example of industry standard are school fees in California. In California, school fees are based on assessable space, which means a quantity equal to the area (expressed in square feet) within the perimeter of a residential structure, not including the carport, communal walkway, garage, overhang, patio, enclosed patio, detached accessory structure or similar structure.

Multi-Family and High Density Residential projects that include communal spaces (i.e., clubhouse, maintenance facility, gym, etc.) will not be assessed impact fees on such areas as the

impact is considered to be captured within the residential fees. Areas that contain employees and are accessible by the public will be charged impact fees according to use (i.e., leasing office would pay office fees).

Based on the estimated average size of planned new development within each land use category in the City of Tracy, the following average unit sizes are utilized in this study.

Single Family Residential…… 2,500 Square Feet Per Unit
Multi-Family Residential (Attached 2-4)…….. 1,500 Square Feet Per Unit
High Density Residential (Attached 4+)...……. 950 Square Feet Per Unit

The City will monitor the average size of new housing units in the City on an annual basis and if the average size of units is significantly less than anticipated, the fees will be updated as part of the annual update to reflect this change in order to ensure the fee program does not fall short.

As detailed in the next section, the fee per square foot is calculated by dividing the fee per unit by the average size shown above for each residential unit type. Fees for Multi-Family Residential and High Density Residential result in a higher fee per square foot than Single Family Residential due to the higher density of people per square foot of space.

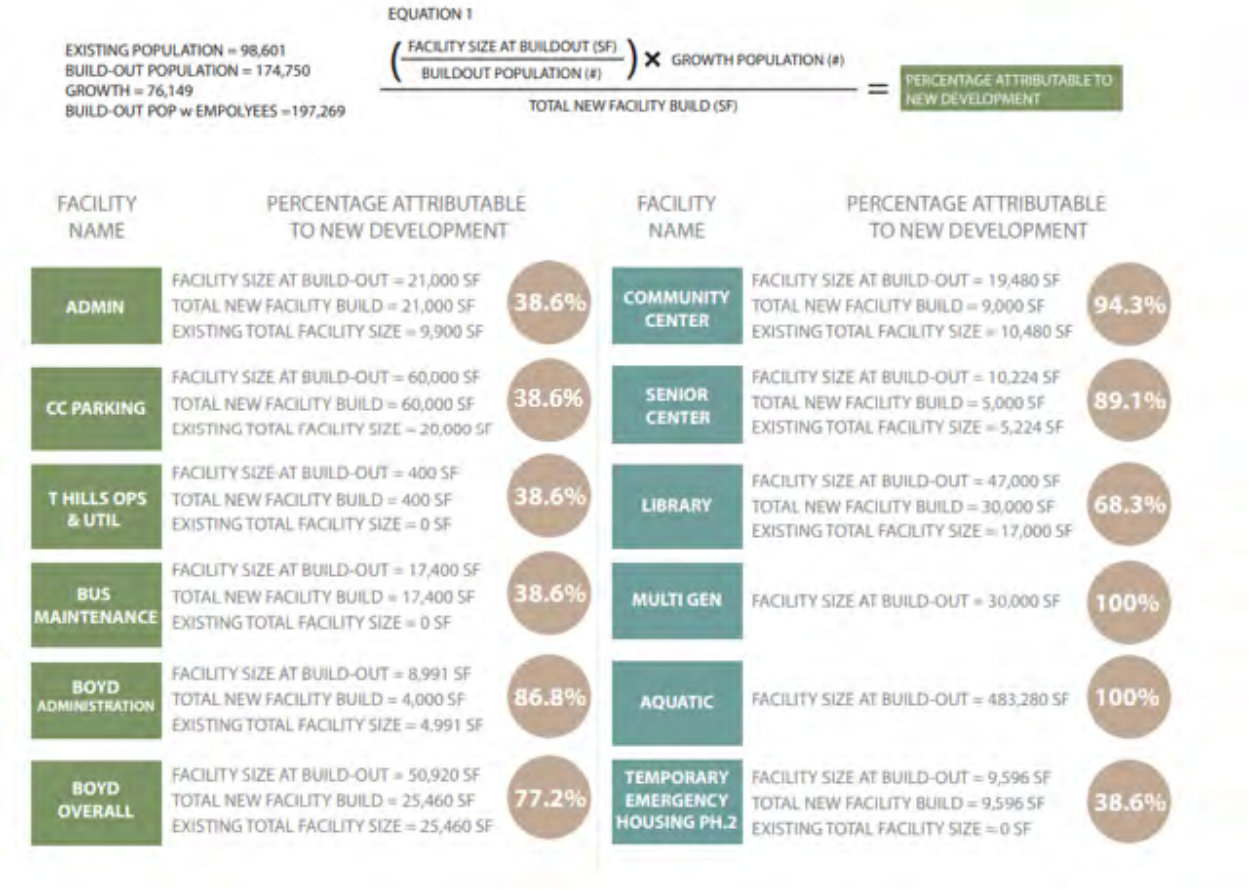
Section 2 PUBLIC FACILITIES FEE

COST SUMMARY AND CIP

The Public Facilities Master Plan identified $358.1 million of CIP new construction projects that are needed to be built to serve the City of Tracy at buildout. An additional $20.8 million in CIP renovation projects and $28.5 million in deferred maintenance projects were also identified. However, the PFMP did not attribute any of the renovation or deferred maintenance costs to new development and thus they are not included when calculating the Public Facilities Fee. Since the adoption of the public facilities Master Plan, the City has identified the need for a recreation center in south Tracy and has added an additional $14 million to the plan.

The Public Facilities Fee is based on the costs of new development's fair share of the CIP new construction projects, netting out other funding sources. The PFMP calculation for determining the percentage attributable to new development takes the ratio of the size of the needed facility space at buildout divided by buildout population multiplied by the population growth and then divided by the size of the new facility at buildout. The equation and calculated percentages are shown in **Figure 2-1** and can be found within the "Cost Estimating" section of the Public Facilities Master Plan Update, page 21 (**Appendix**). It should be noted that for the "Admin" and "CC Parking" Facilities, the existing facility will be demolished and all new facilities built. In addition, the CC Parking percentage has been updated from 40.6 percent in the master plan to 38.6 percent in the nexus study to correct an error.

Figure 2-1: Public Facilities Master Plan Cost Attributable to New Development



The percentage attributable to new development is then applied to the costs of the facilities. The Aquatic Center and the Multi-Generational Recreation Center have significant amounts of funding coming from other sources such as Measure V, grants and other fee programs (68% for the Aquatic Center and approximately 94% for the Multi-Generational Recreation Center). This funding more than offsets existing development's fair share. Therefore, the amount remaining after subtracting these other funding sources, is being fully covered by the Public Facilities Fee program. In addition, due to the fact that only $5.2 million in impact fees were used to fund the multi-generational center while new development's share was $38.2 million, the entire south Tracy recreation center is being funded with fees. The combination of these two facilities ($19.3 million) is far less than new development's identified share of the multi-generational center, both of which serve the same purpose but serve different geographies within the City.

After considering other funding sources and applying the percentage of the costs attributable to new development, the remaining costs attributable to the Public Facilities Fee Program amounts to roughly $143 million. After accounting for expenditures to date, the existing fund balance, and the Cordes ranch deferred payments, the remaining cost to fund the facilities identified in the fee program amounts to $133.63 million.

Table 2-1 summarizes the estimated project costs, maximum cost attributable to new development, other identified funding sources, remaining cost attributable to the fee program, and the cost the City must fund. The City plans to fund the costs shown in the "Remaining City Costs" column through the use of Grants, Measure V, and other available funding mechanisms. The PFMP identifies potential funding options for the portion of costs attributable to existing development in detail in section "Funding Options", page 442 (**Appendix**). The final funding sources of the Public Facilities projects will be identified as part of the City's five-year Capital Improvement Program (CIP) process.

Table 2-1 also serves as the Public Facilities Fee CIP list as required by AB 602. The table identifies each of the facilities that will be paid for in part or whole by the Public Facilities Fee and identifies the estimated start date of construction, as identified in the Public Facilities Master Plan. The exact start date is difficult to determine as revenue collection varies based on the timing of new development moving forward and the timing of securing other funding sources. The City will use the CIP facilities identified here to guide their five-year Capital Improvement Plan budget based upon city need and timing of securing adequate revenue.

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Table 2-1: Public Facilities Cost Summary

Building	Start Year	Proposed Area (Sq. Ft.)	Unit Cost/ Sq. Ft.	Construction Cost	Site Development	35% Mark-up [1]	Furniture, Fixtures, & Equipment / Vehicles	Land	Remaining Cost (2023$)	Remaining Cost (2025$) [3]	Remaining Cost Attributable to Fee Program [4]	Maximum Cost Attributable to Fee Program [5]	Identified Funding Sources [2]	Remaining Cost Attributable to Fee Program	Remaining City Cost [6]
Residential Funded Facilities															
Multi-Generational Recreation Center	2023	52,637	$1,051	$55,305,357	$7,800,000	$22,086,875	$2,385,000	$0	$87,577,232	$87,577,232	43.58%	$ 38,166,158.00	($82,312,870)	**$5,264,362.0**	$0
Recreation Center - South Tracy	2035	8,414	$1,051	$8,841,054	$1,246,899	$3,530,784	$381,263	n/a	$14,000,000	$14,000,000	100.00%	$ 14,000,000.00	$0	**$14,000,000.0**	$0
Community Center	2036	9,000	$739	$6,648,333	$225,000	$2,405,667	$221,000	n/a	$9,500,000	$9,566,291	94.32%	$ 9,022,926.00	$0	**$9,022,926.0**	$543,365
Senior Center	2038	5,000	$760	$3,798,519	$200,000	$1,399,481	$102,000	n/a	$5,500,000	$5,538,379	89.10%	$ 4,934,696.00	$0	**$4,934,696.0**	$603,683
Tracy Library	2029	20,000	$840	$16,800,000	$1,425,000	$6,378,750	$340,000	$633,250	$25,577,000	$25,755,476	68.27%	$ 17,583,264.00	$0	**$17,583,264.0**	$8,172,212
Aquatic Center	2025	16,134	$3,629	$58,545,193	$11,517,288	$24,521,869	$415,650	n/a	$95,000,000	$95,000,000	43.58%	$ 41,401,000.00	($65,000,000)	**$30,000,000.0**	$0
Residential Funded Facilities Subtotal		**111,185**	**$8,068**	**$149,938,456**	**$22,414,188**	**$60,323,425**	**$3,844,913**	**$633,250**	**$237,154,232**	**$237,437,378**		**$125,108,044**	**($147,312,870)**	**$80,805,248.0**	**$9,319,260**
Residential & Non-Residential Funded Facilities															
Administration Building	2026	21,000	$833	$17,493,000	$200,000	$6,192,550	$357,000	n/a	$24,242,550	$24,411,714	38.60%	$ 9,422,921.76	$0	**$9,422,922**	$14,988,793
Bus Maintenance/Corp Yard	2024	17,400	$1,121	$19,500,000	$4,500,000	$8,400,000	$4,000,000	n/a	$36,400,000	$36,653,999	38.60%	$ 14,148,443.63	$0	**$14,148,444**	$22,505,555
Civic Center Parking Garage	N/A	60,000	$130	$7,800,000	$300,000	$2,835,000	$1,020,000	$625,000	$12,580,000	$12,667,783	38.60%	$ 4,889,764.31	$0	**$4,889,764**	$7,778,019
Tracy Hills Public Works Facility	2021	400	$778	$311,200	$0	$108,920	$6,800	n/a	$426,920	$429,899	38.60%	$ 165,941.03	$0	**$165,941**	$263,958
Temporary Emergency Housing Ph 2	2021	9,596	$603	$5,786,569	$1,500,000	$2,550,299	$163,132	n/a	$10,000,000	$10,069,780	38.50%	$ 3,876,865.28	$0	**$3,876,865**	$6,192,915
Boyd Service Center									$0			$ -			
Overall	N/A	28,370	$705	$20,000,000	$1,900,000	$7,665,000	$482,290	n/a	$30,047,290	$30,256,960	77.20%	$ 23,358,373.02	$0	**$23,358,373**	$6,898,587
Administration	N/A	2,500	$2,060	$5,150,000	$129,150	$1,847,703	$127,347	n/a	$7,254,200	$7,304,819	86.77%	$ 6,338,391.68	$0	**$6,338,392**	$966,428
Residential & Non-Residential Funded Facilities Subtotal		**139,266**	**$6,230**	**$76,040,769**	**$8,529,150**	**$29,599,472**	**$6,156,569**	**$625,000**	**$120,950,960**	**$121,794,955**		**$62,200,701**	**$0**	**$62,200,701**	**$59,594,254**
Total Fund Facilities		**250,451**	**$14,298**	**$225,979,225**	**$30,943,338**	**$89,922,897**	**$10,001,482**	**$1,258,250**	**$358,105,191**	**$359,232,333**			**($147,312,870)**	**$143,005,949**	**$68,913,514**

Source: City of Tracy Public Facilities Master Plan, prepared by KPA (July 2022, Revised Costs February 2023).

[1] Mark-up includes: 10% Design and Planning, 10% Construction Maintenance, 15% General Contingency.

[2] Funding from Measure V, Grants, and other fee programs.

[3] The Remaining Costs on construction projects are escalated to current dollars using the San Francisco ENR CCI.

[4] Percent attributable to new development from the Tracy Public Facilities Master Plan, prepared by KPA.

[5] Maximum allowable cost attributable to the fee program based on the percentages from the KPA report.

[6] The City will be required to fund the costs shown in the Remaining City Costs column through the use of Grants, Measure V, and other available funding sources.

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FEE METHODOLOGY

The Public Facilities Fee uses the Planned Facility Method to calculate the fee. As stated in the "Impact Fee Nexus Study Template" prepared for the California Department of Housing and Community Development by Terner Center for Housing Innovation at UC Berkeley, the Planned Facility Method "Estimate the costs for future facilities needed to serve new development based on a long range expenditure plan for these future facility costs." The fee is based on new development's fair share of the costs of the facilities identified in the PFMP needed at buildout.

The Public Facility Fee is calculated based on the estimated number of new residents and workers that are generated by each new development. Workers are weighted at a lower weight than residents to reflect their lesser impact on the facilities based on the number of hours they spend in the City compared to a resident. This weighting is calculated as resident equivalents. Each fee component of the Public Facility Fee uses the resident equivalents to calculate an EDU factor to equate each land use to that of a single family home. The EDU factor is calculated based on the density factor for each residential and non-residential land use. Density is measured as "persons per dwelling unit" for residential uses or "square feet per worker" for nonresidential uses. The cost per EDU is calculated and spread to each land use based on the EDU equivalent methodology ensuring a reasonable relationship between the fee and the type of development project. The following steps are used to calculate the EDU factor for each land use.

1. The residential units and non-residential square feet are multiplied by the density to calculate the resident and worker projections.
2. The non-residential resident equivalent is calculated by multiplying the employee projection by 0.24.
3. The EDUs are then calculated by dividing the resident equivalents by the Single-Family residential density (3.50).
4. Finally, the EDU factor is calculated by dividing each land uses' EDUs by the residential units or 1,000 square feet of nonresidential in that category.

These calculations are shown in **Table 2-2**.

Table 2-2: Total Equivalent Dwelling Units

Land Use	Buildout Units / Building SF [1]	Density[2]	Resident/ Employee Projection	Resident Equivalents[3]	EDUs	EDU Factor
Residential						
Single Family Residential	15,539	3.50	54,387	54,387	15,539	1.00
Multi-Family Residential (Attached 2-4)	875	2.80	2,450	2,450	700	0.80
High Density Residential (Attached 4+)	3,871	2.60	10,065	10,065	2,876	0.74
Subtotal Residential	**20,285**		**66,902**	**66,902**	**19,115**	
Non-Residential						
Office	4,952,249	300	16,507	3,962	1,132	0.229
Commercial	12,225,611	500	24,451	5,868	1,677	0.137
Industrial	70,832,851	1,500	47,222	11,333	3,238	0.046
Subtotal Non-Residential	**88,010,711**		**88,180**	**21,163**	**6,047**	
Total				**88,065**	**25,162**	

[1] Based on buildout population projections.

[2] Density is measured as "persons per dwelling unit" for residential land uses and "square feet per worker" for non-residential land uses.

[3] Workers are weighted a population of 0.24 based on a 40-hour work week divided by 168 hours in a week and rounded to nearest whole number.

The cost per EDU is calculated by taking the cost attributable to the fee program, subtracting expenditures to date, the existing fund balance, and the Cordes Ranch deferred payments then dividing by the total number of EDUs. The aquatic center, multi-generation recreation center, south Tracy recreation center, community center, senior center, and library expansion costs will only be paid by the residential land uses as the non-residential land uses do not generate the need for these facilities. Thus, the cost per EDU for residential and the cost per EDU for non-residential must be calculated separately by dividing by the appropriate EDU counts. The Public Facilities costs per EDU are calculated in **Table 2-3**.

Table 2-3: Public Facilities Cost per EDU

Facility	Cost Attributable to Fee Program	Expenditures to Date[1]	Fund Balance[2]	Cordes Ranch Deferred Payment[3]	Remaining Cost to Fund	Total EDUs	Cost/ EDU (Residential)	Cost/ EDU (Non-Residential)
Residential Funded Facilities	$80,805,248	($5,264,362)	$2,269,284	$0	$77,810,170	19,115	$4,071	$0
Residential & Non-Residential Funded Facilities	$62,200,701	$0	($6,337,833)	($45,934)	$55,816,934	25,162	$2,218	$2,218
Total[4]	**$143,005,949**	**($5,264,362)**	**($4,068,549)**	**($45,934)**	**$133,627,104**		**$6,289**	**$2,218**

[1] Expenditures from the Multi-Generational Recreation Center.

[2] Fund balance as of 05/20/2025.

[3] Cordes Ranch deferred fees per DA Section 6.3C (09/17/2013). Does not include Program Management.

[4] Totals rounded to nearest dollar.

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FEE SUMMARY

The Residential Public Facilities Fees are converted into a fee per square foot by multiplying the cost per EDU (**Table 2-3**) by the EDU factor (**Table 2-2**) and then dividing by the average unit size of each land use in the City. The Non-Residential Public Facilities Fees are converted into a fee per 1,000 building square feet by multiplying the cost per EDU (**Table 2-3**) by the EDU factors (**Table 2-2**) for each non-residential land use. **Table 2-4** summarizes the Public Facilities Fee calculation.

Table 2-4: Public Facilities Fee Calculation

Land Use	Cost per EDU	EDU Factor	Total Fee	Average Size[1]	Total Fee
Residential [2]			*(per Unit)*		*(per SF)*
Single Family Residential	$6,289	1.00	$6,289	2,500	$2.52
Multi-Family Residential (Attached 2-4)	$6,289	0.80	$5,031	1,500	$3.35
High Density Residential (Attached 4+)	$6,289	0.74	$4,654	950	$4.90
Non-Residential [3,4] **(per 1,000 Bldg SF)**					
Office	$2,218	0.229	$508	n/a	$508
Commercial	$2,218	0.137	$304	n/a	$304
Industrial	$2,218	0.046	$102	n/a	$102

[1] Average size based on the average unit size of planned new development in the City of Tracy.
[2] The fee for residential will be applied to the livable square footage.
[3] The fee for non-residential will be applied to the building square footage. Fee is rounded to the nearest dollar.
[4] Non-Residential EDU factor rounded to the nearest thousandth for greater accuracy.

FEE COMPARISON

Table 2-5 compares the proposed fee for public facilities to the existing fee (as of July 1, 2024). The existing per unit fee was converted to a fee per square foot using the same average unit sizes as the proposed fees. The public facilities fee is increasing for the three main reasons discussed below.

1. The estimated construction costs for facilities have increased to keep up with the rising cost of construction.
2. Additional facilities have been included based on the needs identified in the Public Facilities Master Plan such as the Civic Center Parking Garage, Tracy Hills Public Works facility, Temporary Shelter, South Tracy Recreation Center, and Bus Maintenance/ Corporation Yard.
3. The facilities funded by both residential and non-residential increased at a higher percentage than the facilities funded only by residential, resulting in a larger increase to non-residential land uses.
4. Population assumptions have been updated from the previous master plan. This change in assumptions results in more persons per unit. By spreading new development's fair share by population, an increase in the estimated persons per household corresponds with an increasing fee.

Table 2-5: Public Facilities Fee Comparison

Land Use	Proposed Public Facilities Fee	Existing Public Facilities Fee [1]	Percent Change
Residential (per SF)			
Single Family Residential	$2.52	$1.61	57%
Multi-Family Residential (Attached 2-4)	$3.35	$2.19	53%
High Density Residential (Attached 4+)	$4.90	$2.82	74%
Non-Residential (per 1,000 Bldg SF)			
Office	$508.00	$173.76	192%
Commercial	$304.00	$104.25	192%
Industrial	$102.00	$34.76	193%

[1] Program Management (5%) removed from Construction Cost of Existing Fee for an accurate comparison.

EXISTING AND PROPOSED LEVEL OF SERVICE

AB 602 states, "When applicable, the nexus study shall identify the existing level of service for each public facility, identify the proposed new level of service and include an explanation of why the new level of service is appropriate."

The Public Facilities Master Plan analyzes the new facilities that are needed to serve the City at buildout and calculates the percentage attributable to new development by taking the ratio of the size of the needed facility space at buildout divided by buildout population multiplied by the population growth and then divided by the size of the new facility at buildout. The percentage attributable to new development is then applied to the costs of the facilities. This methodology conservatively ensures that new development is only funding their proportionate share of the total facilities and is not expected to mitigate any existing deficiencies or increase the level of service at the expense of new development. The Aquatic Center and the Multi-Generational Recreation Center have significant amounts of funding coming from other sources (68% for the Aquatic Center and approximately 94% for the Multi-Generational Recreation Center) that offset existing development's fair share. Therefore, the amount remaining after subtracting these other funding sources, is being fully covered by the Public Facilities Fee program.

NEXUS REQUIREMENT SUMMARY

AB 1600 requires that public agencies satisfy five requirements when establishing, increasing, or imposing a fee as a condition of approval of a development project. The required findings are as follows.

Requirement 1: Identify the purpose of the fee.

The purpose of the Public Facilities Fee is to fund public facilities needed to serve new development in the City. In order to accommodate these needs, new facilities will be built, or existing facilities will be expanded. Each new resident and worker create a demand for additional public facilities: such as additional space at City Hall or expansion of the Corporation Yard. In addition, new residents create the additional need for recreational facilities such as an aquatic center, library, and recreation centers. These facilities are shown in **Table 2-1** and are further defined in the Public Facilities Master Plan.

Requirement 2: Identify the use of the fee.

The Public Facilities Fee will be used to fund the public facilities listed in **Table 2-1**. These projects were identified in the updated Public Facilities Master Plan, prepared by KPA (December 2023) as the facilities required to mitigate the impact of new development. The City subsequently added a south Tracy recreation center to the project list to help meet the demands of residents in south Tracy.

Requirement 3: Determine how there is a reasonable relationship between the fee's use and the type of development project on which the fee is imposed.

The Public Facilities Fee will be used to fund the public facilities projects listed in **Table 2-1** that are necessary to serve the increased residents and workers generated by new development. The Public Facilities Fee is calculated based on the number of new residents and workers that are generated by each type of new development. The aquatic center, multi-generation recreation center, south Tracy recreation center, community center, senior center, and library expansion costs will only be paid by the residential land uses as the non-residential land uses do not generate the need for these facilities. The remaining facilities are funded by both residential and non-residential land uses. Residential and Non-Residential EDUs are calculated separately (**Table 2-2**) to ensure facilities that are not utilized by non-residential developments are not incorporated in each facility's cost per EDU calculation (**Table 2-3)**. The cost per EDU is then spread to each land use based on the EDU equivalent methodology ensuring a reasonable relationship between the fees use and the type of development project. These calculations are shown in **Table 2-4**.

Requirement 4: Determine how there is a reasonable relationship between the need for the public facility and the type of development project on which the fee is imposed.

Each new development is anticipated to generate either new residents or workers. The addition of these new residents and workers directly creates the need for new public facilities. These facilities are necessary in order to maintain the required level of service. The aquatic center, multi-generation recreation center, south Tracy recreation center, community center, senior center, and library expansion costs will only be paid by the residential land uses as the non-residential land uses do not generate the need for these facilities. The remaining facilities are funded by both

residential and non-residential land uses. The Public Facilities Fee is based on the number of applicable workers and/or residents each new development is expected to generate, thus ensuring that the need for the facilities is directly related to a particular development's impact. New workers generate a smaller demand than a resident due to the reduced hours they spend in the City, thus one worker is considered, on average, as equivalent to 0.24 that of a resident. This relationship is calculated in **Table 2-2, Table 2-3,** and **Table 2-4**.

Requirement 5: Determine how there is a reasonable relationship between the amount of the fee and the cost of the public facility or portion of the public facility attributable to the development on which the fee is imposed.

The Public Facilities Fee will provide the funding for the required public facilities that are needed to serve the City at buildout. These facilities and costs are summarized in **Table 2-1**. The percentage attributable to new development is calculated in the PFMP and shown in **Figure 2-2,** ensuring that new development does not pay more than their fair share of the facilities. The fund balance, expenditures to date, and deferred payments were also factored into calculating the remaining cost of each facility that is to be funded by the Public Facilities fee program. The remaining costs are then spread to each land use based on the number of new resident equivalents that the land use will generate calculated as an EDU factor as shown in **Table 2-2**. By spreading the fee based on the EDU factor, as shown in **Table 2-3** and **Table 2-4**, each new development is only paying for their fair share of the required facilities since the need for the facilities directly correlates to the addition of new residents and workers. Non-residential land uses will not be allocated a cost for the new aquatic center, south Tracy recreation center, multi-generation recreation center, community center, senior center, and library expansion costs facilities as these land uses do not generate a need for these facilities based on the impact of their development on the facilities.

Section 3 IMPLEMENTATION AND ADMINISTRATION

IMPLEMENTATION

According to the California Government Code, prior to levying a new fee or increasing an existing fee, an agency must hold at least one open and public meeting with at least 30 days' notice. In addition, notice of the time and place of the meeting, including a general explanation of the matter to be considered, and a statement that the data required by this section is available, shall be mailed at least 14 days prior to the meeting to any interested party who files a written request with the local agency for mailed notice of the meeting on new or increased fees or service charges. Any written request for mailed notices shall be valid for one year from the date on which it is filed unless a renewal request is filed. At least ten days prior to this meeting, the agency must make data on infrastructure costs and funding sources available to the public. Notice of the time and place of the meeting and a general explanation of the matter are to be published in accordance with Section 6062a of the Government Code, which states that publication of notice shall occur for ten days in a newspaper regularly published once a week or more. Two publications, with at least five days intervening between the dates of first and last publication not counting such publication dates, are sufficient. The period of notice commences upon the first day of publication and terminates at the end of the tenth day, including therein the first day. The new or increased fees shall be effective no earlier than 60 days following the final action on the adoption or increase of the fees. Following adoption of the fees, the fees and supporting information must be placed on the City's website.

FEE PROGRAM ADMINISTRATIVE REQUIREMENTS

The Government Code requires the City to report every year and every fifth-year certain financial information regarding the fees. The City must make available within 180 days after the last day of each fiscal year the following information from the prior fiscal year:

1. A brief description of the type of fee in the account or fund.
2. The amount of the fee.
3. The beginning and ending balance in the account or fund.
4. The amount of the fee collected and the interest earned.
5. An identification of each public improvement for which fees were expended and the amount of expenditures.
6. An identification of an approximate date by which time construction on the improvement will commence if it is determined that sufficient funds exist to complete the project.
7. An identification of each improvement identified pursuant to requirement #6 listed on a previous report and whether construction began on the approximate date noted within that report. If construction did not commence by the approximate date provided in the previous report, identify the reason for the delay and a revised approximate commencement date.

8. A description of each interfund transfer or loan made from the account and when it will be repaid.
9. Identification of any refunds made and the number of persons or entities identified to receive those refunds once it is determined that sufficient monies have been collected to fund all fee related projects.

On October 11, 2023, California Governor Gavin Newsom signed into law AB 516 which amended certain portions of the Mitigation Fee Act related to the annual and five-year reporting requirements. Under AB 516, Requirements 6 and 8 have been expanded to include the following:

> 6a. Identification of each public improvement identified in the previous report and whether construction began on the approximate date noted
>
> 6b. For previously identified projects that did not start construction on the approximate date in the previous report, the reason for the delay and a revised approximate date that the local agency will commence construction, if applicable
>
> 6c. For any refunds made, the number of persons or entities identified to receive those refunds

The City must make this information available for public review and must also present it at the next regularly scheduled public meeting not less than 15 days after this information is made available to the public.

For the fifth fiscal year following the first deposit into the account or fund, and every five years thereafter, the City must make the following findings with respect to any remaining funds in the fee account, regardless of whether those funds are committed or uncommitted:

1. Identify the purpose to which the fee is to be put.
2. Demonstrate a reasonable relationship between the fee and the purpose for which it is charged.
3. Identify all sources and amounts of funding anticipated to complete financing any incomplete improvements.
4. Designate the approximate dates on which funding in item (3) above is expected to be deposited into the fee account.

As with the annual disclosure, the five-year report must be made public within 180 days after the end of the City's fiscal year and must be reviewed at the next regularly scheduled public meeting.

FEE ADJUSTMENT PROCEDURES

The Public Facilities Fee may be adjusted periodically to reflect revised facility requirements, receipt of funding from alternative sources (i.e., state or federal grants), revised facilities or costs, changes in demographics, changes in the average unit square footage, or changes in the land use

plan. In addition, the fees will be automatically updated each year on July 1st based on the June ENR CCI for San Francisco. Due to the timing of when the fees will take effect, the next fee adjustment will occur July 2026.

TIMING OF FEE PAYMENT

Fees will be collected at the time the building permit for the project is issued. All residential projects will pay a fee based on the livable square footage of the residential units. For residential projects that include multiple buildings, fees will be due at the time the building permit is issued for each building. The non-residential communal portion for high-density residential projects (i.e., clubhouse, maintenance facility, gym, etc.) will not be assessed impact fees as the impact is considered to be captured in the residential fees. Areas that are accessible by the public (i.e., a leasing office) will be charged impact fees according to use.

DESIGNATED RESIDENTIAL PROJECTS DEFERRED FEE PAYMENTS

California Senate Bill 937 (SB 937), which became effective on January 1, 2025, significantly delays the collection of fees for residential projects defined as "Designated Residential Development Projects." Specifically, SB 937 states that public agencies may not impose development impact fees on Designated Residential Development Projects until the project receives a Certificate of Occupancy or Temporary Certificate of Occupancy. Furthermore, local agencies may not charge interest on the delayed fee payments for such projects; rather, the fees must reflect the fee amount in place at the time the project's building permits are issued. In addition, the bill extends housing entitlements by 24 months for projects with entitlements issued prior to January 1, 2024, and set to expire on or before December 21, 2025.

SB 937 was designed to incentivize housing production by mitigating the effects of rising construction costs and interest rates, which hinder the financial feasibility of new housing projects. By deferring fee payments with zero interest, SB 937 can help to incentivize housing developers, who must demonstrate financial feasibility to investors and lending institutions before receiving necessary funding. Additionally, by extending entitlements, the bill allows developers more time to raise funding before constructing the project. By providing these incentives to developers, the bill strives to increase housing production, allowing local jurisdictions to fulfill their housing goals.

Housing projects must meet one of the following conditions to be considered a Designated Residential Development Project:

1. 100% of residential units (excluding the manager's unit) are reserved for low-income households.
2. The project meets the requirements regarding a Low Barrier Navigation Center Developments, per Government Code Section 65662.

3. The project is approved by a local government and meets all site-specific criteria, affordability criteria, and objective development standards pertaining to affordable housing developments located in commercial zones or mixed-income housing developments along commercial corridors, as specified by Article 2 (commencing with Section 65912.110) or Article 3 (commencing with Section 65912.120) of Chapter 4.1 of the Government Code.
4. The project is subject to a streamlined ministerial approval process, per Government Code Section 65913.4.
5. The project meets the criteria specified in the Affordable Housing on Faith and Higher Education Lands Act of 2023 (SB4)
6. The project is entitled to a Density Bonus, per Government Code Section 65915.
7. The project features 10 or fewer units.

Although fees are deferred for Designated Residential Development Projects until the project receives a Certificate of Occupancy or Temporary Certificate of Occupancy, it is important to note that public agencies may still collect utility service fees after receiving an application for utility services. In addition, developers may be required to pay development impact fees prior to the Certificate of Occupancy if construction does not commence within five years of the building permit issue date.

PROGRAM MANAGEMENT

The City, with assistance from consultants, oversees the implementation and administration of the Master Plan Fee Program, consistent with the requirements of the Mitigation Fee Act. For all Master Plan fees, a Program Management Fee is added to fund the costs of City's management and ongoing fee program administration, collection, and reporting. This includes costs associated with City staff and consultant time, studies, and administration to support the program. Industry standard ranges from three to six percent (3-6%) for the administrative component of a development fee program. The City has historically collected five percent (5%) for administrative costs on each fee, which was previously included as a soft cost mark-up. Administratively, the five percent (5%) charge per fee was difficult to account for throughout the numerous fee funds.

Thus, a separate Program Management Fee was created and will be collected in a separate fund for ease of administration. Additional information regarding the Program Management Fee can be found in the Program Management Impact Fee Nexus Study, prepared by Harris & Associates (March 2024). The administrative functions of the Program Management Fund include, but is not limited to, the following:

- Annual fee adjustments
- Annual fee reporting
- Additional fee reporting every five years
- Application and tracking of fee credits and reimbursements

- Posting of nexus studies and fee schedules on the City's website
- Periodic nexus study updates
- Staff and consultant time related to fee preparation, collection, tracking, and administration

CREDITS AND REIMBURSEMENT POLICIES

Fee credits and reimbursements may be allowed for developer-constructed facilities in compliance with Title 13 of the Tracy Municipal code and other applicable polices. Credits and reimbursements shall be calculated specifically for each project as applicable. It should be noted that per Section 13.08.020 (e) of the Tracy Municipal Code "The Subdivider shall not be entitled to any credit for program implementation or contingencies."

PROGRAMMING REVENUES WITH THE CIP

The City should maintain its Capital Improvement Program (CIP) to adequately plan for future infrastructure needs. The CIP should commit all projected fee revenues and fund balances to specific projects that are necessary to serve growth. The CIP provides documentation necessary for the City to hold funds in a project account for longer than five years if necessary to collect sufficient funds to complete a project. This report outlines the projects that are to be funded with this fee program and forms the basis of the CIP, as identified in **Table 2-1** above.

FEE REPORTING

Assembly Bill No. 1483, which became effective January 1, 2020, requires that public agencies make the following information available on their website. The following information must be provided:

1. A current schedule of fees, exactions, and affordability requirements imposed by the city, county, or special district, including any dependent special districts, of the city or county applicable to a proposed housing development project, which shall be presented in a manner that clearly identifies the fees, exactions, and affordability requirements that apply to each parcel.
2. All zoning ordinances and development standards, which shall specify the zoning, design, and development standards that apply to each parcel.
3. The list of information required to be compiled pursuant to Section 65940.
4. The current and five previous annual fee reports or the current and five previous annual financial reports, which were required pursuant to AB 1600.
5. An archive of impact fee nexus studies, cost of service studies, or equivalent, conducted by the city, county, or special district on or after January 1, 2018.

Any updates to the above information must be available within 30 days.

ACCESSORY DWELLING UNITS

An accessory dwelling unit (ADU) is a second unit that is attached or detached from a single-family home. In accordance with Assembly Bill No. 881 approved on October 9, 2019, TIMP fees will not be charged for an ADU that is less than 750 square feet. For an ADU that is 750 square feet or larger, the ADU will be charged proportionately in relation to the square footage of the primary dwelling unit. Since the TIMP residential fees are now being charged on a square footage basis, ADU fees will be calculated by multiplying the TIMP Single Family Residential fee by the ADU's square footage.

SPECIALIZED DEVELOPMENT PROJECTS

The fees in this report may not apply to specialized development projects such as golf courses, cemeteries, sports stadium, truck lots, or other specialized land uses. For specialized development projects the City will review the development's impacts to determine the applicable fees. The fee rates presented in this Nexus Study may be reduced, exempted, or waived under certain circumstances as determined by the City. Any exemption or reduction in fees will be based on the City's independent analysis and review of the subject property. In addition, specialized land uses may be calculated utilizing the cost per EDU applied to the number of EDUs of the specialized land use as determined by the City's independent analysis

Some developments may include more than one land use type. In these cases, the fee is calculated separately for each land use. The City has the discretion to impose the fees based on the specific aspects of a proposed development regardless of zoning. The fee imposed should be based on the land use type that most closely represents the impacts of the development.

Section 4 APPENDIX: TRACY CITYWIDE PUBLIC FACILITIES MASTER PLAN UPDATE (DECEMBER 2023)

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CITY OF TRACY

CITYWIDE PUBLIC FACILITIES MASTER PLAN UPDATE

December 2023

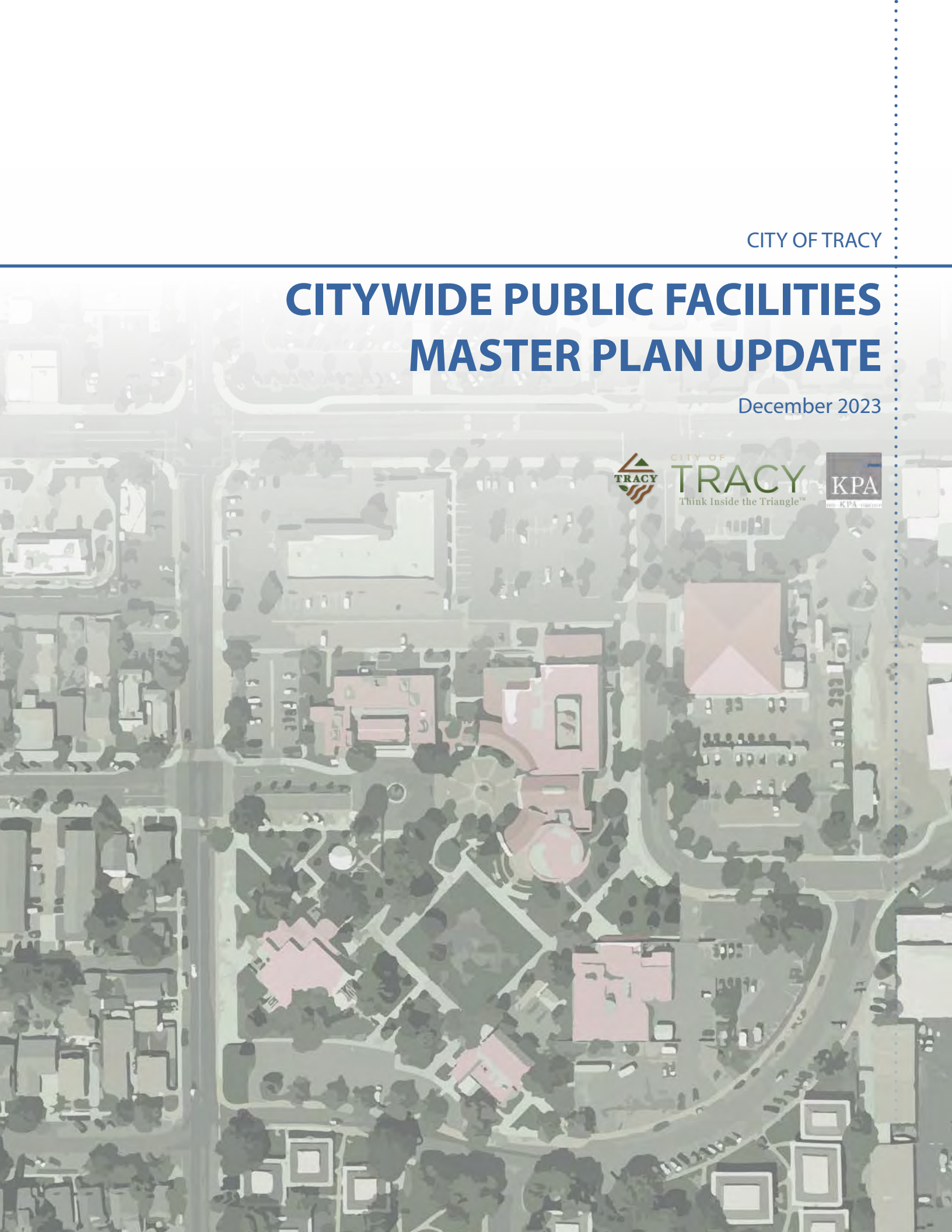


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Executive Summary

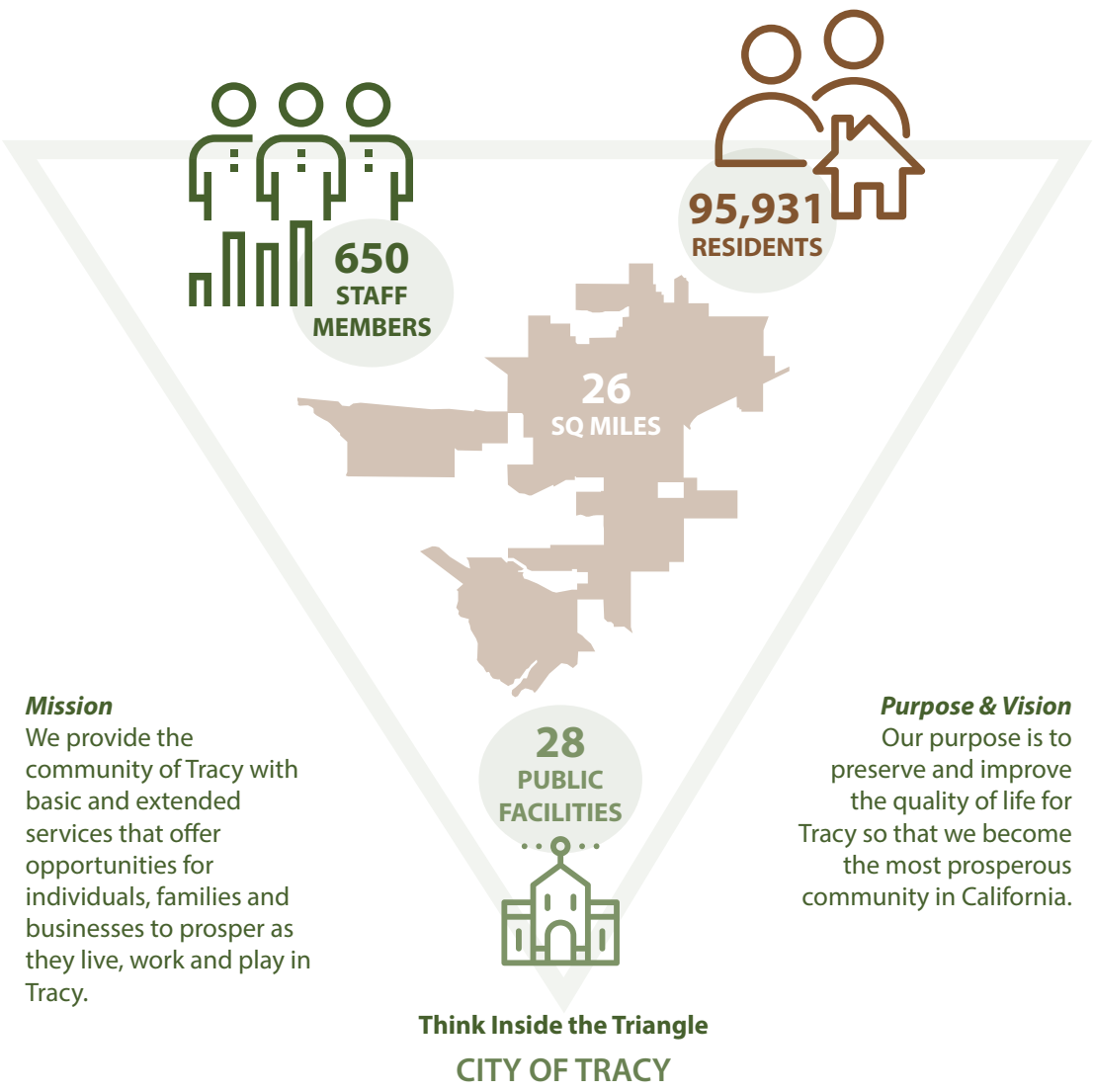
The City of Tracy (City) is updating all infrastructure master plans including an update to the 2013 Citywide Public Facilities Master Plan (CPFMP) to align current community objectives for public facilities with the City's overall planning goals and Capital Improvement expenditures. The Plan update builds upon the original goal of portraying clear objectives for public facilities and establishing a future vision and achievement strategies to implement improvements to public facilities. The information obtained from the Plan update as well as concepts presented within can act as a planning guide for the City of Tracy. The Plan will help guide decision-makers and inform the public about the City's future public facilities goals. The plan reaches 30 years into the future. Planning and expenditures focus on the next 20 years. Future updates to the Plan are recommended every five to ten years to ensure alignment of public facility goals and improvement expenditures with City of Tracy operational and community needs. The study area for this Plan update is the City of Tracy's 42-square mile Sphere of Influence (Figure below). Facilities and infrastructure operations of similar sized cities were studied for comparative efforts to Tracy's operations.

This Plan serves to inform community members of the benefits that focused expenditure on needed Capital Improvements and deferred maintenance solutions would bring to the City of Tracy. The Plan works to address short-term and long-term City goals and objectives for facility investments and future improvements. Assessments of current working conditions and needs of various City departments were compiled. The Facility Condition Assessments (FCA) provide documentation of current conditions of City-owned facilities that may be used for future planning. The existing City facilities will be able to serve the City for the next five to ten years or more, but without addressing deferred maintenance needs the condition of City-owned facilities will deteriorate resulting in increased repair and replacement costs. This Plan proposes large expenditure on prioritized projects from now until 2040. Current inflation trends indicate possible construction cost rise and the expense the City faces will only increase as time passes.

Additional recreational, community and event space is required to serve the expanding number of City residents. Employees require increased efficiency in work operations including better collaborative opportunities. Public and conferencing space is needed and desired. Recommendations outlined in this Plan allows the City's public facility needs to be realized. The proposed projects presented as solutions provide a future for the City that aligns with current community growth.



City of Tracy Sphere of Influence and Facility Map



Current conditions and needs related to City public facilities have been detailed throughout the CPFMP update. Focus is on maintaining public infrastructure and improving efficiencies. These major components include planning and review of staff and public spaces (Space Planning), conditions of existing facility components and repair needs (Facility Assessments and Deferred Maintenance Projects), and major capital expenditures that would improve the state of public facilities (CIP Projects). Planning, assessment and surveying processes related to these major components took into account Tracy's expanding Sphere of Influence with the focus of serving residents equally and interdependent of locations of residences within City limits.

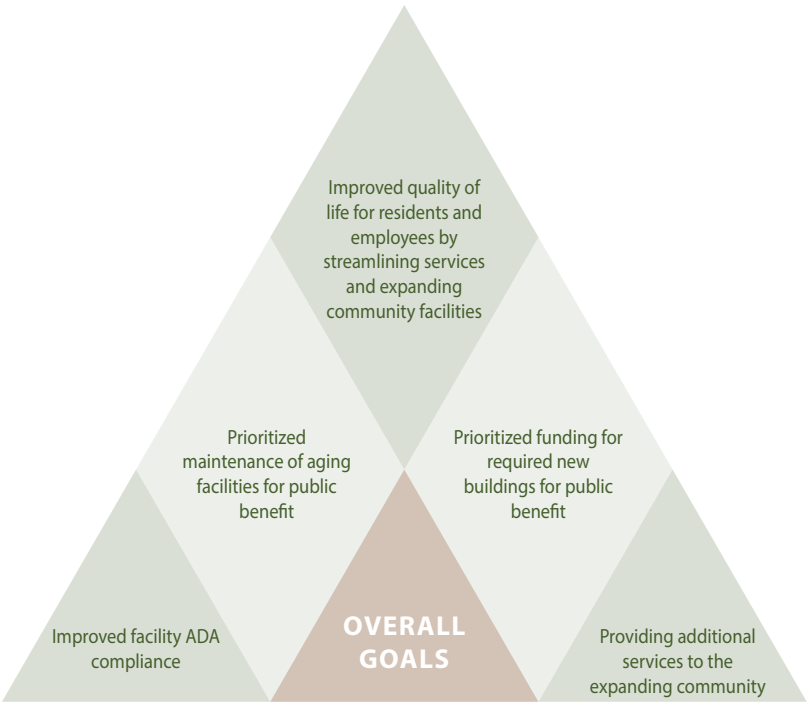
The updated Public Facilities Master Plan will be used as a guideline document for the improvement of City facilities. Future public facilities recommended to be constructed are shown in Projects, Section 4, and include a new Multi-Generational Recreational Center, Library, Bus Maintenance and Transit Facility, Aquatics Center and auxiliary Operations and Utilities Facility. The CPFMP also identifies changes to existing public facilities that will allow for improved work efficiencies and level of public service. The CPFMP works to identify current deficiencies related to existing public facilities and projects recommended to improve these facilities. Future City goals and direction will require modifications to the Public Facilities Master Plan as it is presented.

Order-of-magnitude cost estimates have been provided for Deferred Maintenance projects and Capital Improvement projects.

CPFMP Goals

The City seeks to align City facilities planning to growing needs of the community, improve resident services and improve work efficiencies. A 6-month analysis of the 28 major City facilities and airport facilities led to recommending specific projects to meet current and future needs. Analysis included physical facility condition inspections, discussions with City departments and staff and review of existing planning reports and documentation. The process involved identification of areas of facilities the City should renovate and new facilities that should be considered to align with future City growth. Co-location of departments and employees was identified. Cost projections for both Deferred Maintenance projects were estimated and project definition summaries prepared. Construction of new facilities was identified including locations and uses for new facilities and potential time frames for construction.

The information and concepts presented in the CPFMP are used to guide local decisions regarding public uses of land and the provision of public facilities and services. The CPFMP is long-range in its view and is intended to guide development in the City through build-out.

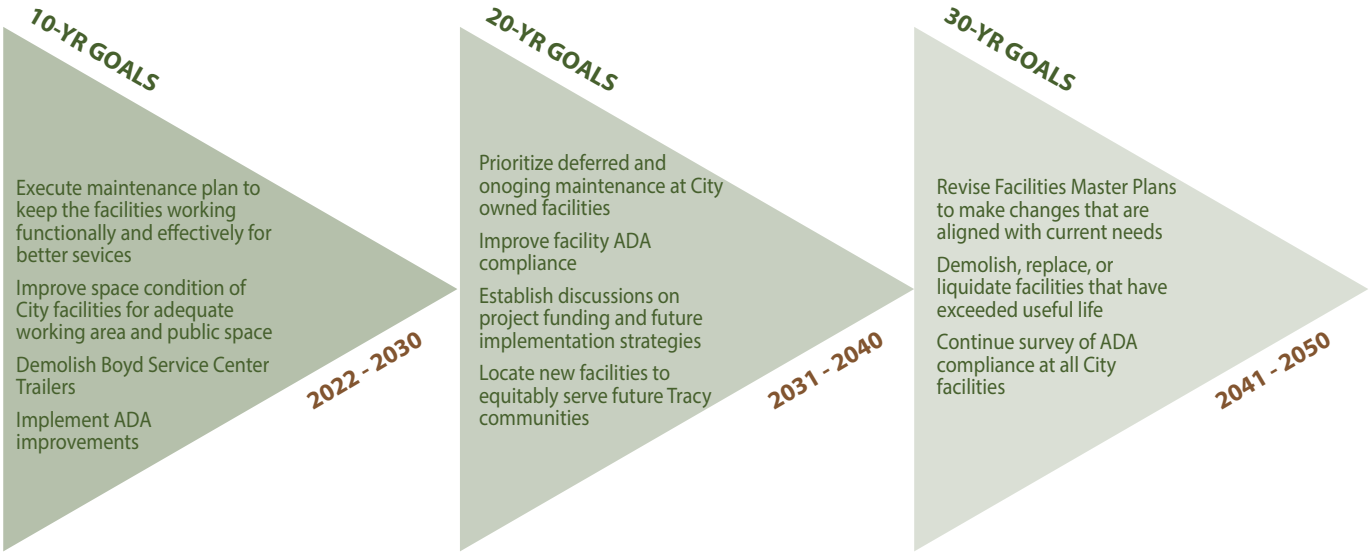


CPFMP Overall Goals

Scope of CPFMP

The CPFMP outlines future expenditure needed through Build-out. Public and economic benefits may be realized as planning is implemented to serve the expanding City footprint. The CPFMP was formulated through analysis of existing City facilities, department operations and needs, and improving public services based on needs related to growth.

Included in the CPFMP are City Hall, Support Services offices, Community Center, Senior Center, Parks & Community Services offices, Boyd Service Center, Library and other City facilities. Future facilities for Police, Fire, Parks and Utilities are covered in detail in separate master plans.



Breakdown of City of Tracy Goals

Findings & Methods

Findings - Facilities

- Highlighted Capital expenditure needs include additional community and recreational facilities and additional maintenance facilities.
- Additional meeting and conference spaces for both public meetings and internal staff discussions would benefit operations at most public facilities.
- Existing City facilities are in good condition for building age and require varying maintenance improvements. An ongoing maintenance program is recommended to maintain facility longevity.
- Workplace efficiency could be improved by reorganization of some departments and divisions into new or different buildings.
- Organized storage spaces will allow for more efficient access to data and particular historical documents.

Findings - Staffing and Space Utilization

In general, the City's 650 staff located in public facilities are organized in an efficient manner.

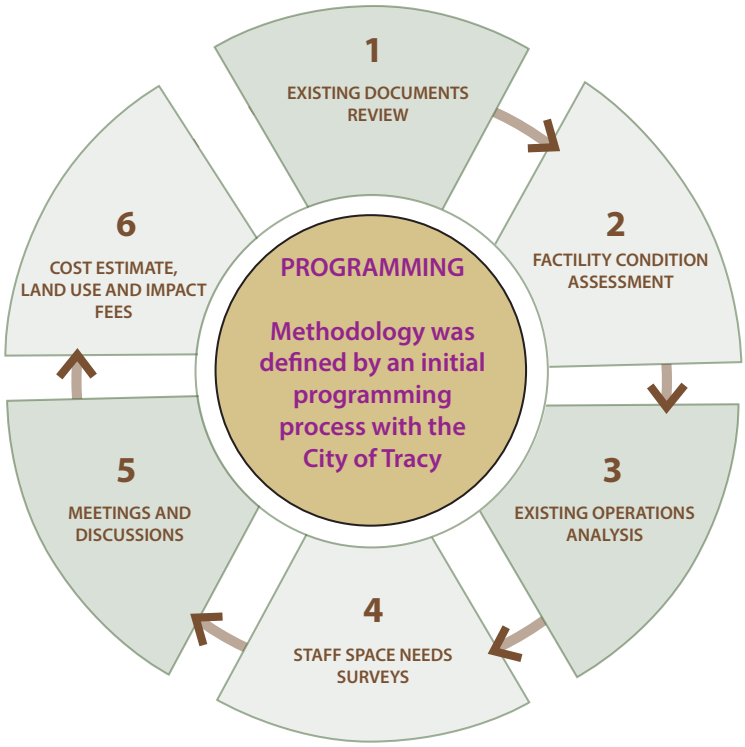
Most inefficiencies are related to space limitations at particular locations:

- IS has some storage and workspace located in the Police Department dispatch center rather than contiguous with its main operations.
- Much of the City's bulk storage needs are met by shipping containers at the Boyd Service Center rather than an appropriate warehouse facility.
- Engineering Services is divided between two adjacent buildings, adding to administrative burdens, reducing the effectiveness of using shared resources and counterproductive to the City's centralized approach to providing development services.
- Parks & Recreation service is divided among three facilities and the existing size of the spaces doesn't meet operational needs.
- Transit operations require an expanded vehicle maintenance and parking facility.
- The expanding Operations and Utilities service area requires an auxiliary facility at the southwest portion of the City.

Process / Methodology

The CPFMP update process involved many components, including:

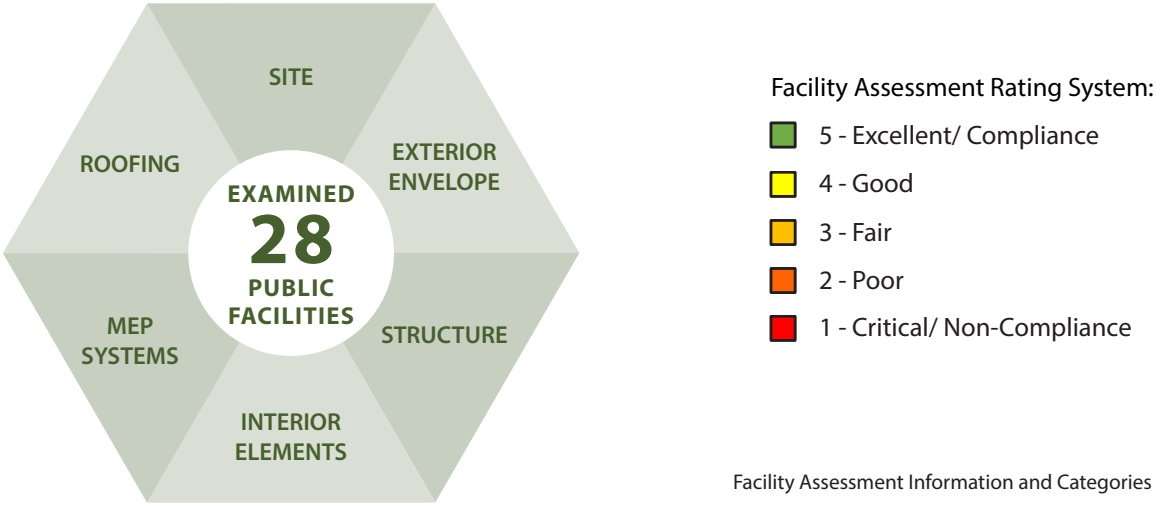
- Existing Documents Review
- Facility Condition Assessments
- Existing Operations Analysis
- Staff Space Needs Surveys
- Meetings and Discussions
- Cost Estimating
- Land Use and Impact Fees



Process and Methodology

Facility Condition Assessments

The facility condition assessment process involved analysis of 28 City of Tracy owned public facilities and discussions with maintenance staff for each of the assessed buildings. The assessment team visited each facility and documented the physical condition of building elements including site, exterior envelope, structure, interior elements, visual ADA compliance and mechanical, electrical and plumbing (MEP) systems. Building maintenance staff accompanied the assessment team during these observations and provided further information about specific building elements including those that could not be physically observed by the project team. Assessment reports for each of the facilities were prepared. A rating system was used to outline condition of each building element on a 5-point scale, with "1" designated to a component in critical condition and "5" designated to a component in excellent condition or newly installed. Each assessment report includes a building description supplying general building information such as year built and square footage (SF). A condition checklist outlining the ratings of assessed elements is included along with a condition summary of findings, a summary of recommendations and impacts of recommendations. A selection of photos taken during the assessment process are included in each assessment report.



Facility Assessment Information and Categories

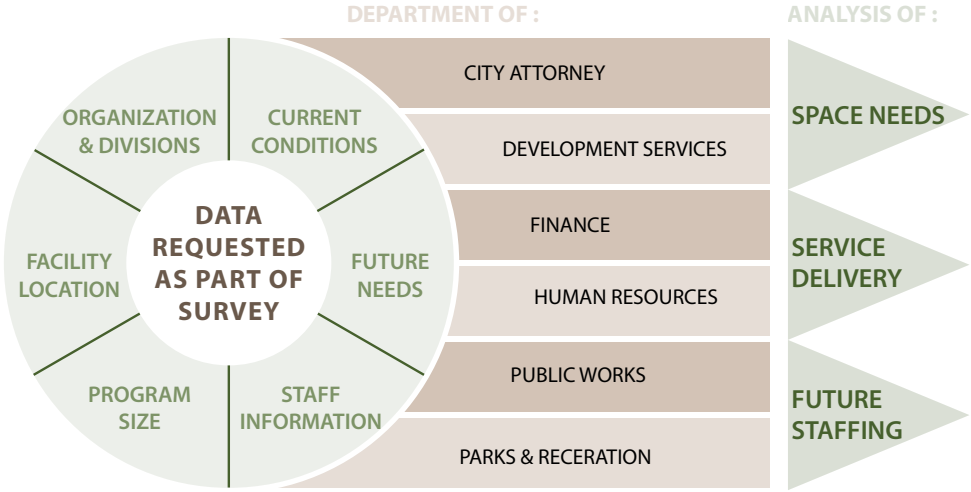
Existing Documents Review

Existing data pertaining to city operations and previous planning efforts were reviewed in order to obtain a better understanding of current facilities, department operations and required improvements. A selection of data, documents and studies reviewed includes:

- Citywide Public Facilities Master Plan, 2013
- Boyd Service Center Master Plan, 2008
- City of Tracy - Adopted Financial Plan
- City of Tracy - Land Use Information
- City of Tracy - Infrastructure Master Plans Development Areas Map
- City of Tracy - General Planning GIS data
- City of Tracy - Aquatic Center Concept Diagram
- City of Tracy - Construction plans of City facilities
- City of Tracy - Planned project programming data
- City of Tracy - Position Control Roster
- City of Tracy - Undeveloped Parcels Appraisals Report
- Staff Survey Responses

Staff Surveys

Staff surveys were conducted to obtain existing data and establish individual department projected growth needs. The survey responses helped to guide planning solutions. The staff surveys were conducted using questionnaires containing both multiple choice and open-ended questions for each department. These questions addressed specific aspects including: organization and divisions, staff information, facility locations and sizes, program sizes, current conditions and future needs. The completed department questionnaires were analyzed and summarized. Recommendations were developed for each department based on the surveys and interviews with administrative staff and department heads. Meetings were held with some department heads and section managers to clarify survey responses and department needs.



Staff Survey Process

Existing Operations and Planning Analysis

Multiple meetings with City leadership from Administration, Finance, Operations and Utilities (previously Public Works) and Development & Engineering Services were conducted to gain knowledge of existing City operation conditions and future needs. From the meetings and surveys, the CPFMP establishes department-by department programmatic needs, basing projections on the staffing of other cities that are geographically and demographically similar to the community now through Build-out. This comparison approach substantiates the space required for City operations by making adjustments on the basis of statistical procedures to enhance predictive accuracy.

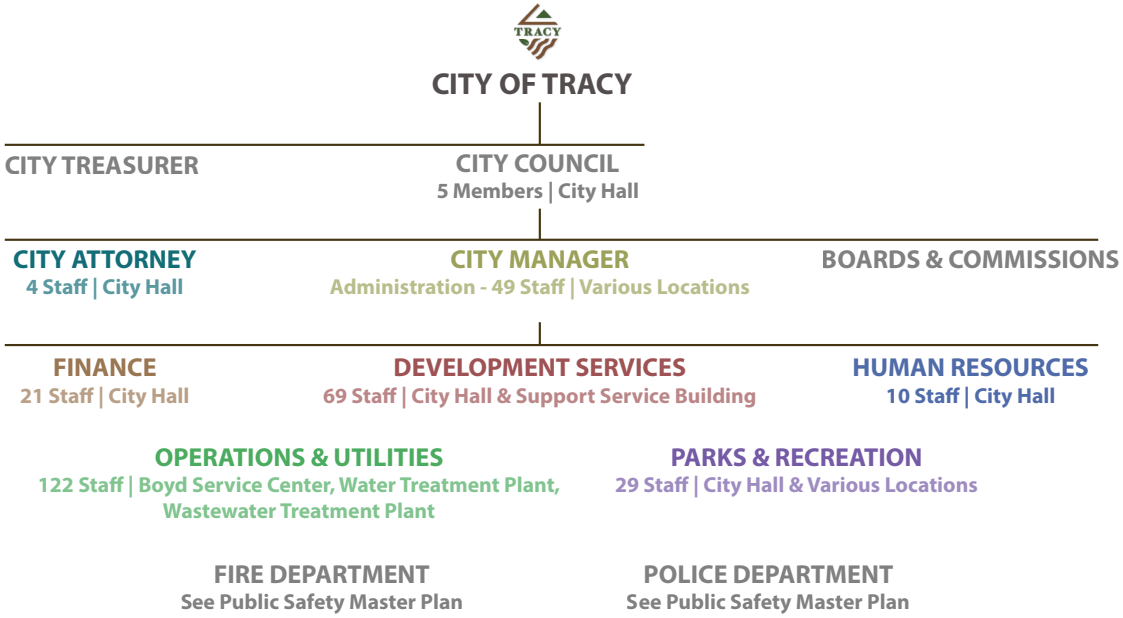
Note:

Operations and Utilities

(Previously separate departments of Public Works Department & Utility Department)

Effective July 2022

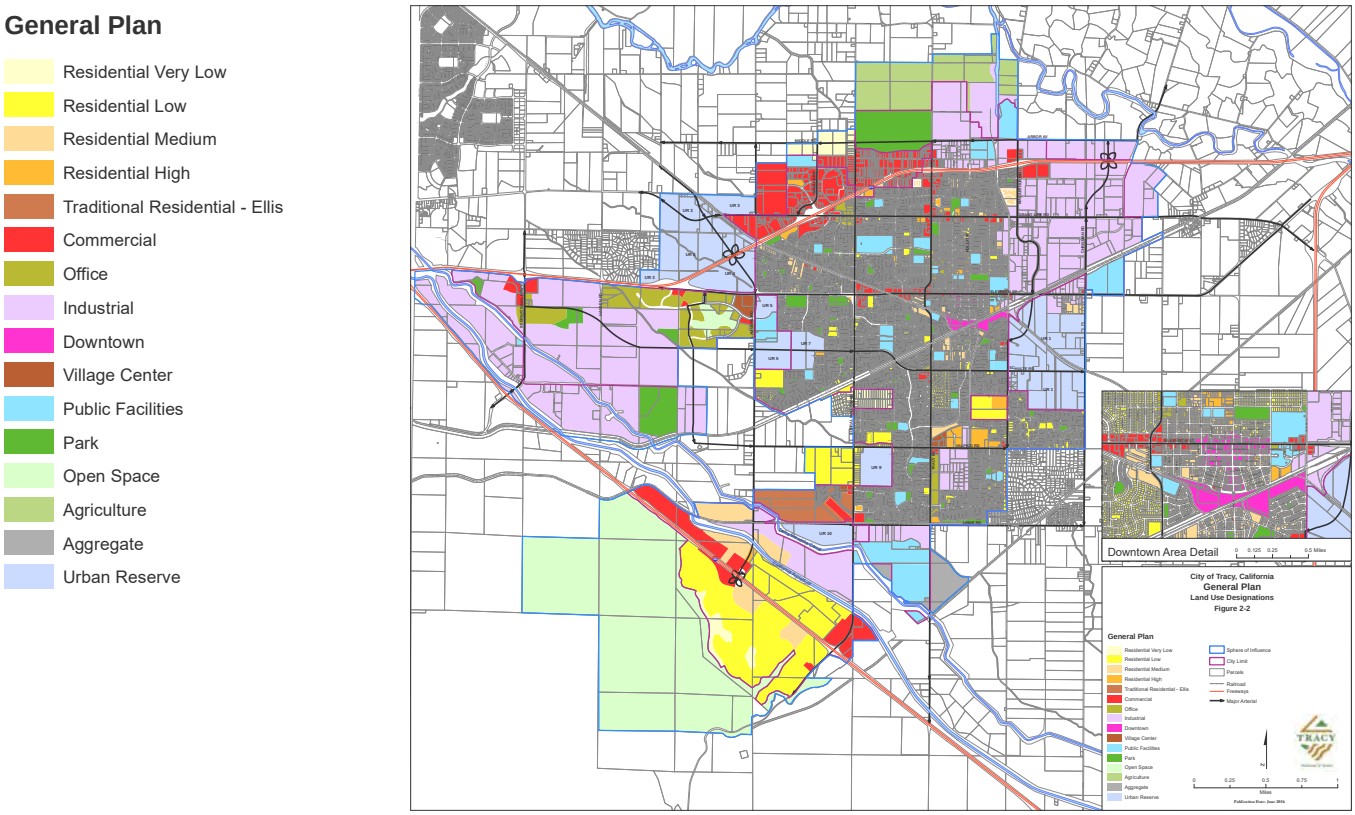
* Utilities Division was not considered as part of Public Facilities Master Plan Update



2023 Department Staffing Breakdown

Land Use and Impact Fees

An analysis of the impact fees on other City construction necessary to help cover costs of the proposed new public facility construction took place as part of the CPFMP update process. The City created a series of land use assumptions for existing planning areas as well as future planning areas within the Tracy Sphere of Influence. Throughout all of the planning areas, the City anticipates new single family residential units and multifamily units; acres of industrial, office and retail development; and other commercial development will be added to the City over the next 10 years and beyond. The map below designates 2021 land use type by areas within the City.



2021 Land Use Type by Area within Tracy

Meetings and Discussions

Meetings with City employees and stakeholders, including Department heads, were conducted throughout the Citywide Public Facility Master Plan update process. The solutions outlined in the CPFMP have been discussed with City Departments and other administrative staff. Department heads reviewed the progress and contributed input and comments during discussions and progress meetings attended. The Departments section of the report explains various departments that make up City staffing and highlights some of the physical and space needs for each of the City's departments.

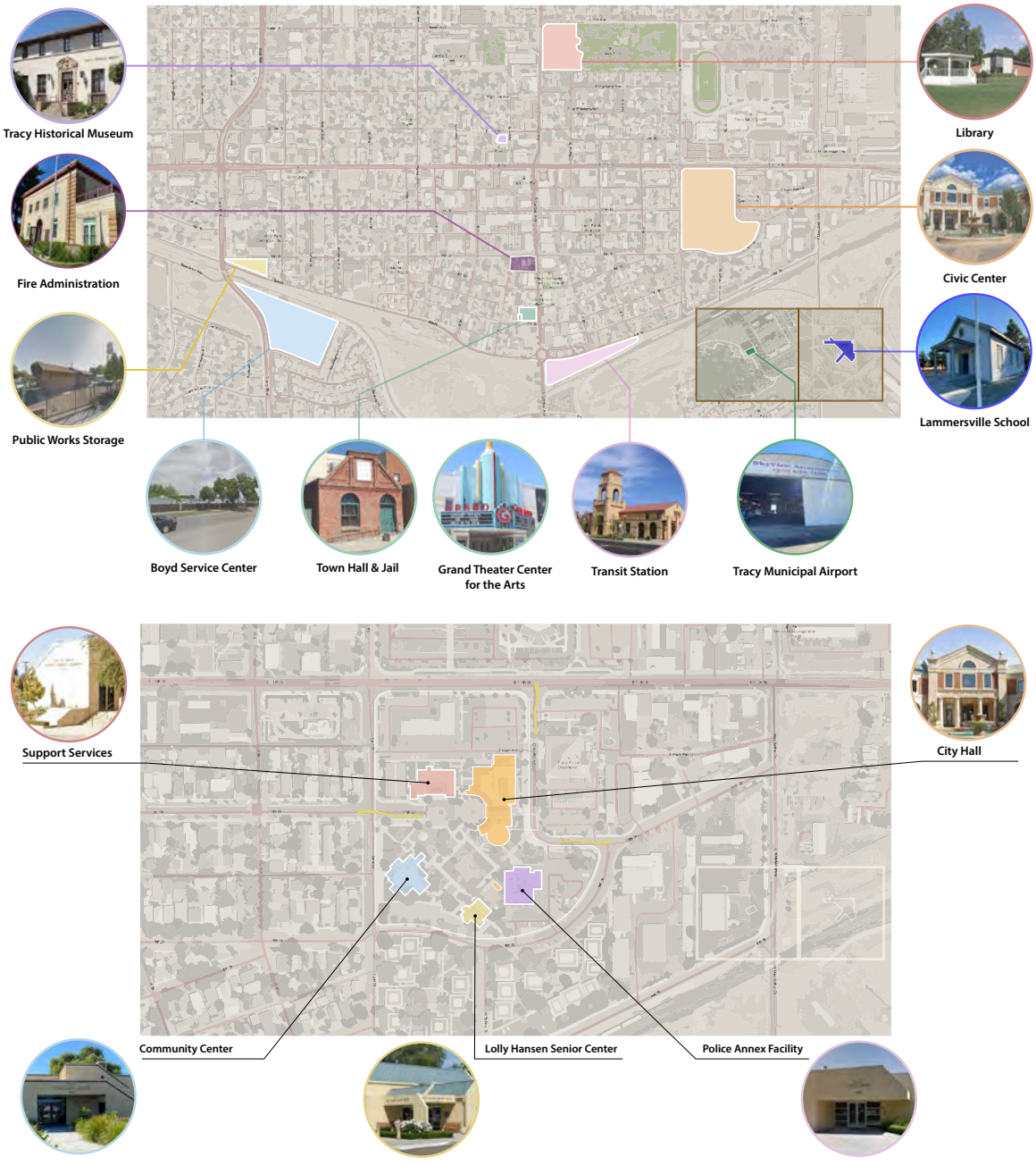
Recommendations

It is recommended that the City of Tracy invest a significant amount of resources through Build-out into new public facilities Capital Improvement Projects. Recommendations outlined on the following pages are built upon the City's general goals of co-location of like services and quality of public services improvement. City facilities are primarily located in the central and eastern portions of the City and additional facilities built along the western corridor will provide evenly distributed access to services for residents in those areas. Existing infrastructure must also be maintained. It is recommended to perform many deferred maintenance projects on existing facilities and infrastructure. Costs for new facilities, deferred maintenance, and existing facilities modernizations are explained on the following pages.

Facilities & Projects Overview

The City of Tracy serves more than 90,000 residents over 26 square miles. Services provided to the public include Public Safety services, Public Works including roadways and residential utilities, parks and recreation services, transportation services, and library facilities among various other municipal services. The City government provides these services with the help of over 650 staff members and from 28 owned facilities. The majority of City facilities services are located on the east side of Tracy, near the downtown and Civic Complex area. City services are centrally located to most of the City's population. Additional development on the western side of the City will need expanded City presence.

Facilities owned by the City are generally in fair condition. Current facilities serve the population well but differing levels of deterioration at City facilities are present due to aging construction. Employees from the same department would benefit from colocation of collaborating individuals into the same facilities. Workspace efficiencies may increase or otherwise see improvement due to colocation. Access to services for the public will be improved and organized with colocation efforts. Tracy continues to invest in a wide range of projects to provide ADA compliant facilities and services at various locations.



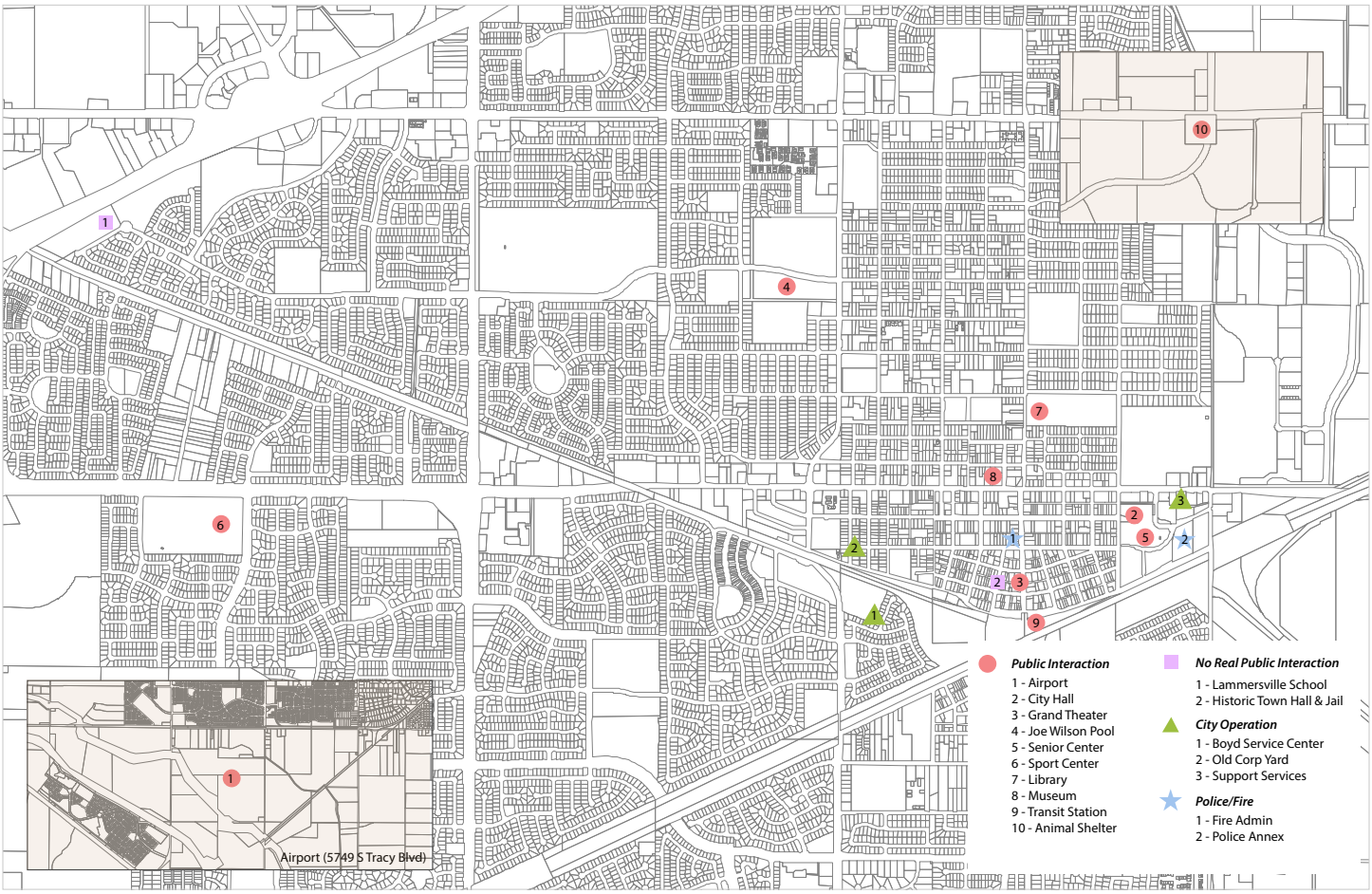
Civic Center Facilities and Locations of other City Facilities

Evaluation of Existing Facilities

Existing public facilities are in fair to good condition overall. The City has some buildings that are approaching the end of their useful service life including airport facilities and Operations and Utilities shops. Most other public facilities contain remaining service life with deferred maintenance recommendations implemented. Employee distribution is inefficient for public service operations and is no longer efficient in terms of space use, expended efforts related to collaboration or energy use. Specific details related to facility condition are listed in each facility's individual assessment report. A general overview of items requiring improvement include the following:

- Some interior finishes and furnishings show evidence of their age and wear.
- Mechanical, electrical and plumbing (MEP) updates are required at some facilities.
- Most parking lots require resurfacing and new striping paint.
- Minor structural cracking is present at some facilities.

Residential development is expanding on the west side of Tracy. New residents desire access to all public facilities and services that are provided to existing residents. All owned City buildings require moderate improvements to maintain their value, operation and meet continuing public needs.



Locations of Facilities Assessed













Examples of common deficiencies observed:

Site

- Deteriorated parking paving and/or striping
- Areas lacking landscape upkeep
- Accessible Path of Travel deficiencies
- Cracked concrete sidewalks, pathways and curbing

Exterior Envelope

- Rotting, separating or otherwise deteriorating siding
- Dirty or broken exterior light fixtures
- Single pane windows are common, some with broken sliders or seals that allow for water and air intrusion
- Door seals nonexistent or deteriorated
- Failing exterior paint system
- Conduits that are rusted or otherwise degraded

Roof

- Drainage problems including undersized outlets, pooling water and rusted drain covers
- Roof rot and surface bubbling
- Plywood decking that deflects considerably
- Materials requiring abatement are present in the construction of some roof elements
- Lack of safety railings

Structure

- Cracks in drywall
- Warped wood

Interior Elements

- Carpet and other flooring that is discolored and past useful service life
- Scuffs and paint chipping on walls
- Energy intensive lighting fixtures
- Discolored or stained ceiling tiles
- Undersized work areas and inadequate storage space
- Outdated restroom finishes

MEP Systems

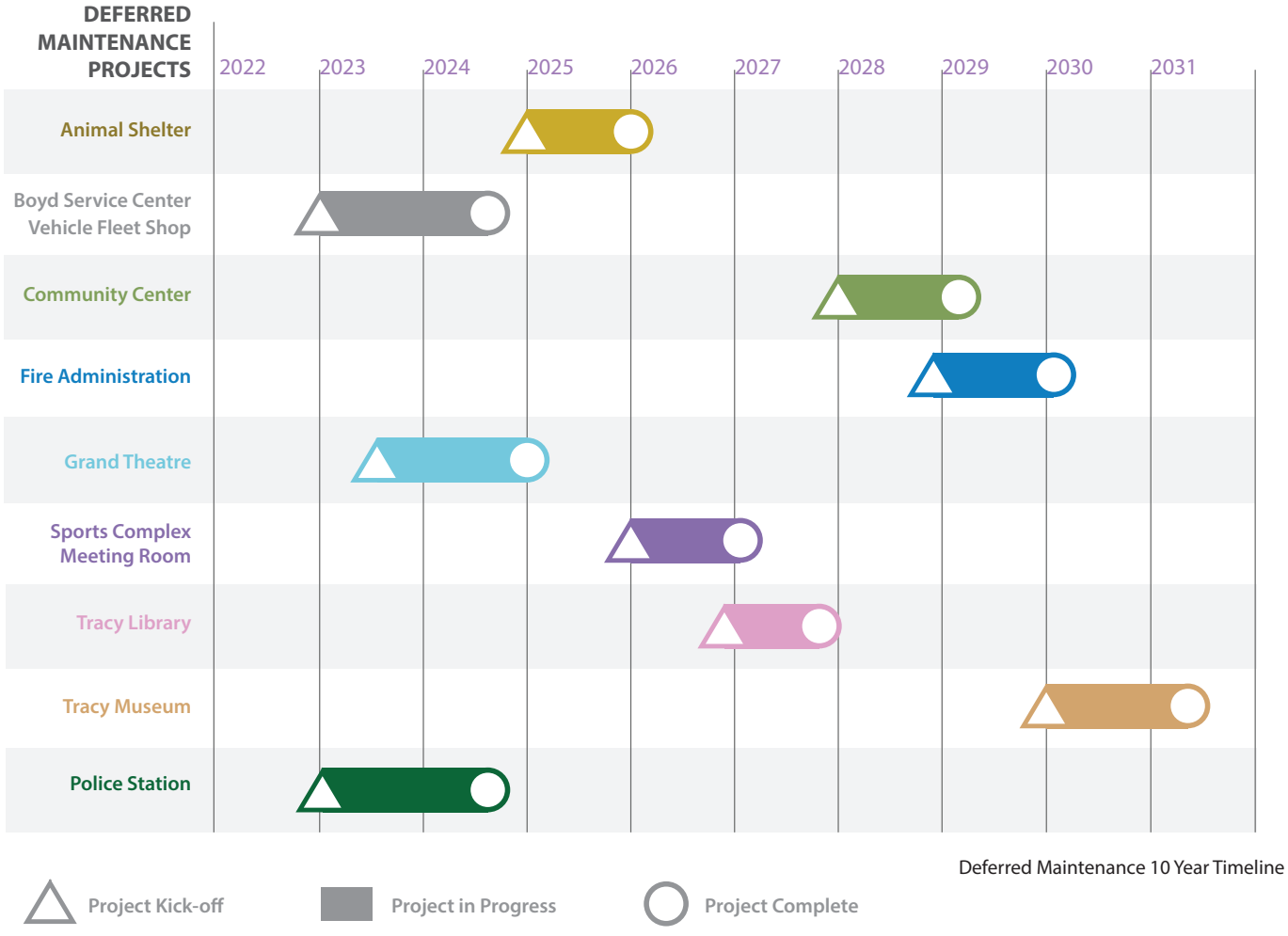
- Equipment components that have been off-line for an extended period of time
- Electrical service deficiencies
- Pneumatic HVAC systems
- Boilers and other equipment original to building construction
- Elevator modernizations required
- Undersized equipment for facility needs

Deferred Maintenance

A total investment across owned assets of $28.4 million is estimated to rectify deferred maintenance needs at public facilities. The facilities outlined below are recommended to be prioritized for deferred maintenance. An investment of $16.0 million will rectify deferred maintenance at the below facilities outlined for the initial Phase 1. This does not include any space renovation projects. An additional investment of $12.4 million in 2022 dollars will rectify the remainder of deferred maintenance needs at other public facilities planned for years 11-30, Phases 2 and 3. This expenditure should be supplemented with a detailed maintenance plan for funding and repair strategies for future deterioration. Additional investments related to accessibility compliance require future consideration. The City should continue to work towards accessibility compliance in a reasonable and timely manner.

No public safety concerns were identified as part of recommended building improvements. The City should renovate approximately 60% of the current owned facility inventory. The City should continue to maintain the other 40% of existing facilities.

A timeline for deferred maintenance projects recommended for the next 10 years is shown below.



Deferred Maintenance 10 Year Timeline

Existing Facilities and Deferred Maintenance



City Hall - City Hall requires interior renovations to better house city employees and serve the public. Space renovations focus on the public lobby area and spaces on the second level shared by departments including Development Services and the City Manager's Office. Deferred maintenance projects include HVAC equipment replacement; site improvements that tie into recommendations for other facilities at the Civic Center complex; foundation investigation; and minor ADA compliance projects. (See Page 29 for details.)



Support Services - Recommend replacement with a larger, multi-story administrative facility due to space needs for City of Tracy operations. Deferred maintenance projects at Support Services and the Support Services Trailer include: Interior renovations and restroom modernizations; mechanical, electrical and plumbing (MEP) improvements; site maintenance to pavement markings and landscape walls; emergency generator reconditioning; exterior improvements and roof maintenance at the trailer facility; and minor ADA compliance projects. (See Page 40 for details.)



Community Center - Deferred maintenance projects at the Community Center include: wall and door maintenance, roof improvements, site improvements, striping repair, landscaping, parking lot improvements, interior renovations and MEP maintenance and ADA compliance projects. The existing Community Center is recommended to undergo an expansion as part of a future Capital project for increased community space. (See Page 52 for details.)



Senior Center - The existing Senior Center is recommended to undergo an expansion as part of a future Capital project. Deferred maintenance projects at the Senior Center include site improvements, exterior maintenance, and light ADA projects. (See Page 64 for details.)



Police Annex - The existing Police Annex is not recommended to have workstations or internal spaces expanded but may be used as swing space for different departments upon implementation of the Public Facilities, Public Safety and Parks & Recreation Master Plans. Deferred maintenance projects at the Police Annex include: exterior renovations, interior renovations, MEP maintenance including boiler replacement, parking improvements, and ADA projects. (See Page 75 for details.)



Fire Administration - Space layout changes to the interior of the Fire Administration building may be proposed under the concurrent Public Safety Master Plan. Deferred maintenance projects at the Fire Administration include: painting and cleaning of exterior envelope, interior renovations, site maintenance, new boiler system and moderate ADA improvements. (See Page 87 for details.)



Transit Station - Space layout changes to the interior of the Transit Station are being provided under an ongoing project. Deferred maintenance projects at the Transit Station include site renovations and cleaning, exterior painting and door hardware, roofing improvements, water piping maintenance and ADA improvements to the site and restrooms. The Transit Center's interior renovation project is currently underway. (See Page 99 for details.)



Animal Shelter - An expansion of the Animal Shelter is proposed under the concurrent Public Safety Master Plan. Deferred maintenance projects at the Animal Shelter include; exterior painting, site resurfacing and landscape structure maintenance, roof access, interior renovations and minor ADA projects. The existing Animal Shelter is recommended to be renovated concurrently with the expansion. (See Page 110 for details.)



Tracy Library - The existing Tracy Library is not recommended for expansion. Deferred maintenance projects at the Tracy Library include; gutter and downspout maintenance, tile flooring replacement, site resurfacing, HVAC equipment replacement, and light arrangement of interior furniture to meet ADA. (See Page 121 for details.)



Joe Wilson Pool - The existing Joe Wilson Pool is not recommended to have workstations or internal spaces expanded. Deferred maintenance projects at the Joe Wilson Pool include; exterior maintenance, kitchen tile flooring replacement, locker room surfaces maintenance, and ADA compliance projects. (See Page 132 for details.)



Sports Complex Meeting room - Deferred maintenance projects at the Sports Complex Meeting Room include; exterior and door maintenance, interior renovations, MEP maintenance, site repavement, and ADA improvements. The existing Sports Complex is not recommended to have workstations or internal spaces expanded. (See Page 144 for details.)



Tracy Historical Museum - Deferred maintenance projects at the Tracy Historical Museum include; site improvements, exterior renovations, roof maintenance, interior renovations, leakage repair, and ADA improvements. The existing Tracy Historical Museum is not recommended to have workstations or internal spaces expanded. (See Page 155 for details.)



Grand Theatre Center for the Arts - Deferred maintenance projects at the Grand Theatre Center for the Arts include; structural investigation, interior renovations, new fire sprinklers, site and exterior renovations, and ADA improvements. The existing Grand Theatre is not recommended to have workstations or internal spaces expanded. (See Page 166 for details.)



Lammersville School - Deferred maintenance projects at the Lammersville School include; providing a parking lot, deteriorated wood renovations at exterior and site, the addition of handrails and ADA improvements. The existing Lammersville School is not recommended to have workstations or internal spaces expanded. (See Page 178 for details.)



Tracy Town Hall & Jail - Deferred maintenance projects at the Tracy Town Hall & Jail include structural investigation, site painting, exterior renovations, interior renovations, and ADA improvements. A study of the building condition is underway. (See Page 189 for details.)



Old Corp Yard - Deferred maintenance projects at the Old Corp Yard include; site repavement, roofing improvements and interior renovations. The Old Corp Yard is not recommended to have workstations or internal spaces expanded. (See Page 200 for details)



Boyd Service Center (Overall) - The Boyd Service Center is recommended to be expanded as part of a separate Capital project. Deferred maintenance projects at the Boyd Service Center include; site repavement and other improvements, shops renovations and modernizations.



Boyd Service Center (Administration - Building A) - Deferred maintenance projects at the Administration Building include; site repavement and other improvements, interior renovations and modernizations. The Administration Building at Boyd is recommended to be expanded as a Capital project. (See Page 211 for details.)



Boyd Service Center (Maintenance Shops - Building B) - The Renovated Maintenance Shops at Boyd are recommended to be supplemented with additional shops. Deferred maintenance projects at the renovated Maintenance Shops include; perimeter fencing improvements, site repavement and other improvements and light ADA renovations. (See Page 223 for details.)



Boyd Service Center (Maintenance Shops - Building C) - Deferred maintenance projects at the unrenovated Maintenance Shops include; exterior lighting fixtures and other renovations, interior renovations, leakage repair, site repavement and other improvements, equipment housings and ADA improvements. The Unrenovated Maintenance Shops at Boyd are recommended to be supplemented with additional shops. (See Page 233 for details.)



Boyd Service Center (Storage Warehouse - Building D) - Deferred maintenance projects at the Storage Warehouse include; exterior lighting fixtures, exterior renovations, site improvements, gutters and downspouts and ADA improvements related to interior stairs. The Storage Warehouse at Boyd is recommended to be supplemented with additional shops. (See Page 244 for details.)



Boyd Service Center (Fleet Shop - Building E) - Deferred maintenance projects at the Fleet Shop include; rooftop ventilation, structure repair, HVAC and exhaust improvements, interior renovations, site paving improvements, landscaping, exterior lighting and doors, and ADA improvements. The Fleet Shop at Boyd is recommended to be supplemented with additional shops. (See Page 255 for details.)

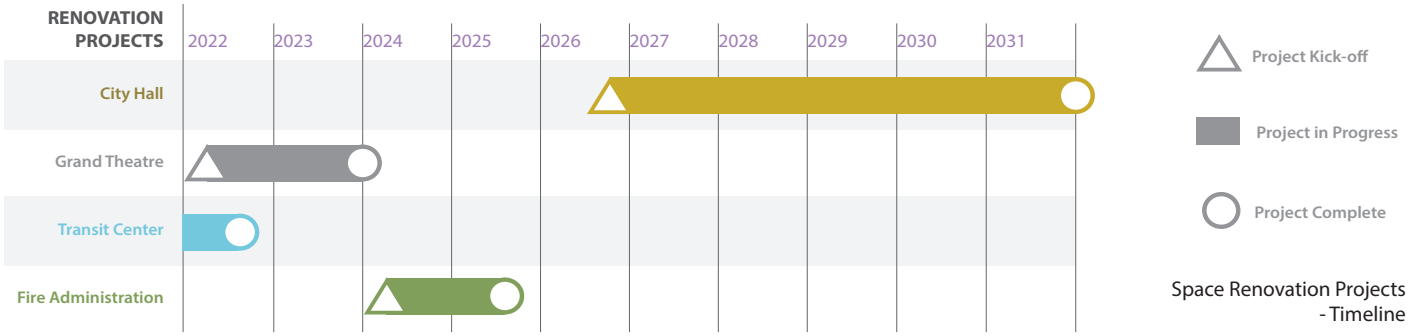
FACILITY	SITE	EXTERIOR	STRUCTURE	INTERIOR	MEP	CONDITION RATING
City Hall	4.3	3.8	4.2	4.4	3.9	4.1
Support Services Building	3.8	3.4	3.2	3.6	4.0	3.6
Community Center	4.3	3.6	3.6	3.2	3.0	3.5
Senior Center	4.0	3.6	3.7	4.5	4.1	4.0
Police Annex	3.5	3.3	3.3	3.7	3.2	3.4
Fire Administration	3.9	4.0	3.4	3.6	3.9	3.8
Police Station	3.4	3.6	3.8	3.1	2.7	3.3
Transit Station (New)	3.9	3.9	4.5	3.8	3.8	4.0
Animal Shelter	3.8	4.1	4.5	3.8	4.2	4.1
Tracy Library	3.3	3.0	3.8	3.6	3.6	3.5
Joe Wilson Pool	4.3	4.2	4.6	3.6	4.1	4.2
Sports Complex Meeting Room	3.1	3.3	2.6	3.8	3.7	3.3
Tracy Historical Museum	2.8	3.3	3.1	3.4	3.5	3.2
Grand Theatre	3.7	3.2	3.2	4.0	4.3	3.7
Lammersville School	2.6	2.3	3.1	3.5	3.7	3.1
Town Hall and Jail	3.6	2.5	2.0	3.3	3.0	2.9
Old Corp Yard	2.4	2.5	3.0	2.0	2.6	2.6
Boyd Service Center	3.6	3.5	3.3	3.4	3.4	3.5
Boyd Service Center Building A - Administration	3.4	3.5	3.3	3.7	3.4	3.5
Boyd Service Center Building B - Maintenance Shops (Renovated)	3.9	4.1	4.0	3.8	3.8	3.9
Boyd Service Center Building C - Maintenance Shops (Unrenovated)	3.0	2.8	3.0	2.8	2.9	2.9
Boyd Service Center Building D - Warehouse Building	3.6	3.5	3.3	3.2	3.4	3.5
Boyd Service Center Building E - Fleet Shop	2.6	2.8	2.6	2.2	3.1	2.7
Boyd Service Center Building - Old Transit Center Shops	3.4	3.2	3.3	3.5	3.2	3.3
Tracy Municipal Airport - 3 Seriers Hangers	3.5	3.1	3.3	3.3	3.9	3.4
Tracy Municipal Airport - 4 Seriers Hangers	3.5	3.4	3.8	3.3	3.9	3.6
Tracy Municipal Airport - B Seriers Hangers	3.7	4.1	3.8	4.0	3.1	3.7
Tracy Municipal Airport -F Seriers Hangers	3.0	2.7	2.8	3.0	2.1	2.7
Tracy Municipal Airport - G Seriers Hangers	3.0	2.7	2.8	3.0	2.1	2.7
Skyview Aviation	3.8	3.3	3.8	4.0	3.2	3.6

5 - Excellent/ Compliance 4 - Good 3 - Fair 2 - Poor 1 - Critical/ Non-Compliance

Deferred Maintenance - Condition Assessment Ratings

Renovation Projects

Owned assets will be renovated to improve facility conditions for the public and working environments for staff. Major renovations will take place within City Hall to better align spaces with City of Tracy departmental needs. Swing space for construction may be provided by surrounding Civic Center buildings that are vacated as part of Public Safety or Parks master plans. Phased construction is required for interior renovations projects. Renovations at interiors while occupied with staff will have to be phased over several years.



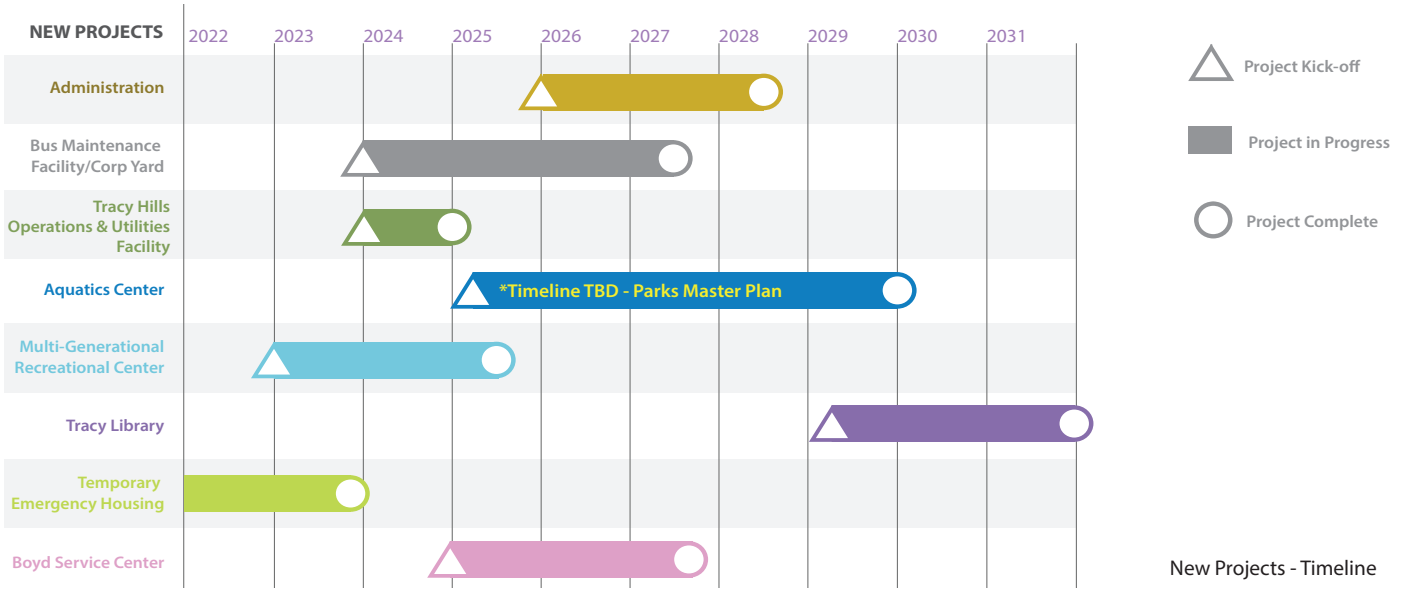
Space Renovation Projects - Timeline

New Projects - 10 year

Eight (8) new Capital Improvement Projects are recommended to be constructed over the next 10 years. City residents will be better served with increased departmental operations efficiency through planned new construction and facility remodels. Public facilities such as the Multi-Generational Recreation Center, Aquatics Center and Library will provide services for the expanding population in the City. Recommended new facilities include:

- An Aquatics Center with pools, water slides and other public use activities
- Temporary Emergency Housing facility on Arbor Avenue (currently under construction)
- A Multi-Generational Recreation Center
- A Bus Maintenance and Operations & Utilities Facility located adjacent to the current Boyd Service Center
- A new Operations and Utilities facility at Tracy Hills
- An additional Library
- A new Administration facility at the site of the current Support Services Building
- Major Expansion to the Boyd Service Center

Parking to accommodate the new construction will be provided at each of the respective planned new facilities.



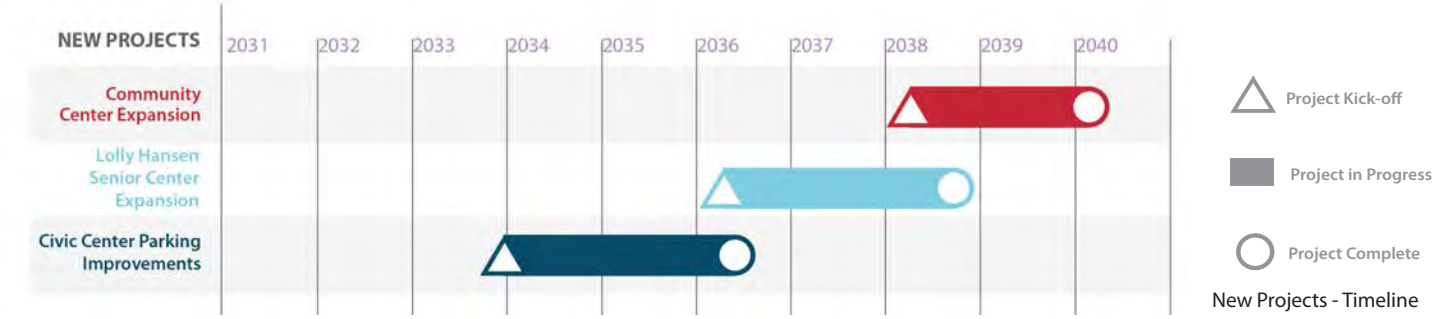
New Projects - Timeline

New Projects - 20 year

Three (3) additional new Capital Improvement Projects are recommended to be constructed over the next 20 years. These services will continue to serve Tracy's expanding population towards Build-out. Recommended construction over the next 20 years includes:

- An expansion and remodel to the Lolly Hansen Senior Center
- An expansion and remodel to the Community Center
- A new parking garage at the Civic Center

A timeline for 20 year facilities is shown below:



New Projects - Timeline

New Facilities



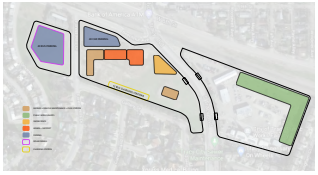
Aquatics Center - The Aquatics Center will supplement the Joe Wilson Pool as another recreational aquatic offering for the City of Tracy's community. The Aquatics Center will have various amenities including multiple pools, water slides and a lazy river. Further information regarding the Aquatics Center can be found in the Parks Master Plan.



Temporary Emergency Housing - Construction of a new temporary emergency housing facility will allow the City to respond to increased levels of homelessness in the area in recent years. The temporary shelter is proposed to be located at a City-owned site east of the Waste Water Treatment facility. The first phase of the project will house 68 occupants.



Multi-Generational Recreational Center - The Multi-Generational Recreational Center will supplement the existing Community Center and Senior Center with increased City space for community recreation and gathering opportunities. Potential spaces to be programmed include a gymnasium multi-purpose rooms, tech offerings, educational kitchen, administrative space and support spaces. The facility is envisioned to be approximately 30,000 SF. Details can be found in the Parks Master Plan Update.



Transit Maintenance/Operations and Utilities Corporation Yard Supplement - This new facility will allow improved vehicle maintenance, storage, office and shops space for both Transit Division and Operations and Utilities. Potential functional spaces to be programmed include Bus Maintenance Bays, Transit office and training space, electric charging infrastructure for buses, bus wash, and parking for multiple buses. Operations and Utilities spaces may include new shops, offices, parking and support spaces. The new facility will supplement existing operators at the Tracy Transit Station and Boyd Service Center and is recommended to be located on an adjacent and purchasable site. An 18,000 SF new building is proposed.



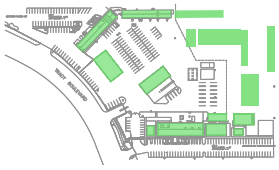
Tracy Hills Operations and Utilities Annex - The Tracy Hills Operations and Utilities Annex site will provide parking and office space for one to two employees. This office space will be designed to be sharable and provide auxiliary work space and equipment storage areas to be utilized as necessary.



New Library - A new City of Tracy Library would supplement the existing library which is undersized to continue to provide library services to Tracy's expanding population. Potential program offerings at the new library include educational space and a teen center. This facility is recommended to be approximately 30,000 SF.



Administration Building - A new Administration building will allow for more organization and tailored workspaces for City staff currently split between the Support Services Building, Police Annex and Support Services Trailer. The Administration Building is recommended to be a minimum of 21,000 SF.



Boyd Service Center - A major expansion at the Boyd Service Center will allow for increased Operations and Utilities capacity to maintain Tracy streets, parks and facilities. It is recommended to expand facilities at Boyd with larger shop areas, increased warehouse space, and a modernized vehicle maintenance bay. Expansion to the Administration Building is also considered as a separate new CIP project.



Community Center - An expansion to the Community Center of 9,000 SF will allow for increased community meeting space at the Civic Center. This will allow the Community Center to continue to house many City functions and increase the type of functions that may be possible at the Community Center. The expansion will create an exterior plaza adjoining the Community Center and Senior Center



Lolly Hansen Senior Center - An expansion of the Lolly Hansen Senior Center of 5,000 SF will allow for increased gathering space for Tracy's senior population. The expanded space will allow for larger events and gatherings to take place. An exterior plaza will adjoin the Community Center.



Civic Center Parking Garage - The parking lot behind the Support Services Building will be used as a site for a new 2-story parking garage. This will increase available parking spaces at the Civic Center and allow for both residents and employees to find better parking opportunities at the Civic Center in light of the expanding population.

Further information regarding the Aquatics Center can be found in the Citywide Parks, Recreation and Trails Master Plan. The CPFMP Update does not envision any specific changes to the services currently provided at the Community Center, Senior Center, Grand Theatre, Joe Wilson Pool or Airport. The recommended new Administration Building will provide certain services to the public that are currently provided at City Hall or the Support Services Building.

Cost Estimating

The planning team projected the potential cost for each project. Projects are prioritized in 10-year and 20-year plans. The CPFMP Update contains cost and scheduling estimates for 1) CIP new construction projects, 2) deferred maintenance, and 3) CIP renovation projects. Each new design, renovation or deferred maintenance project includes a 15% General Contingency and 10% additional contingencies for Design and Construction Management. Implementing all new construction projects requires the City spend between $10 and $30 million annually.

CIP New Construction Projects:	$311,793,559
CIP Renovation Projects:	$20,815,000
Deferred Maintenance Projects:	$28,492,688
Total Estimate:	**$361,101,247**

Calculations for percentages of fee construction costs attributable to new development are shown below. Costs are included on the following page.

EXISTING POPULATION = 98,601
BUILD-OUT POPULATION = 174,750
GROWTH = 76,149
BUILD-OUT POP w EMPOLYEES =197,269

EQUATION 1

$$\frac{\left(\frac{\text{FACILITY SIZE AT BUILDOUT (SF)}}{\text{BUILDOUT POPULATION (\#)}}\right) \times \text{GROWTH POPULATION (\#)}}{\text{TOTAL NEW FACILITY BUILD (SF)}} = \text{PERCENTAGE ATTRIBUTABLE TO NEW DEVELOPMENT}$$

FACILITY NAME		PERCENTAGE ATTRIBUTABLE TO NEW DEVELOPMENT
ADMIN	FACILITY SIZE AT BUILD-OUT = 21,000 SF TOTAL NEW FACILITY BUILD = 21,000 SF EXISTING TOTAL FACILITY SIZE = 9,900 SF	38.6%
CC PARKING	FACILITY SIZE AT BUILD-OUT = 60,000 SF TOTAL NEW FACILITY BUILD = 60,000 SF EXISTING TOTAL FACILITY SIZE = 20,000 SF	40.6%
T HILLS OPS & UTIL	FACILITY SIZE AT BUILD-OUT = 400 SF TOTAL NEW FACILITY BUILD = 400 SF EXISTING TOTAL FACILITY SIZE = 0 SF	38.6%
BUS MAINTENANCE	FACILITY SIZE AT BUILD-OUT = 17,400 SF TOTAL NEW FACILITY BUILD = 17,400 SF EXISTING TOTAL FACILITY SIZE = 0 SF	38.6%
BOYD ADMINISTRATION	FACILITY SIZE AT BUILD-OUT = 8,991 SF TOTAL NEW FACILITY BUILD = 4,000 SF EXISTING TOTAL FACILITY SIZE = 4,991 SF	86.8%
BOYD OVERALL	FACILITY SIZE AT BUILD-OUT = 50,920 SF TOTAL NEW FACILITY BUILD = 25,460 SF EXISTING TOTAL FACILITY SIZE = 25,460 SF	77.2%

FACILITY NAME		PERCENTAGE ATTRIBUTABLE TO NEW DEVELOPMENT
COMMUNITY CENTER	FACILITY SIZE AT BUILD-OUT = 19,480 SF TOTAL NEW FACILITY BUILD = 9,000 SF EXISTING TOTAL FACILITY SIZE = 10,480 SF	94.3%
SENIOR CENTER	FACILITY SIZE AT BUILD-OUT = 10,224 SF TOTAL NEW FACILITY BUILD = 5,000 SF EXISTING TOTAL FACILITY SIZE = 5,224 SF	89.1%
LIBRARY	FACILITY SIZE AT BUILD-OUT = 47,000 SF TOTAL NEW FACILITY BUILD = 30,000 SF EXISTING TOTAL FACILITY SIZE = 17,000 SF	68.3%
MULTI GEN	FACILITY SIZE AT BUILD-OUT = 30,000 SF	100%
AQUATIC	FACILITY SIZE AT BUILD-OUT = 483,280 SF	100%
TEMPORARY EMERGENCY HOUSING PH.2	FACILITY SIZE AT BUILD-OUT = 9,596 SF TOTAL NEW FACILITY BUILD = 9,596 SF EXISTING TOTAL FACILITY SIZE = 0 SF	38.6%

Funding not attributable to new development is the responsibility of the City and will be provided through a combination of grant funds, general funds, and other funding opportunities. The growth assumptions in this Master Plan are based on data from September 2021, received from the City of Tracy. They don't include the growth assumed in the City of Tracy 6th cycle Housing Element.

Facility Name	CIP New Construction	CIP Renovation	Deferred Maintenance	Total
Administration Building	$ 24,242,550			$ 24,242,550
Animal Shelter **	$ 6,370,000	$ 5,750,000	$ 1,029,250	$ 6,779,250
Aquatics Center *	$ 62,688,368			$ 62,688,368
Bus Maintenance Facility/Corp Yard	$ 36,400,000			$ 36,400,000
City Hall		$ 4,025,000	$ 1,711,200	$ 5,736,200
Civic Center Parking Garage	$ 12,580,000			$ 12,580,000
Community Center	$ 9,500,000		$ 1,057,138	$ 10,557,137
Fire Administration		$ 1,840,000	$ 1,329,400	$ 3,169,400
Grand Theatre		$ 5,750,000	$ 3,266,000	$ 9,016,000
Joe Wilson Pool			$ 138,000	$ 138,000
Lammersville School			$ 624,450	$ 624,450
Multi-Generational Recreation Center *	$ 87,577,232			$ 87,577,232
Old Corp Yard			$ 276,000	$ 276,000
Police Annex		$ 3,450,000	$ 756,125	$ 4,206,125
Police Station **	$ 35,781,000		$ 1,242,000	$ 1,242,000
PD Training Facility **	$ 5,655,000			$ -
Senior Center	$ 5,500,001		$ 238,625	$ 5,738,626
Sport Complex			$ 553,150	$ 553,150
South Tracy PD Substation **	$ 12,507,000			$ -
Support Services Building			$ 1,242,000	$ 1,242,000
Temporary Emergency Housing (Phase 2)	$ 10,000,000			$ 10,000,000
Tracy Hills Ops & Utils Facility	$ 426,920			$ 426,920
Tracy Library (New)	$ 25,577,000			$ 25,577,000
Tracy Library (Existing)			$ 948,750	$ 948,750
Tracy Museum			$ 782,000	$ 782,000
Tracy Townhall & Jail			$ 293,250	$ 293,250
Tracy Transit Station (New)			$ 1,167,250	$ 1,167,250
Boyd Service Center				
Overall	$ 30,047,290			$ 30,047,290
Administration	$ 7,254,200		$ 258,750	$ 7,512,950
Maintenance Shops B - Renovated			$ 759,000	$ 759,000
Maintenance Shops C - Unrenovated			$ 971,750	$ 971,750
Warehouse Building D			$ 937,250	$ 937,250
Vehicle Fleet Shop E			$ 4,168,750	$ 4,168,750
Tracy Municipal Airport				
3 Series Hangars			$ 1,127,000	$ 1,127,000
4 Series Hangars			$ 862,500	$ 862,500
B Series Hangars			$ 202,975	$ 202,975
F Series Hangars			$ 894,125	$ 894,125
G Series Hangars			$ 284,625	$ 284,625
Skyview Aviation			$ 1,371,375	$ 1,371,375
TOTAL	**$ 311,793,559**	**$ 20,815,000**	**$ 28,492,688**	**$ 361,101,247**

* Total costs shown above include other identified funding sources of $53,007,854 for the Aquatics Center and $73,000,000 for the Multi-Generational Recreation Center.

** CIP new construction costs are included in the Public Safety Master Plan and **are not included** in the CPFMP total.

Benefits

New construction projects will provide additional facilities in the under-served areas of the City and expand facilities located at the Civic Center. New Administration Facility and Operations and Utilities improvements will allow for housing of the 650 City employees. Improvements allow for continuous operations beyond the next 10 years. The Civic Center complex will continue to house City Hall and administrative services and a new Administration Facility in place of the current Support Services Building that is tailored to meet department needs will improve administrative work efficiencies for departments. New public facilities will provide activities and services that align with the community growth and supplement existing public facilities such as the Joe Wilson Pool.

The consolidation of departments and construction of new public facilities will provide the following benefits:

- Improved recreational offerings
- Increased property values
- Increased parking capacity
- Enhanced curb appeal for Civic Center area
- Increased department workspace areas
- Higher use of City owned land



Potential Benefits Diagram

Risks

There are risks associated with large expenditure and change as outlined in the CPFMP. Current consideration of the recommendations in this report is required to include a broader range of alternative, solutions and implementation. Some possible risks include:

- Large expenditures may require alternate funding methodologies
- Changes in City operations may require adjustments to routines
- Future needs may require additional parking
- Increased traffic around newly constructed public facilities

Implementation

The Citywide Public Facilities Master Plan update defines the steps the City could take to improve conditions, operations and facility management of the city-owned facilities for public and staff. The CPFMP defines renovation and new construction projects the City could undertake in order to achieve goals and needs. Implementation of design and construction of the eight (8) new facility projects aligns with goals. Several medium and small improvement projects are also suggested to be undertaken over future years. The logistics and implementation of the proposed scale of these types of Capital Improvement Projects requires leadership of management and engagement of financial, legal, design and construction professionals.

Planning, Design and Construction Staffing

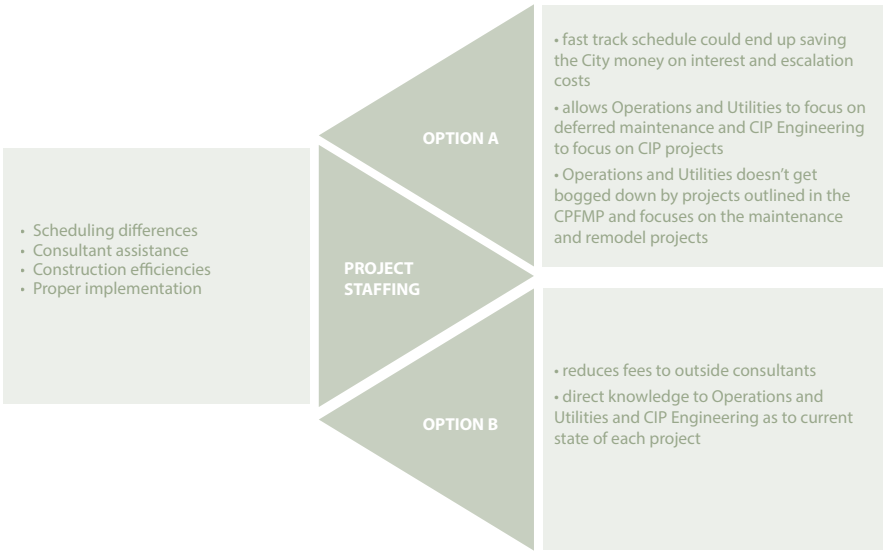
Additional staffing requirements will be necessary to implement the projects recommended as part of the CPFMP. The City will be hiring additional Operations and Utilities/CIP Engineering and project management staff to oversee the design and construction of new facilities. The City should consider hiring additional construction management consultants for individual large projects such as the new Aquatics Center, Administration Facility and Multi-Generational Recreational Center. Enhancing physical improvements with new construction sooner rather than later will reduce inflation costs and save the City millions of dollars.

Multiple options are proposed for leadership involvement for proper project implementation. One option involves hiring outside professional consultants specifically responsible for managing individual projects. Pros of this Option include:

- A fast track schedule which could end up saving the City money on interest and escalation costs
- Operations and Utilities, CIP Engineering and other staff can focus on other ongoing projects and remain as a resource to consultants
- Staff can remain focused on maintenance and remodel projects

Another option involves utilizing existing City of Tracy staff along with hiring additional Operations and Utilities, CIP Engineering and other staff. Pros of this option include:

- Reduces fees to outside consultants
- Operations and Utilities, CIP Engineering and other City staff have direct knowledge as to the current state of each project.



Staffing Considerations

Continued Planning and Development

The summary recommendations outline several major projects, renovation projects, deferred maintenance and ADA considerations that could be undertaken over the next decade. These initiatives, projects and recommendations require further research, analysis, planning, design, construction and activation to achieve the very broad goals outlined in this report.

Each project has unique planning hurdles and challenges that require further investigation to determine the best approach to accomplishing the project specifics. These projects provide unique benefits City residents and the staff that serves them. Other entities may join the City in planning efforts to further strengthen the many public and private opportunities that will arise from this one public improvement project.

Public Input

Public outreach will be conducted for the significant projects proposed. The future public outreach process will facilitate the direction and further define potential solutions outlined in the CPFMP. Meetings and workshops will be conducted by the City.

II. FACILITY CONDITION ASSESSMENTS

a. Facility Condition Assessments Reports **28**

City Hall	28
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Boyd Service Center Building A - Administration 210

Boyd Service Center Building B - Maintenance Shops (renovated) 222

Boyd Service Center Building C - Maintenance Shops (unrenovated) 232

Boyd Service Center Building D - Warehouse Building 243

Boyd Service Center Building E - Fleet Shop 254

Boyd Service Center - Old Transit Center Shops 265

Tracy Municipal Airport - 3 Series Hangars 275

Tracy Municipal Airport - 4 Series Hangars 286

Tracy Municipal Airport - B Series Hangars 297

Tracy Municipal Airport - F Series Hangars 308

Tracy Municipal Airport - G Series Hangars 319

Skyview Aviation 330

Police Station 341

FACILITY CONDITION ASSESSMENT

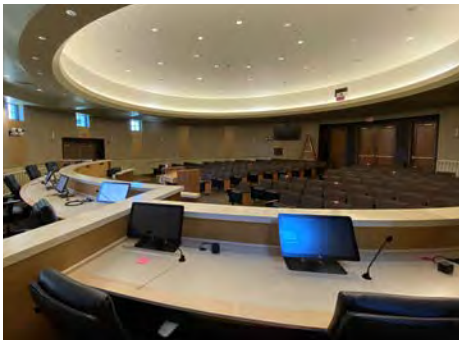
CITY HALL



Condition Summary - City Hall

Overall Rating **4.1**





Facility Condition

Site 4.3

The City Hall site is well-maintained and in good condition overall. Walkways, curbing and other pavings are minimally cracked with slight discoloration in areas. Publicly accessed features such as payment drop boxes contain chipping paint. Landscaping including that of the remainder of Civic Center Plaza is healthy and plentiful with multiple species of plants and trees. Lighting is present throughout the site. Parking lot striping throughout is faded.

Exterior Envelope 3.8

The stucco, masonry and stone paneling exterior portions of City Hall are all in good condition with minimal signs of deterioration to be expected with age, including slight fading of colors in areas and discoloration due to water runoff. Exterior sealants are deteriorated at foundation base and door bases. Roof surface has mechanical and drainage elements that are beginning to rust. Roof sealants are nearing the end of their useful service life.

Structure 4.2

The structure is in good visible condition and shows signs of normal wear and tear. Minimal cracking was present at building base near foundation.

Interior 4.4

Ceiling systems throughout City Hall including plaster and acoustic tiles are in good condition with a few instances of light staining on tiles. Flooring systems throughout are well-maintained. Carpeting has some visible wear in high traffic areas. Terrazzo at the entrance is well-polished and only cracked on one area noted. The interior is well-lit with multiple types of lighting including recessed can lighting and chandelier type fixtures. The Council Chambers room is well-appointed.

MEP Systems 3.9

Although functional, rooftop mounted HVAC equipment would benefit from replacement. Pump equipment for HVAC water piping is beginning to rust as protective coating has flaked off in areas. No major electrical issues were reported and the building has adequate electrical supply. Boiler plate solder joints were bad when installed but a crimp fix has worked out for the time being. The solder joints should be monitored in the future.

ADA Compliance Needs Compliance

City Hall contains accessible parking spaces and generally accessible routes. Areas for improvement include the passenger loading zone near the fountain at the main entrance, various toilet room elements, cabinetry and furniture at areas throughout the building, and signage.

Recommendation Summary - City Hall


Exterior


Lobby



Interior

Recommendations

Site: No recommendations for improvement.

Exterior Envelope: It is recommended to reapply roof sealant to extend service life.

Structure: It is recommended to repair the minimal cracking at the base of building near foundation.

Interior: No recommendations for improvement.

MEP Systems: It is recommended that the rooftop mounted HVAC equipment be completely replaced.

ADA Compliance: Recommended actions include repainting passenger loading zone near the fountain at main entrance, relocating some toilet room elements to be ADA compliant, rearranging cabinetry and furniture throughout the building, and repainting the signage.

Impact of Recommended Works

Site: No impact of recommended works.

Exterior Envelope: Impact of exterior envelope recommendations are minor. One week will be required to reapply roof sealant.

Structure: Performing structural recommendations should have minor impact on the center; one week will be required to repair the minimal cracking.

Interior: No impact of recommended works.

MEP Systems: Replacement of HVAC equipment will require shutting HVAC systems down for two to three days.

ADA Compliance: Impacts of recommendations include temporary closing of the City Hall. Completion of these recommendations will result in increased accessibility within the building and toilet rooms. Three weeks will be required to complete these recommendations.

Facility Description - City Hall


Exterior


Interior



MEP

Building Description

The City Hall is a double story building that was constructed in 2007. The City Hall is located off of Civic Center drive and it surrounded by other public buildings. The building has a steel framed structure and the exterior is clad with painted stucco. Surrounding the hall are courtyard spaces and appropriate landscaping including trees and shrubbery. Within the same neighborhood, there is the City of Tracy Department, Lolly Hansen Senior Center, and the Tracy Community Center. Mechanical systems are rooftop mounted. Interior finishes adequately accommodate the building's needs and the range of activities that take place there.

Age

The City Hall building is 15 years old and was constructed in 2007.

Use of Building

The building is used in the following ways:

- Houses offices for local government officials
- Houses various City of Tracy Departments
- Public permitting and building processes

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
City Hall - Overall										**4.1**
1	**Site/ Civil/ Landscape**									**4.3**
	1.1	Fences/ Walls/ Gates								4.5
		A.	Perimeter Fencing						N/A	
		B.	Equipment Fencing		4					
		C.	Landscape Walls/ Piers / Structures	5						
		D.	Gates						N/A	
	1.2	Paving								4.0
		A.	Sidewalks/ Walkways/ Crosswalks	5						
		B.	Curbing		4					
		C.	Driveways/ Parking Pavement		4					
		D.	Striping/ Marking/ Speed Bumps			3				
		E.	Patios		4					
	1.3	Landscape								4.3
		A.	Ground Cover		4					
		B.	Trees	5						
		C.	Irrigation System		4					
	1.4	Site Features/ Fixtures/ Furniture/ Signage								4.7
		A.	Landscape Features/ Play Equipment						N/A	
		B.	Exterior Lighting Fixtures		4					
		C.	Water Fixtures	5						
		D.	Exterior Site Furniture						N/A	
		E.	Site Utility	5						
	1.5	Stormwater Management								4.0
	NOTES									

	System			Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**3.8**
	2.1	Exterior Wall Finish								4.0
	2.2	Eaves and Fascias								4.0
	2.3	Doors/ Windows/ Louvers								4.0
		A.	Windows		4					
		B.	Louvers and Vents						N/A	
		C.	Exterior Doors & Hardware		4					
	2.4	Roofing								3.3
		A.	Roof Surface			3				
		B.	Roof Opening/ Skylight/ Penetrations			3				
		C.	Roof Equipment Curbing		4					
		D.	Leakage		4					
		E.	Ponding Water				2			
		F.	Roof Drainage			3				
		G.	Gutters / Downspouts						N/A	
		H.	Roof Vents		4					
	NOTES	2.4.E: Ponding water is observed around roof drainage.								
3	**Structure**									**4.2**
	3.1	Foundation/ Footing								4.0
	3.2	Columns								4.0
	3.3	Framing System								4.0
	3.4	Walls								5.0
	3.5	Lateral Force Resistance System								4.0
	3.6	Covered Walkway/Canopy								N/A
	3.7	Chimney								N/A
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**4.4**
	4.1	Ceilings								4.5
		A.	Suspended Ceiling (ACT)		4					
		B.	Gypsum Board						N/A	
		C.	Plaster	5						
		D.	Wood						N/A	
		E.	Other						N/A	
		F.	Exposed						N/A	
	4.2	Flooring								3.6
		A.	Carpet		4					
		B.	Vinyl			3				
		C.	Tile			3				
		D.	Terrazzo/Wood		4					
		E.	Concrete		4					
	4.3	Interior Wall/Partition Finishes								4.0
	4.4	Interior Doors								5.0
	4.5	Stairs Condition								4.5
		A.	Stairs/ Landing	5						
		B.	Handrails		4					
	4.6	Toilet Condition								3.8
		A.	Toilet Accessories		4					
		B.	Toilet Partitions			3				
		C.	Water Closets		4					
		D.	Urinals		4					
		E.	Lavatorie /Sinks		4					
		F.	Counter						N/A	
		G.	Shower Compartments						N/A	
	4.7	Hazmat								5.0
	4.8	Room Capacity								5.0
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**3.9**
	5.1	Mechanical Systems								3.6
		A.	HVAC		4					
		B.	Control System		4					
		C.	Chiller			3				
		D.	Cooling Towers						N/A	
		E.	Duct Work			3				
		F.	Ventilation\ Air Distribution		4					
		G.	Boilers						N/A	
	5.2	Electrical Systems								4.4
		A.	Transformer		4					
		B.	Switchgear		4					
		C.	Panelboards (Condition & Capacity)		4					
		D.	Devices (Switches & Receptacles)		4					
		E.	Interior Lighting Fixtures	5						
		F.	Conveying Systems	5						
		G.	Fire Alarm System	5						
	5.3	Voice and Data Systems								4.0
	5.4	Plumbing Systems								3.7
		A.	Plumbing Fixtures		4					
		B.	Water Distribution System/ Pipes			3				
		C.	Water Heaters		4					
	5.5	Gas Distribution Systems								N/A
	5.6	Fire Suppression System								4.0

NOTES

System				Condition		
				Compliance	Non-compliance	N/A
6	**ADA Compliance**					
	6.1	Site				
		A.	Accessible Parking Spaces	C		
		B.	Passenger Loading Zones		NC	
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space	C		
		B.	Doors/ Doorways/Gates	C		
		C.	Threshold	C		
		D.	Ramps	C		
		E.	Stairways	C		
		F.	Handrails		NC	
		G.	Elevators	C		
	6.3	Toilet				
		A.	Clearances/Accessible Stall	C		
		B.	Toilet Accessories	C		
		C.	Water Closets	C		
		D.	Urinals	C		
		E.	Lavatories/ Sinks	C		
		F.	Counters			N/A
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry		NC	
		B.	Furniture, Fixtures & Equipment - FF&E	C		
		C.	Signage		NC	
	N O T E S	6.1.B: Exiting passenger loading zone does not meet the ADA requirement. Restripe the loading zone and lettering to meet the ADA requirement. 6.2.F: Provide handrails and guardrails to site ramp if the slope is greater than 1:20. 6.4.A: Provide knee and toe clearance under kitchen sink, working surfaces, and front desk. 6.4.C: Provide signage on ADA toilet doors. Provide ADA compliant room signage with tactile text and Braille.				

Photo Documentation | Exterior Overall





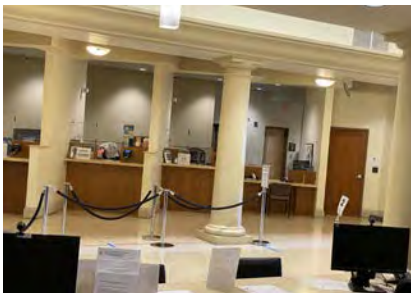


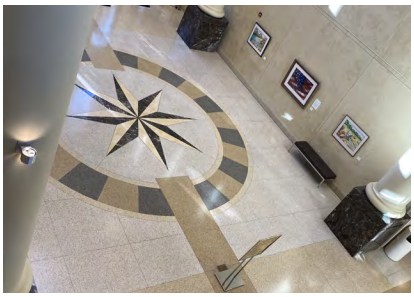


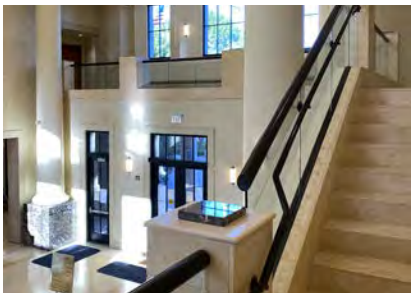
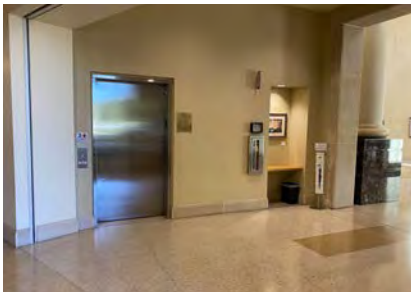





Photo Documentation | Interior Blow Ups










FACILITY CONDITION ASSESSMENT

SUPPORT SERVICES BUILDING



Condition Summary - Support Services Building

Overall Rating **3.6**





Facility Condition

Site 3.8

The Support Services building contains healthy landscaping with plants and many trees. Concrete paving is in good condition with condition similar to the remainder of the Civic Center site. Some chipping is present at corners of landscape walls near main entrance. Support Services Trailer is located on site and contains additional offices for city employees. Crosswalk striping near entrance to Support Services building is faded and lacking due to asphalt chipping. Green site lighting units throughout the Civic Center site contain some paint deterioration and generally require cleaning.

Exterior Envelope 3.4

Painted stucco siding of main facility is in similar condition as the remainder. Tin roof of Support Services Trailer is dirty with deteriorating rubber seals. Window grate screws at trailer are rusted. Exterior metal double doors leading to lobby are scratched at bases but operate smoothly. Built-up roof system is fair condition with deteriorated seams and bubbling surfaces in areas especially near rooftop drains. Drains themselves are blocked by a considerable amount of debris buildup. Staining due to water ponding is present in areas. Windows are believed to be single paned in most areas of the facility with tinting peeling off from lower interior covers of many glass surfaces.

Structure 3.2

Moderate cracking exists at CMU wall structure for emergency generator on site. No major structural deficiencies were visually observed.

Interior 3.6

Wood door frames contain light splitting in areas and wooden window sills contain various levels of condition with some dry and deteriorating. Square carpet tiles and rolled carpet both hide stains well due to their dark color but don't give the interior a welcoming appearance and contain fraying and stains upon close inspection. Restroom floor tile is in fair condition with surface wear and staining present. Restroom surfaces generally contain out-of-date materials. A large scuff is present in floor length mirror in male restroom. Linoleum tile flooring in main building and trailer is in fair condition with much scratching and some chipping at seam areas. Rectangular acoustic ceiling tiles in main lobby and workspace area contain minimal signs of staining. Acoustic ceiling system grid of Support Services Trailer appears out of plumb in areas with tiles not placed properly and components protruding at odd angles. Gate separating reception from staff area is in poor condition with chipping at edges and discoloration at top due to frequent operation. Some staining is present at lighting lenses at Support Services Trailer.

MEP Systems 4.0

Metal enclosures surround rooftop mounted MEP equipment are in good condition along with metal roof parapet. Main electrical service is served to the building through two 1000A Siemens switchboards manufactured in 2008. These should contain much remaining service life. Water heater was installed in 2006 and is likely nearing the end of its useful service life. Hinges on gate for access to transformer T-1198 are rusted. HF-125 extinguishing system is present for IT components with no reported use or problems. A Kohler diesel powered

Condition Summary - Support Services Building

emergency generator is located on site and is in visually fair condition but interior engine components require cleaning.

ADA Compliance **Needs Compliance**

Interior break areas are not compliant due to counter height dimensions and lack of knee space.

Recommendation Summary - Support Services Building


Exterior


Interior


Kitchen

Recommendations

Site: Recommendations include repairing chipping at corners of landscape walls near main entrance, repairing asphalt chipping and repainting crosswalk striping, and cleaning green site lighting units.

Exterior Envelope: It is recommended to replace rubber seals of tin roof at Support Services Trailer, clean tin roof, replace window grate screws at trailer, repair multiple aspects of built up roofing system, clean drains of buildup, and reapplying tinting from lower interior covers of many glass surfaces.

Structure: Recommendations include repairing cracking at CMU wall structure for emergency generator.

Interior: Recommended actions include repairing light splitting on wood door frames, repairing wooden window sills of various issues, replacing square carpet tiles and rolled carpet to improve visual appearance, modernizing restroom surfaces, cleaning large scuff in floor length mirror in male restroom, and cleaning stains from restroom floor tile in general. Additionally it is recommended to realign acoustic ceiling system, replace gate separating reception from staff area, and clean lighting lenses at Support Services Trailer.

MEP Systems: Improvements should include replacing water heater soon, cleaning hinges on gate for access to transformer, and cleaning Kohler diesel powered emergency generator.

ADA Compliance: Recommendations include increasing counter height dimensions and providing knee space in break areas.

Impact of Recommended Works

Site: Impact of site recommendations are minor. One week will be required to repair chipping and crosswalk appearance.

Exterior Envelope: Impacts of recommendations include an improved physical and visual appearance and will improve the functionality of drains. Two weeks will be required to complete all recommendations.

Structure: Performing structural recommendations likely have minor impact on the building and it is thought that cracking can be repaired within one month.

Interior: Performing the interior recommendation will cause a temporary closing of areas of the Support Services building; completion of recommendations will result in heightened appearance of the building. Three weeks will be required for the completion of all recommendations.

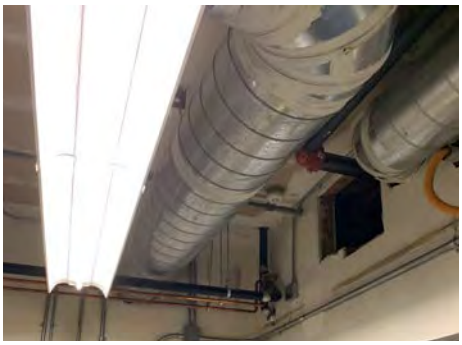
MEP Systems: Minimal impact on facility will occur upon completion of recommended MEP improvements.

ADA Compliance: Executing recommended improvements will result in ADA compliant break areas. Two weeks will be required to perform recommended actions.

Facility Description - Support Services Building


Exterior


Interior


MEP

Building Description

The Support Services Building is a single story building that was constructed in 1972. The building is located in the same block as the City Hall off of Civic Center Plaza. The building structure mainly consists of wood frame construction. The exterior of the Support Services Building is clad in a beige painted stucco and the Support Services Trailer is a per-manufactured facility clad in wood siding. The roofing of the trailer is made of a built up tin system. Exterior landscaping is mostly well kept and adds to the appearance of the building, allowing it to feel more welcoming. Mechanical systems for this building are housed both inside the building and on the roof.

The Support Services Building houses spaces for equipment and plenty of offices. Kitchenette and break areas are provided for employees. A reception area provides information and direction for building visitors.

Age

The Support Services Building is 50 years old and was constructed in 1972.

Use of Building

The building is used in the following ways:

- Houses various City of Tracy Departments
- Provides public assistance

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
Support Services Building - Overall										**3.6**
1	**Site/ Civil/ Landscape**									**3.8**
	1.1	Fences/ Walls/ Gates								3.3
		A.	Perimeter Fencing						N/A	
		B.	Equipment Fencing			3				
		C.	Landscape Walls/ Piers / Structures		4					
		D.	Gates			3				
	1.2	Paving								3.8
		A.	Sidewalks/ Walkways/ Crosswalks		4					
		B.	Curbing		4					
		C.	Driveways/ Parking Pavement		4					
		D.	Striping/ Marking/ Speed Bumps			3				
		E.	Patios						N/A	
	1.3	Landscape								4.3
		A.	Ground Cover		4					
		B.	Trees	5						
		C.	Irrigation System		4					
	1.4	Site Features/ Fixtures/ Furniture/ Signage								3.5
		A.	Landscape Features/ Play Equipment		4					
		B.	Exterior Lighting Fixtures			3				
		C.	Water Fixtures			3				
		D.	Exterior Site Furniture						N/A	
		E.	Site Utility		4					
	1.5	Stormwater Management								4.0
	N O T E S									

	System			Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**3.4**
	2.1	Exterior Wall Finish								3.0
	2.2	Eaves and Fascias								3.0
	2.3	Doors/ Windows/ Louvers								4.0
		A.	Windows		4					
		B.	Louvers and Vents		4					
		C.	Exterior Doors & Hardware		4					
	2.4	Roofing								3.6
		A.	Roof Surface			3				
		B.	Roof Opening/ Skylight/ Penetrations		4					
		C.	Roof Equipment Curbing		4					
		D.	Leakage						N/A	
		E.	Ponding Water						N/A	
		F.	Roof Drainage			3				
		G.	Gutters / Downspouts						N/A	
		H.	Roof Vents		4					
	NOTES									
3	**Structure**									**3.2**
	3.1	Foundation/ Footing								3.0
	3.2	Columns								4.0
	3.3	Framing System								3.0
	3.4	Walls								3.0
	3.5	Lateral Force Resistance System								3.0
	3.6	Covered Walkway/Canopy								N/A
	3.7	Chimney								N/A
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**3.6**
	4.1	Ceilings								4.0
		A.	Suspended Ceiling (ACT)		4					
		B.	Gypsum Board						N/A	
		C.	Plaster	5						
		D.	Wood			3				
		E.	Other						N/A	
		F.	Exposed						N/A	
	4.2	Flooring								3.7
		A.	Carpet	5						
		B.	Vinyl						N/A	
		C.	Tile			3				
		D.	Wood						N/A	
		E.	Concrete			3				
	4.3	Interior Wall/Partition Finishes								4.0
	4.4	Interior Doors								3.0
	4.5	Stairs Condition								N/A
		A.	Stairs/ Landing						N/A	
		B.	Handrails						N/A	
	4.6	Toilet Condition								3.2
		A.	Toilet Accessories			3				
		B.	Toilet Partitions			3				
		C.	Water Closets			3				
		D.	Urinals			3				
		E.	Lavatorie /Sinks			3				
		F.	Counter		4					
		G.	Shower Compartments						N/A	
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**4.0**
	5.1	Mechanical Systems								3.0
		A.	HVAC			3				
		B.	Control System			3				
		C.	Chiller			3				
		D.	Cooling Towers						N/A	
		E.	Duct Work			3				
		F.	Ventilation\ Air Distribution			3				
		G.	Boilers						N/A	
	5.2	Electrical Systems								3.5
		A.	Transformer			3				
		B.	Switchgear		4					
		C.	Panelboards (Condition & Capacity)		4					
		D.	Devices (Switches & Receptacles)			3				
		E.	Interior Lighting Fixtures			3				
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System		4					
	5.3	Voice and Data Systems								5.0
	5.4	Plumbing Systems								3.3
		A.	Plumbing Fixtures			3				
		B.	Water Distribution System/ Pipes		4					
		C.	Water Heaters			3				
	5.5	Gas Distribution Systems								4.0
	5.6	Fire Suppression System								5.0
	NOTES									

System				Condition		
				Compliance	Non-compliance	N/A
6	**ADA Compliance**					
	6.1	Site				
		A.	Accessible Parking Spaces	C		
		B.	Passenger Loading Zones		NC	
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space		NC	
		B.	Doors/ Doorways/Gates	C		
		C.	Threshold	C		
		D.	Ramps		NC	
		E.	Stairways			N/A
		F.	Handrails		NC	
		G.	Elevators			N/A
	6.3	Toilet				
		A.	Clearances/Accessible Stall	C		
		B.	Toilet Accessories		NC	
		C.	Water Closets		NC	
		D.	Urinals	C		
		E.	Lavatories/ Sinks		NC	
		F.	Counters	C		
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry		NC	
		B.	Furniture, Fixtures & Equipment - FF&E		NC	
		C.	Signage		NC	

NOTES

6.1.B: Provide ADA compliant passenger loading zone with striping and tactile warnings.
6.2.A: Provide ADA compliant handrails at exterior ramp.
6.2.D: Provide ADA compliant ramp with landing.
6.2.F: Provide ADA compliant handrails and guardrails to exterior ramp and stair.
6.3.B: Provide ADA compliant toilet accessories.
6.3.C: Provide ADA compliant water closet placement.
6.3.E: Provide ADA compliant lavatory operation controls.
6.4.A: Provide knee and toe clearances under sink in breakroom and front desk.
6.4.B: Provide ADA compliant furniture, fixtures and equipment with accessible height and knee and toe clearance.
6.4.C: Provide ADA compliant room signage with tactile text and Braille. Provide ADA compliant toilet room signage.

Photo Documentation | Exterior Overall





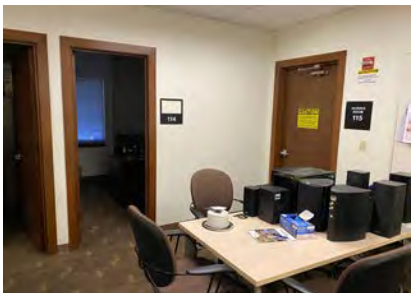


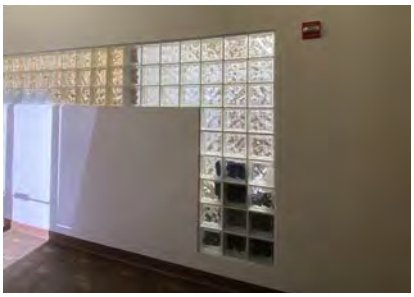
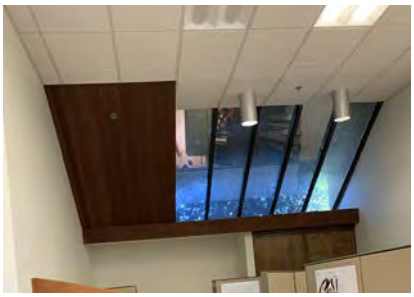


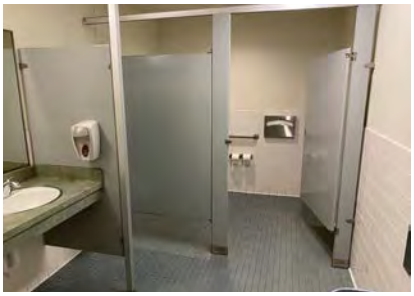





Photo Documentation | Interior Blow Ups







FACILITY CONDITION ASSESSMENT

COMMUNITY CENTER



Condition Summary - Community Center

Overall Rating **3.5**







Facility Condition

Site 4.3

Crosswalk near the Community Center and Police Sation contains faded yellow striping. Sidewalks directly adjacent to Community Center and other nearby Tracy facilities are in good condition with minimal signs of wear, especially with cracking sealant at areas between large concrete pours. Landscaping is generally healthy and green but somewhat overgrown onto sidewalk at double-door entrance to the Community Center. Exterior paint is in fair condition but beginning to fade and discolor in places. Lawn is generally healthy with some dry spots but an unfinished strip of dirt and rocks exists adjacent to lawn. Two large trees provide shade at portions of the facility. The Tracy Water Tower is visible from the site and is assessed under a separate report. Main parking lot of building entrance contains poor surface condition and striping that are in poor to fair condition at best. Asphalt pebbles have dislodged from surface and large cracking is present down center of the main vehicular path. Stall striping is faded. Black metal gates located around the site are in good condition with minimal signs of wear.

Exterior Envelope 3.6

The exterior of building at electrical room is damaged at the door and exterior wall. TPO roof surface is in fair condition with no major signs of deterioration or surface uprising, but is stained with worn surfaces especially at areas of maintenance use and water ponding. Peaked metal roof portions are faded from sun damage and starting to rust at where lower edges of roofing panels meet flashing. Double entrance doors at lobby are in generally good condition with light scratching at paint. Roof access ladder is mounted securely to wall in table and chair storage area. Some rooftop elements including exhaust fans contain rust. Roof drains are cracked. Windows are single pane and in good to fair condition with tinting that is not yet peeling but windows require cleaning. Exterior stucco is deteriorating at base of roof area and ground level and dirty areas under upper roof parapet.

Structure 3.6

Light cracking exists at foundation base around building structure.

Interior 3.2

The main Community Hall is in good condition with recently renovated elements including flooring. Ceiling acoustic tile surfaces are in visually good condition. Flooring tiles are missing at entrances to some storage areas nears the main hall with exposed flooring adhesive present. Wall paint is scuffed and peeling in these storage areas. In general, storage area for chairs and tables is unfinished with damaged flooring, wall and ceiling elements. Concrete flooring in conference areas is in fair condition with moderate scuffing and cracking but shines nicely with no significant deterioration. Scratches on other wall surfaces are present. Acoustic ceiling tile is outdated and discolored in the main hall space. Kitchen equipment has served the facility well with signs of wear such a deteriorated stove top burners. Stained grout is present at ceramic tile flooring in kitchen. Metal ceiling system at lobby is in good condition with minimal signs of wear which include paint chipping at edges. Lobby baseboards are torn in a few places. Components of snack serving window and room are unfinished at interior. Restroom tile flooring is stained in high use areas.

Condition Summary - Community Center

MEP Systems 3.0

Floor vents have chipping paint and contain debris. Air supply vents are dirty and are causing staining on adjacent acoustic ceiling tile surfaces. Metal corner guards at exterior MEP area are dented with chipped paint at corners. Main electrical service is largely original to the building. Water heater has recently been replaced with years of remaining useful service life.

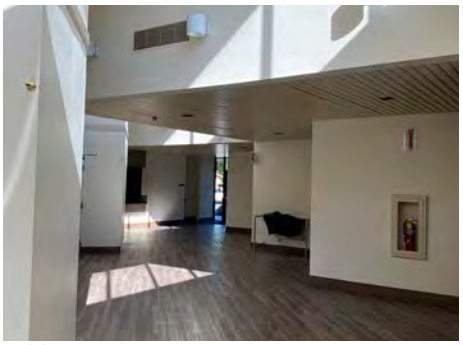
ADA Compliance Needs Compliance

No wheelchair access is available for storage area in main hall. Storage areas do not contain appropriate clear floor space. Painted ADA parking symbol and striping is beginning to fade.

Recommendation Summary - Community Center



Exterior


Lobby


Kitchen

Recommendations

Site: Recommendations include repainting yellow striping at crosswalk near Police Station, repairing cracks in sealant at areas between large concrete pours, trimming landscaping near double door entrance, landscaping unfinished strip of dirt, resurfacing main parking lot, repairing cracks and dislodged asphalt pebbles, and repainting and repairing parking stall striping.

Exterior Envelope: It is recommended to repair damage portions of wall and door, clean TPO roof surface at areas of maintenance use and water ponding, replace faded and rusting portions of peaked metal roof, clean rusted roof elements, repair roof drains, replace single paned windows, and repair exterior stucco at base of roof area and ground level.

Structure: Recommendations include repairing light cracking at foundation base and maintaining visual structural inspections.

Interior: Recommended actions include adding missing floor tiles at entrances to some storage areas, repainting walls in storage areas, generally renovating these areas to produce a more finished appearance, and fixing scratches on other wall surfaces. Additionally, recommendations include replacing acoustic ceiling tile, replacing stove top burners, cleaning grout at ceramic tile flooring in kitchen, repairing lobby baseboards, finishing components of snack serving window and room, and cleaning restroom tile flooring.

MEP Systems: Improvements should include cleaning and repainting floor vents, cleaning air supply vents, and repairing metal corners at exterior MEP area. Consider replacement of main electrical switchboard.

ADA Compliance: Recommendations include providing wheelchair access for storage area in main hall, clearing floor space in storage areas, and repainting ADA parking symbol and striping.

Impact of Recommended Works

Site: Impact of site recommendations will include disturbed access to the parking lot and entrance. One month will be required to repair paving, cracking, and trim landscaping.

Exterior Envelope: Impacts of recommendations will improve physical appearance of the Community Center building. Two months will be required to complete all recommendations.

Structure: Performing structural recommendations should have minor impact on the center; completion of the recommendations will result in increased visual structural integrity. One week will be required for structural improvements.

Interior: Performing the interior recommendations will result in the temporary closing of storage areas and kitchen. Portions of the Community Center may be closed off for light renovation. Two months will be required to clean and remodel interiors.

MEP Systems: Minor MEP repairs will have minor impact on building operations. Replacement of the electrical switchboard is a large expense and will require a three day shutdown of the building.

ADA Compliance: Performing the recommended improvements will result in improved accessibility to storage area in main hall and better appearance of parking lot. Three weeks will be required to perform all recommendations.

Facility Description - Community Center


Exterior


Interior


MEP

Building Description

The Community Center is a single story building that was constructed in 1979. The center is located in the Tracy Civic Center Complex near City Hall. The building has a structure consisting mainly of a wood frame construction. The exterior of the Community Center is clad in a beige painted stucco and is similarly painted to other Public Works buildings in the area. Landscaping surrounding the Community Center is appropriately maintained, healthy and serves the facility well. Space is present on site for gatherings and activities that may happen directly adjacent to the building. Floor finishes throughout the interior of the building vary to accommodate the wide range of activities that take place here.

The Community Center houses spaces and equipment for a variety of recreation and socializing activities all may age groups. There are educational, recreational and social events that can be accommodated by this building. Other public activities that take place in this space incorporate casual social and educational opportunities for the community's residences. Multiple offices in this building provide spaces for city employees directing the Community Center's programming. A reception area provides information and direction for building visitors.

Age

The Community Center is 43 years old and was constructed in 1979.

Use of Building

The building is used in the following ways:

- Provides spaces for recreational activities
- Promotes active learning and community involvement
- Used to house special events and community functions
- Rental space is available to the public

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
Community Center - Overall										**3.5**
1	**Site/ Civil/ Landscape**									**4.3**
	1.1	Fences/ Walls/ Gates								4.0
		A.	Perimeter Fencing						N/A	
		B.	Equipment Fencing						N/A	
		C.	Landscape Walls/ Piers / Structures		4					
		D.	Gates		4					
	1.2	Paving								4.3
		A.	Sidewalks/ Walkways/ Crosswalks	5						
		B.	Curbing		4					
		C.	Driveways/ Parking Pavement		4					
		D.	Striping/ Marking/ Speed Bumps		4					
		E.	Patios							
	1.3	Landscape								4.7
		A.	Ground Cover		4					
		B.	Trees	5						
		C.	Irrigation System	5						
	1.4	Site Features/ Fixtures/ Furniture/ Signage								3.7
		A.	Landscape Features/ Play Equipment		4					
		B.	Exterior Lighting Fixtures		4					
		C.	Water Fixtures						N/A	
		D.	Exterior Site Furniture						N/A	
		E.	Site Utility			3				
	1.5	Stormwater Management								5.0
	N O T E S									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**3.6**
	2.1	Exterior Wall Finish								4.0
	2.2	Eaves and Fascias								4.0
	2.3	Doors/ Windows/ Louvers								3.7
		A.	Windows	5						
		B.	Louvers and Vents			3				
		C.	Exterior Doors & Hardware			3				
	2.4	Roofing								2.6
		A.	Roof Surface			3				
		B.	Roof Opening/ Skylight/ Penetrations						N/A	
		C.	Roof Equipment Curbing			3				
		D.	Leakage			3				
		E.	Ponding Water			3				
		F.	Roof Drainage				2			
		G.	Gutters / Downspouts				2			
		H.	Roof Vents				2			
	NOTES	2.4.F: Water staining exists on roof. Roof drainage units are damaged and requires replacement. 2.4.G: No downspout extensions are present from gutters hidden exterior wall surfaces, causing water to flow directly onto the exterior envelope of the building. Staining is caused at minimum. 2.4.H: Roof vents are deteriorated.									
3	**Structure**									**3.6**
	3.1	Foundation/ Footing								3.0
	3.2	Columns								4.0
	3.3	Framing System								3.0
	3.4	Walls								4.0
	3.5	Lateral Force Resistance System								3.0
	3.6	Covered Walkway/Canopy								4.0
	3.7	Chimney								4.0
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**3.2**
	4.1	Ceilings								4.0
		A.	Suspended Ceiling (ACT)			3				
		B.	Gypsum Board						N/A	
		C.	Plaster	5						
		D.	Wood						N/A	
		E.	Other						N/A	
		F.	Exposed						N/A	
	4.2	Flooring								2.8
		A.	Carpet			3				
		B.	Vinyl				2			
		C.	Tile			3				
		D.	Wood						N/A	
		E.	Concrete			3				
	4.3	Interior Wall/Partition Finishes								2.0
	4.4	Interior Doors								3.0
	4.5	Stairs Condition								3.5
		A.	Stairs/ Landing		4					
		B.	Handrails			3				
	4.6	Toilet Condition								3.7
		A.	Toilet Accessories		4					
		B.	Toilet Partitions		4					
		C.	Water Closets		4					
		D.	Urinals		4					
		E.	Lavatorie /Sinks			3				
		F.	Counter			3				
		G.	Shower Compartments						N/A	
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	N O T E S	4.2.B: Vinyl tile flooring in storage rooms is severely deteriorated and worn with missing pieces and many scratches due to high use. Vinyl flooring in the group meeting room is scratched and worn. Vinyl flooring in office areas is discolored and approaching useful service life. 4.3: Wall finishes in storage rooms are severely deteriorated and worn. Wall finishes in multi-use activity room are worn.									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**3.0**
	5.1	Mechanical Systems								2.6
		A.	HVAC			3				
		B.	Control System				2			
		C.	Chiller			3				
		D.	Cooling Towers						N/A	
		E.	Duct Work			3				
		F.	Ventilation\ Air Distribution				2			
		G.	Boilers						N/A	
	5.2	Electrical Systems								3.0
		A.	Transformer			3				
		B.	Switchgear				2			
		C.	Panelboards (Condition & Capacity)				2			
		D.	Devices (Switches & Receptacles)			3				
		E.	Interior Lighting Fixtures		4					
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System		4					
	5.3	Voice and Data Systems								3.0
	5.4	Plumbing Systems								3.3
		A.	Plumbing Fixtures		4					
		B.	Water Distribution System/ Pipes			3				
		C.	Water Heaters			3				
	5.5	Gas Distribution Systems								3.0
	5.6	Fire Suppression System								N/A
	N O T E S	5.1.B: Control room is in a deteriorated state with debris and improperly stored elements. 5.1.F: HVAC floor diffusers need to be cleaned. 5.2.B: Switchgear is original to the building and likely approaching its useful service life. 5.2.C: Conduits and wires around the panelboard are disconnected and poorly arranged.									

System				Condition		
				Compliance	Non-compliance	N/A
6	**ADA Compliance**					
	6.1	Site				
		A.	Accessible Parking Spaces	C		
		B.	Passenger Loading Zones		NC	
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space	C		
		B.	Doors/ Doorways/Gates	C		
		C.	Threshold	C		
		D.	Ramps			N/A
		E.	Stairways			N/A
		F.	Handrails			N/A
		G.	Elevators			N/A
	6.3	Toilet				
		A.	Clearances/Accessible Stall	C		
		B.	Toilet Accessories		NC	
		C.	Water Closets	C		
		D.	Urinals	C		
		E.	Lavatories/ Sinks	C		
		F.	Counters	C		
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry		NC	
		B.	Furniture, Fixtures & Equipment - FF&E		NC	
		C.	Signage		NC	
	NOTES	6.1.B: Exiting passenger loading zone does not meet the ADA requirement. Restripe the loading zone and lettering to meet the ADA code. 6.3.B: Provide ADA compliant toilet accessories. 6.4.A: Provide knee and toe clearance under working surface and front desk counters. 6.4.B: Provide ADA compliant furniture, fixtures and equipment with accessible height and knee and toe clearance. 6.4.C: Provide ADA compliant room signs with tactile text and Braille.				

Photo Documentation | Exterior Overall





















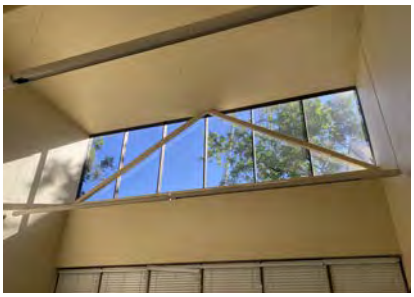


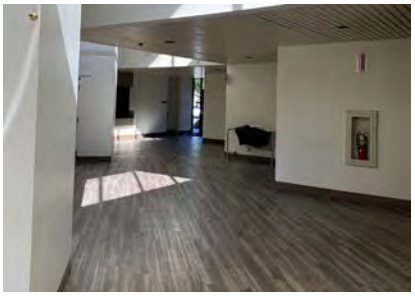


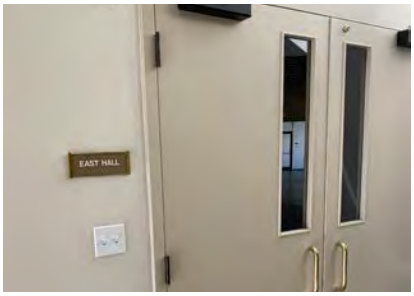
Photo Documentation | Interior Blow Ups













FACILITY CONDITION ASSESSMENT

SENIOR CENTER



Condition Summary - Senior Center

Overall Rating **4.0**





Facility Condition

Site 4.0

Landscaping at the Senior Center gives the facility and grounds a well-maintained and cared for appearance. There is fire service access adjacent to the facility with access to street lighting for maintenance. Sidewalks surround the facility with minimal pavement cracking. Bricks laid at the exterior patio require extensive cleaning in high traffic areas. Site gates and latch mechanisms work well.

Exterior Envelope 3.6

Painted stucco covering the majority of the facility's exterior is in good condition with minimal cracking or chipping. However, some cracking is present where painted stucco meets the foundation. Some exterior metal doors are scratched and/or dented. The rooftop-mounted hose works well for keeping the roof surface maintained and cleaned annually and should be considered for other city facilities. New flashings and gutters have been recently installed.

Structure 3.7

Slabs are in fair condition and show signs of normal wear and tear. No cracking was visible in interior walls and construction. Some cracking is present at the foundation in various places around the facility. Roof structure is in visibly good condition.

Interior 4.5

The lobby has been recently remodeled with new flooring, paint, furniture, and other elements. Lighting fixtures are largely LED throughout. Some rooms contain movable partitions to allow for a separation of one larger room into smaller rooms. Kitchen equipment and finishes are in good condition with much remaining service life. Acoustic ceiling tiles and flooring have recently been replaced and add to the facility's appearance.

MEP Systems 4.1

Electrical equipment is located in an exterior electrical room with direct access from the site. Electrical panels contain additional service life and switchboard is rated at 400 Amps. Fire alarm panel and controls are in good condition and located inside the facility. Maintenance reports changing the facility's RTU3 style air filter is a cumbersome process. A past electrical wiring issue has not resurfaced.

ADA Compliance Needs Compliance

Passenger loading zones require pavement markings to be made compliant. Some issues are present in interior restrooms related to mounting heights and locations for toilet accessories. Kitchen equipment and layout is non-compliant with ADA.

Recommendation Summary - Senior Center


Exterior


Lobby


Restroom

Recommendations

Site: It is recommended to extensively clean bricks located at exterior patio to improve physical appearance.

Exterior Envelope: Recommendations include repainting stucco where walls meet foundation, and replacing or fixing exterior metal doors where scratches and dents are present.

Structure: It is recommended to repair the cracking at foundation surrounding the Senior Center.

Interior: No recommendations for improvement.

MEP Systems: No recommendations for improvement.

ADA Compliance: Recommendations include repainting passenger loading zones, relocating toilet accessories to comply with mounting heights, replacing kitchen appliances and placing them in an ADA compliant layout.

Impact of Recommended Works

Site: Impact of site recommendations are minor. One week will be required to clean bricks.

Exterior Envelope: Executing recommended improvements will disturb some entry and exit access points to repair doors. Other recommendations will have minor impact. Two weeks will be required for all improvements.

Structure: Performing structural recommendations should have minor impact on the center. Two weeks should be required for structural improvements.

Interior: No impact of recommended works.

MEP Systems: No impact of recommended works.

ADA Compliance: Performing the recommended improvements may cause for temporary closing of the Senior Center. Completion of recommendations will result in increased accessibility within the restrooms and kitchen. Two weeks will be needed to repaint passenger loading zones, relocate toilet accessories, and replace kitchen appliances.

Facility Description - Senior Center



Exterior


Interior


MEP

Building Description

The Senior Center is a single story building that was constructed in 1987 and is located off of 9th Street. The building has a structure consisting of wood frame construction. The exterior of the Senior Center is clad with painted stucco with metal doors leading outside. The patio area in the back allows for socializing and activities to be held outdoors for the senior citizens. The site is immediately adjacent to additional outdoor recreation opportunities at the space between the Senior Center and Tracy Water Tower. There is pleasant landscaping toward the main entrance and leads to a recently refurbished interior.

The Senior Center houses spaces and equipment for a variety of recreation and socializing activities for seniors. There are many classes and activities that can be accommodated by this building. Multiple offices in this building provide spaces for city employees directing the Senior Center's programming. A reception area provides information and direction for building visitors.

Age

The Senior Center building is 35 years old and was constructed in 1987.

Use of Building

This building is used in the following ways:

- Houses activities and events for senior citizens
- Hosts various social activities such as a variety of classes and special events.
- Houses City of Tracy Department Offices

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
Senior Center - Overall										**4.0**
1	**Site/ Civil/ Landscape**									**4.0**
	1.1	Fences/ Walls/ Gates								4.0
		A.	Perimeter Fencing		4					
		B.	Equipment Fencing						N/A	
		C.	Landscape Walls/ Piers / Structures		4					
		D.	Gates		4					
	1.2	Paving								3.6
		A.	Sidewalks/ Walkways/ Crosswalks		4					
		B.	Curbing		4					
		C.	Driveways/ Parking Pavement		4					
		D.	Striping/ Marking/ Speed Bumps			3				
		E.	Patios			3				
	1.3	Landscape								3.7
		A.	Ground Cover			3				
		B.	Trees		4					
		C.	Irrigation System		4					
	1.4	Site Features/ Fixtures/ Furniture/ Signage								3.8
		A.	Landscape Features/ Play Equipment		4					
		B.	Exterior Lighting Fixtures			3				
		C.	Water Fixtures						N/A	
		D.	Exterior Site Furniture		4					
		E.	Site Utility		4					
	1.5	Stormwater Management								5.0
	NOTES									

	System			Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**3.6**
	2.1	Exterior Wall Finish								4.0
	2.2	Eaves and Fascias								3.0
	2.3	Doors/ Windows/ Louvers								4.0
		A.	Windows			3				
		B.	Louvers and Vents	5						
		C.	Exterior Doors & Hardware		4					
	2.4	Roofing								3.3
		A.	Roof Surface		4					
		B.	Roof Opening/ Skylight/ Penetrations						N/A	
		C.	Roof Equipment Curbing			3				
		D.	Leakage						N/A	
		E.	Ponding Water				2			
		F.	Roof Drainage			3				
		G.	Gutters / Downspouts		4					
		H.	Roof Vents		4					
	NOTES	2.4.E: Ponding water is observed around roof drainage.								
3	**Structure**									**3.7**
	3.1	Foundation/ Footing								3.0
	3.2	Columns								4.0
	3.3	Framing System								4.0
	3.4	Walls								4.0
	3.5	Lateral Force Resistance System								3.0
	3.6	Covered Walkway/Canopy								N/A
	3.7	Chimney								4.0
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**4.5**
	4.1	Ceilings								4.5
		A.	Suspended Ceiling (ACT)		4					
		B.	Gypsum Board						N/A	
		C.	Plaster	5						
		D.	Wood						N/A	
		E.	Other						N/A	
		F.	Exposed						N/A	
	4.2	Flooring								4.0
		A.	Carpet						N/A	
		B.	Vinyl			3				
		C.	Tile	5						
		D.	Wood		4					
		E.	Concrete		4					
	4.3	Interior Wall/Partition Finishes								5.0
	4.4	Interior Doors								4.0
	4.5	Stairs Condition								N/A
		A.	Stairs/ Landing						N/A	
		B.	Handrails						N/A	
	4.6	Toilet Condition								4.8
		A.	Toilet Accessories	5						
		B.	Toilet Partitions		4					
		C.	Water Closets	5						
		D.	Urinals	5						
		E.	Lavatorie /Sinks	5						
		F.	Counter	5						
		G.	Shower Compartments						N/A	
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**4.1**
	5.1	Mechanical Systems								4.0
		A.	HVAC		4					
		B.	Control System		4					
		C.	Chiller			3				
		D.	Cooling Towers						N/A	
		E.	Duct Work		4					
		F.	Ventilation\ Air Distribution	5						
		G.	Boilers						N/A	
	5.2	Electrical Systems								4.2
		A.	Transformer		4					
		B.	Switchgear			3				
		C.	Panelboards (Condition & Capacity)		4					
		D.	Devices (Switches & Receptacles)	5						
		E.	Interior Lighting Fixtures		4					
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System	5						
	5.3	Voice and Data Systems								4.0
	5.4	Plumbing Systems								4.7
		A.	Plumbing Fixtures	5						
		B.	Water Distribution System/ Pipes		4					
		C.	Water Heaters	5						
	5.5	Gas Distribution Systems								3.0
	5.6	Fire Suppression System								5.0

NOTES

System				Condition		
				Compliance	Non-compliance	N/A
6	ADA Compliance					
	6.1	Site				
		A.	Accessible Parking Spaces	C		
		B.	Passenger Loading Zones	C		
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space	C		
		B.	Doors/ Doorways/Gates	C		
		C.	Threshold	C		
		D.	Ramps			N/A
		E.	Stairways			N/A
		F.	Handrails			N/A
		G.	Elevators			N/A
	6.3	Toilet				
		A.	Clearances/Accessible Stall	C		
		B.	Toilet Accessories	C		
		C.	Water Closets	C		
		D.	Urinals	C		
		E.	Lavatories/ Sinks	C		
		F.	Counters	C		
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry	C		
		B.	Furniture, Fixtures & Equipment - FF&E		NC	
		C.	Signage		NC	
	NOTES	6.4.A: Provide knee and toe clearances under kitchen sink, working surfaces, and front desk. 6.4.C: Provide ADA compliant signage for ADA toilet rooms. Provide ADA compliant room signs with tactile text and Braille.				

Photo Documentation | Exterior Overall

















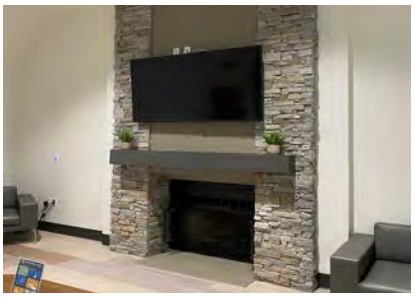




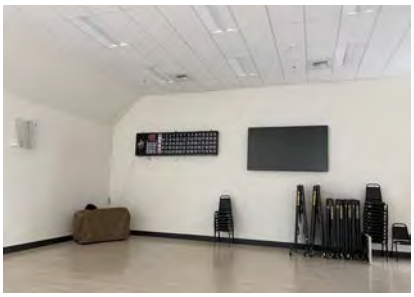
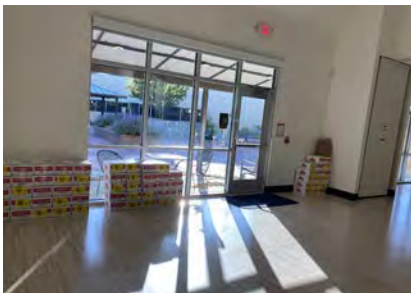
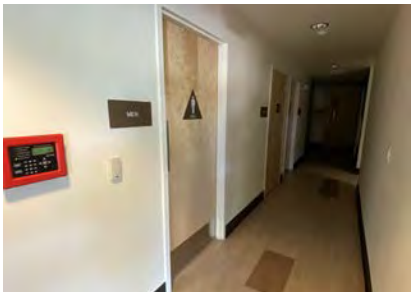
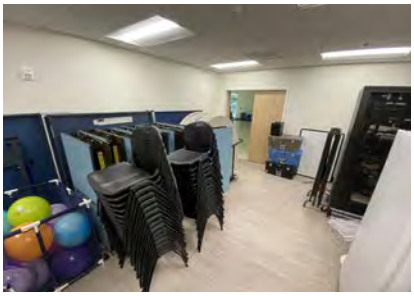




Photo Documentation | Interior Blow Ups



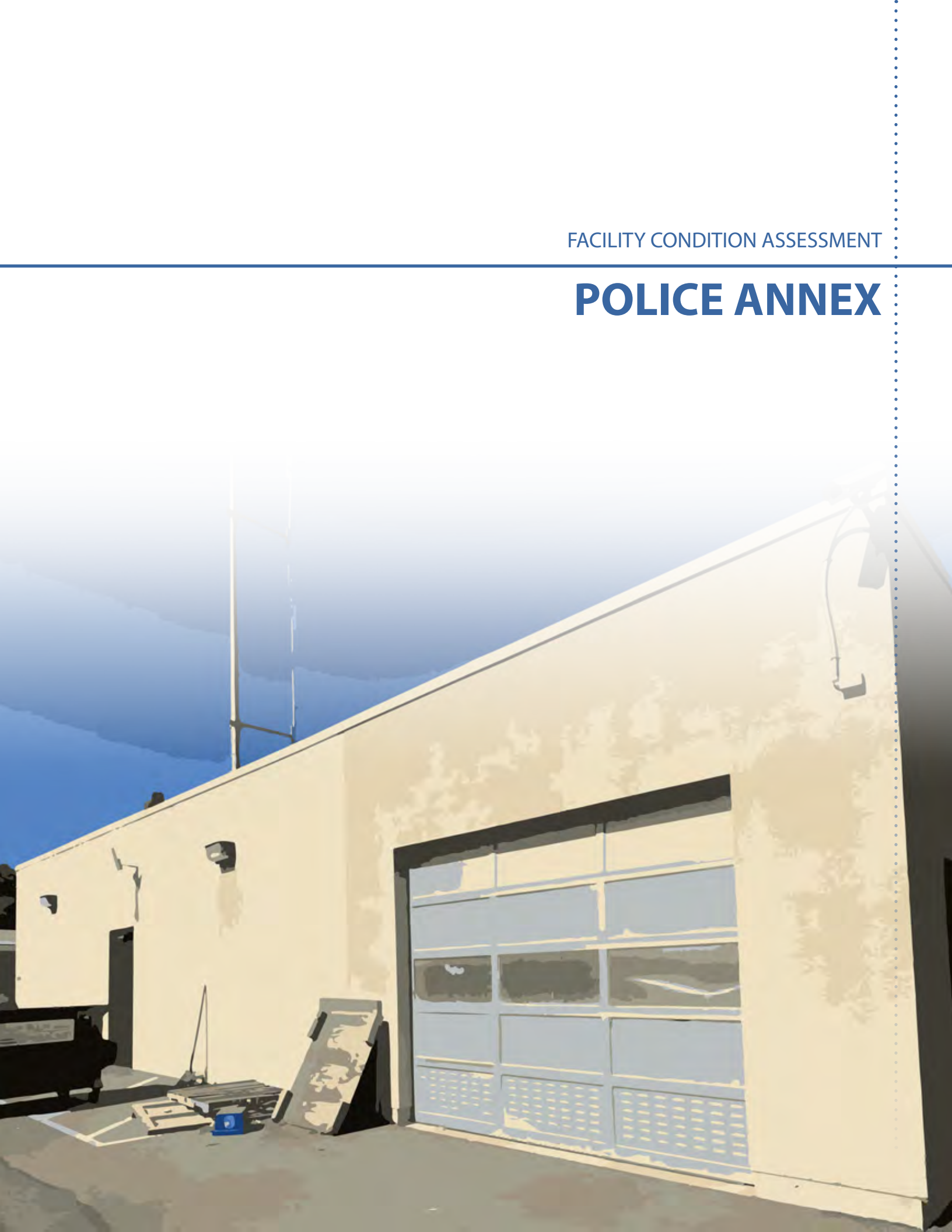






POLICE ANNEX



Condition Summary - Police Annex

Overall Rating **3.4**







Facility Condition

Site 3.5

Striping is faded at the rear gated parking area for police service vehicles. The electronic sliding gate has fair paint finish and a healthy chain but control box is faded. Asphalt is cracking in the center of this parking area. There is a ramp on-site near the Channel 26 side entrance. Site landscaping is in line with the remainder of the Tracy Civic Center complex and is overall in good condition.

Exterior Envelope 3.3

Painted concrete masonry exterior is faded and chipping in areas, especially where items are mounted on the exterior. Stucco is chipped and deteriorated in some areas. Mounted light fixtures contain discolored lenses and finish due to weathering and age. Exterior door sills contain no protection in many instances. Garage door opening to rear parking area is damaged with scratches and dents. Building signage is beginning to deteriorate and approaching its useful service life.

Structure 3.3

Cracking is present in concrete flooring of previous jail area alluding to settling and shifting of the building's structure. Additional cracking was observed in utility closet wall in jail area. Exposed ductwork in equipment room requires additional bracing.

Interior 3.7

The area of the facility that previously housed city jail space contains metal doors with scuffed paint finished and small dents. Lighting is lacking in this area and is currently one small recessed fixture per room. Ceiling stains are present in this area and require further investigation. Ceiling tiles are stained throughout the facility especially in conference areas. Wood doors have wear and are 20-min fire rated. Some door hinges have been replaced. Channel 26 room is somewhat crowded but in good condition overall. Carpeting is stained at the entrance to this area. Vinyl flooring in areas including kitchenette/break areas is scratched, bubbling, loose, or missing. At least one lighting fixture is hanging haphazardly below the ceiling system in kitchenette. Visible aspects of roof system are discolored and faded. Some restroom flooring tiles are cracked with stained grout. Lighting at public lobby near service center is severely lacking with standard incandescent bulbs in discolored and undersized recessed mounts. The roof was not accessible at the time of site visit.

MEP Systems 3.2

An out-of-service sink in the jail area is leaking. MEP room in this area has a boiler that appears to be original to the building that is also leaking and discolored. The building's fire suppression system was installed sometime after construction and appears to be in good condition with the exception of some sprinkler heads that are out of plumb with the ceiling system. Break items are stored in front of electrical panels. The main Westinghouse electrical panel is original to the building's construction and rated at 800 A. Some service life is remaining. The original phone system is still in the building, located in the IT room which is climate-controlled via wall-mounted AC units. Exterior fire sprinkler valve with gauges contains slight rusting at connection points and structural supports.

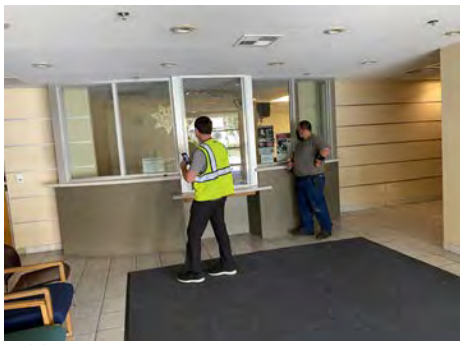
Condition Summary - Police Annex

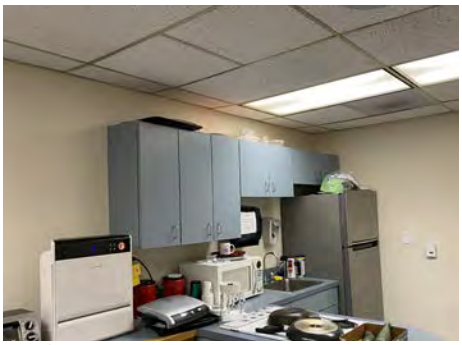
ADA Compliance **Needs Compliance**

Kitchenettes throughout the Police Annex are non-compliant due to lack of counter knee space and other items. Restroom accessories are non-compliant in some instances. Clear floor space in certain areas of the building is limited due to storage of items.

Recommendation Summary - Police Annex


Exterior


Lobby


Break Room

Recommendations

Site: Recommendations include repainting striping in parking area for police service vehicles, repainting control box for electronic sliding gate, and repairing the cracking in the center of the rear parking area.

Exterior Envelope: It is recommended to repaint concrete masonry exterior, replace mounted light fixtures, provide protection for exterior door sills, replace garage door, and replace building signage.

Structure: Recommendations include repairing cracks in concrete floor and in utility closet wall in jail area and adding bracing to exposed ductwork.

Interior: Recommended actions include repairing and repainting metal doors in city jail space, adding lighting in same space, cleaning ceiling stains, and replacing ceiling tiles. In addition, carpeting should be cleaned, vinyl flooring should be replaced, lighting fixtures must be rehung, and lighting should be added in the public lobby with appropriate color and sizing.

MEP Systems: Improvements include replacing the sink in jail area, replacing boiler, re-plumbing some sprinkler heads, and replacing exterior sprinkler valves.

ADA Compliance: Recommendations include rebuilding kitchenettes to provide adequate knee space, relocating restroom accessories to be compliant, and clearing floor space to increase accessibility compliance.

Impact of Recommended Works

Site: Impacts of site recommendations include a disturbed access to the building for police service vehicles. Two weeks will be required to repaint all necessary areas and to repair cracking in asphalt.

Exterior Envelope: Impacts of recommendations include disturbed experience within the building; completion of the recommendations will take three weeks.

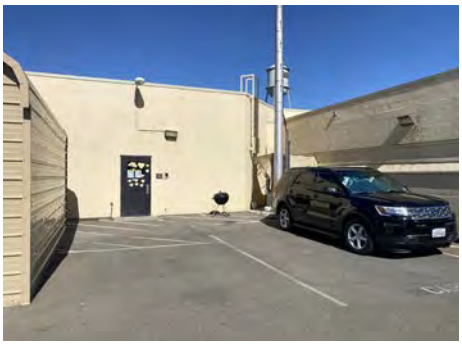
Structure: Performing structural recommendations should have fair impact on the building. One month will be required to complete structural recommendations and portions of the building may require closing when additional bracing installed.

Interior: Executing recommended improvements will include temporary closing of the Police Annex building. Four weeks will be required to remodel interior elements.

MEP Systems: Some additional design may be required for MEP improvements. HVAC systems may be shut down for a week period during renovations.

ADA Compliance: Performing the recommended improvements will have a fair impact on the building's operations. Three weeks will be required to replace counters, relocate accessories, and clear floor space.

Facility Description - Police Annex


Exterior


Interior


MEP

Building Description

The Police Annex is a single story building that was constructed in 1978. The Police Annex is located off of 10th St. and directly between Tracy City Hall and Lolly Hansen Senior Center. The building has a structure consisting of masonry with a wood roof. The exterior is painted concrete masonry and there is a parking lot located just being the building.

The building houses the City of Tracy Channel 26 television operations and additional Police Department operations that can not be housed in the main headquarters building. Previously, the Police Annex was used to house Parks and Community Services Offices.

Age

The Police Annex building is 44 years old and was constructed in 1978.

Use of Building

The building is used in the following ways:

- Houses office space for Police Department administrative functions
- Houses Channel 26 television storage and operations.

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
Police Annex - Overall										**3.4**
1	**Site/ Civil/ Landscape**									**3.5**
	1.1	Fences/ Walls/ Gates								3.3
		A.	Perimeter Fencing		4					
		B.	Equipment Fencing						N/A	
		C.	Landscape Walls/ Piers / Structures			3				
		D.	Gates			3				
	1.2	Paving								3.3
		A.	Sidewalks/ Walkways/ Crosswalks		4					
		B.	Curbing			3				
		C.	Driveways/ Parking Pavement			3				
		D.	Striping/ Marking/ Speed Bumps			3				
		E.	Patios						N/A	
	1.3	Landscape								4.0
		A.	Ground Cover		4					
		B.	Trees		4					
		C.	Irrigation System		4					
	1.4	Site Features/ Fixtures/ Furniture/ Signage								3.0
		A.	Landscape Features/ Play Equipment						N/A	
		B.	Exterior Lighting Fixtures			3				
		C.	Water Fixtures			3				
		D.	Exterior Site Furniture						N/A	
		E.	Site Utility			3				
	1.5	Stormwater Management								4.0
	N O T E S									

	System			Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**3.3**
	2.1	Exterior Wall Finish								3.0
	2.2	Eaves and Fascias								4.0
	2.3	Doors/ Windows/ Louvers								3.0
		A.	Windows		4					
		B.	Louvers and Vents			3				
		C.	Exterior Doors & Hardware				2			
	2.4	Roofing								3.2
		A.	Roof Surface		4					
		B.	Roof Opening/ Skylight/ Penetrations						N/A	
		C.	Roof Equipment Curbing			3				
		D.	Leakage						N/A	
		E.	Ponding Water						N/A	
		F.	Roof Drainage			3				
		G.	Gutters / Downspouts			3				
		H.	Roof Vents			3				
	N O T E S	2.3.C: Exterior doors contain scratching and scuffing leading to rear parking area.								
3	**Structure**									**3.3**
	3.1	Foundation/ Footing								4.0
	3.2	Columns								3.0
	3.3	Framing System								4.0
	3.4	Walls								3.0
	3.5	Lateral Force Resistance System								3.0
	3.6	Covered Walkway/Canopy								3.0
	3.7	Chimney								N/A
	N O T E S									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**3.7**
	4.1	Ceilings								2.8
		A.	Suspended Ceiling (ACT)				2			
		B.	Gypsum Board			3				
		C.	Plaster				2			
		D.	Wood						N/A	
		E.	Other		4					
		F.	Exposed						N/A	
	4.2	Flooring								4.0
		A.	Carpet	5						
		B.	Vinyl						N/A	
		C.	Tile		4					
		D.	Wood						N/A	
		E.	Concrete			3				
	4.3	Interior Wall/Partition Finishes								3.0
	4.4	Interior Doors								4.0
	4.5	Stairs Condition								N/A
		A.	Stairs/ Landing						N/A	
		B.	Handrails						N/A	
	4.6	Toilet Condition								4.6
		A.	Toilet Accessories	5						
		B.	Toilet Partitions	5						
		C.	Water Closets			3				
		D.	Urinals						N/A	
		E.	Lavatorie /Sinks	5						
		F.	Counter	5						
		G.	Shower Compartments						N/A	
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	NOTES	4.1.A: Acoustic ceiling tiles are damaged and stained in office portions of the building. 4.1.C: Plaster ceiling systems contain staining in areas and deterioration around ceiling mounted accessories.								

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**3.2**
	5.1	Mechanical Systems								2.8
		A.	HVAC			3				
		B.	Control System			3				
		C.	Chiller			3				
		D.	Cooling Towers						N/A	
		E.	Duct Work			3				
		F.	Ventilation\ Air Distribution				2			
		G.	Boilers						N/A	
	5.2	Electrical Systems								2.8
		A.	Transformer			3				
		B.	Switchgear			3				
		C.	Panelboards (Condition & Capacity)			3				
		D.	Devices (Switches & Receptacles)			3				
		E.	Interior Lighting Fixtures				2			
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System			3				
	5.3	Voice and Data Systems								2.0
	5.4	Plumbing Systems								3.7
		A.	Plumbing Fixtures		4					
		B.	Water Distribution System/ Pipes			3				
		C.	Water Heaters		4					
	5.5	Gas Distribution Systems								4.0
	5.6	Fire Suppression System								4.0
	NOTES	5.1.F: Air diffusers and fans are worn and deteriorated and approaching their useful service life. 5.2.E: Lighting fixtures building-wide are damaged, broken and yellowed.								

System				Condition		
				Compliance	Non-compliance	N/A
6	ADA Compliance					
	6.1	Site				
		A.	Accessible Parking Spaces	C		
		B.	Passenger Loading Zones			N/A
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space		NC	
		B.	Doors/ Doorways/Gates		NC	
		C.	Threshold	C		
		D.	Ramps	C		
		E.	Stairways	C		
		F.	Handrails		NC	
		G.	Elevators			N/A
	6.3	Toilet				
		A.	Clearances/Accessible Stall	C		
		B.	Toilet Accessories		NC	
		C.	Water Closets	C		
		D.	Urinals	C		
		E.	Lavatories/ Sinks	C		
		F.	Counters	C		
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry		NC	
		B.	Furniture, Fixtures & Equipment - FF&E		NC	
		C.	Signage		NC	
	NOTES	6.2.A: Remove obstacles on accessible routes for enough open space clearance. 6.2.B: Provide ADA compliant door push paddle to exit doors. 6.2.F: Provide ADA compliant handrails and guardrails to exterior ramp. 6.3.B: Provide ADA compliant toilet accessories. 6.4.A: Provide knee and toe clearances under working surfaces, and front desk. 6.4.B: Provide ADA compliant furniture, fixtures and equipment with accessible height and knee and toe clearances. 6.4.C: Provide ADA compliant room signage with tactile text and Braille. Provide ADA compliant toilet room signage.				

Photo Documentation | Exterior Overall







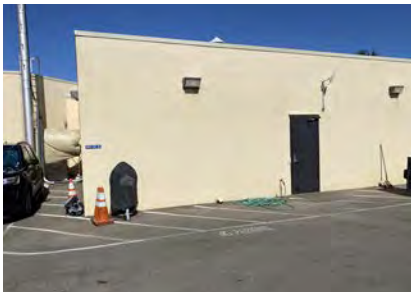














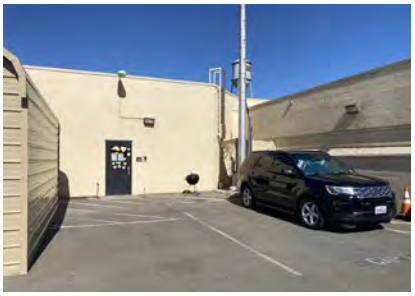
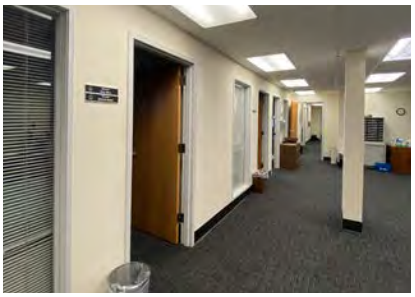
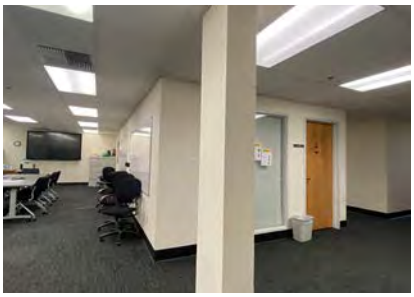
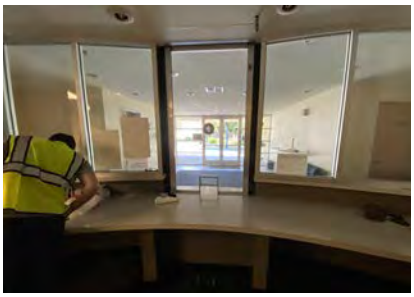
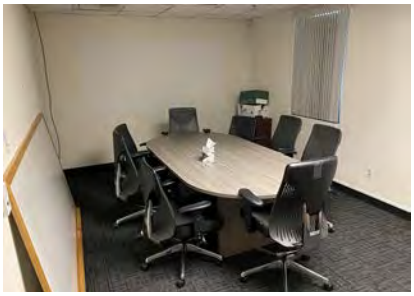
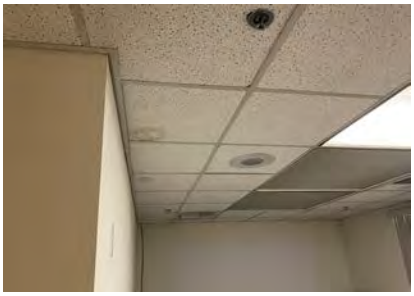




Photo Documentation | Interior Blow Ups






FACILITY CONDITION ASSESSMENT

FIRE ADMINISTRATION



Condition Summary - Fire Administration

Overall Rating **3.8**





Facility Condition

Site 3.9

Site elements are plenty and include parking, landscaping, site lighting similar to that used at the Civic Center and a flag pole. Sidewalks along central avenue include poured concrete and geometrically arranged masonry which adds to the facility's visual appearance. Railings near main public entrance contain worn and faded paint due to use and sun. Historical Tracy fireman statue is well-kept. Surrounding bench area would benefit from cleaning. Vegetation is healthy throughout. Sidewalk near main parking area is lightly discolored in areas. Parking lot paving contains stains but surface is not yet deteriorating at a quick rate. Parking lot striping is faded. Site signage is in good condition but dirty at exposed top surfaces. Wood fence near rear of building is weathered but in fairly good condition.

Exterior Envelope 4.0

Painted stucco exterior siding contains much cracking, mostly near ground surface but all throughout stucco surface including areas of cracking to roof parapet. Paint of various architectural components gives the facility a premium appearance but paint is starting to fade from exterior surfaces at most areas. Mounted gutters are in good condition with minimal denting and lack chipped paint. Mounted light fixtures contain faded housing and are adding to staining at stucco siding. Metal door are rear of building to parking lot is stained with faded paint and accessibility signage. Porch at second story overlooking Central Avenue requires cleaning at floor surface due to dirt and debris buildup. Skylight lenses are slightly dirty but tinting is holding up well. Garage door surfaces show no signs of deterioration. TPO roof surface is in good condition but stained and discolored in areas with light evidence of ponding water.

Structure 3.4

Cracking in stucco surfaces throughout exterior of facility suggests that shifting of the structure may be happening at a more frequent rate than is standard. Additional cracking is present at interior at interior CMU construction and at door frames of MEP room which alludes to stucco cracking being in the concrete wall structure rather than just stucco deterioration. Cracking is also present painted walls in garage area, especially around window. Large fire protection piping is appropriately braced to walls and ceiling structure. Cracking is present at concrete flooring of MEP area.

Interior 3.6

Carpeting and vinyl flooring surfaces of living area contain minimal signs of wear with light scuffs at kitchen floor. Can lighting is detaching at painted ceiling in living area. Paint is chipped at corners of walls in living area. Vinyl tile flooring is well-polished throughout main facility areas but staining is present at seams under drinking fountain and in a few other areas including near baseboards. Break room flooring contains excessive wear compared with the remainder of the facility's vinyl flooring. Painted wood baseboards are dirty and heavily scuffed. Rectangular acoustic ceiling tiles contain grid components that are out of plumb in areas. Restroom tile flooring and other surfaces are in good condition and holding up well to use. Lighting types vary throughout the facility but are generally a type of recessed rectangular fixture. These fixtures are in fair to good condition with some lenses loose or discolored. A large stain is present on a singular acoustic ceiling tile near office spaces by public entrance and reception. Some wear is present at wooden gate

Condition Summary - Fire Administration

separating lobby from staff area.

MEP Systems 3.9

Weathering protection for piping to exterior boiler is missing at corner bend near rear entrance. Insulation for some piping components in MEP room is stained at multiple areas. Water piping is located over electrical equipment which violates the building code. Elevator components contain very minimal visual signs of wear, and interior cab components appear freshly installed. A rear garage area houses most of the facility's electrical components including main electrical switchboards, power maintaining system. The facility contains two State water heaters installed in 2005, likely with a moderate amount of remaining useful service life (3-5 years). Air handler and ductwork is in good condition.

ADA Compliance Needs Compliance

Clear floor space is lacking in some areas due to stored items. Handrails for interior stairs were added to be made compliant. Elements of break areas in living space and main facility are non-compliant.

Recommendation Summary - Fire Administration


Exterior


Lobby


Kitchen

Recommendations

Site: Recommendations include repainting railings near main public entrance, cleaning bench area, repainting parking lot striping, and cleaning site signage.

Exterior Envelope: It is recommended to repair cracking throughout exterior, repaint exterior surfaces in similar areas, repaint metal door at rear of building, clean floor surface of porch at second story, and clean TPO roof surface.

Structure: Recommendations include assessing structural integrity of building and repairing all cracking in various locations throughout the building.

Interior: Recommended actions include cleaning light scuffs at kitchen floor, reattaching can lighting at painted ceiling in living area, repainting wall corners in same area, cleaning stains at seams under drinking fountain and baseboards, replacing break room flooring, and cleaning painted wood baseboards. Additional recommendations include cleaning and tightening light fixtures lenses and replacing singular stained acoustic ceiling tile by reception area.

MEP Systems: Improvements should include adding weathering protection for piping, cleaning insulation for some piping components and relocating water piping. Provide fix to boiler system which may include new boiler for facility.

ADA Compliance: Recommendations include clearing floor space and relocating and repairing elements of break areas in living space and main facility.

Impact of Recommended Works

Site: Impact of site recommendations are minor. One week will be required to perform all recommendations.

Exterior Envelope: Impacts of recommendations will result in improved appearance of exterior. Two weeks will be required to complete all recommended actions.

Structure: Performing structural recommendations are important to ensure life safety of the facility.

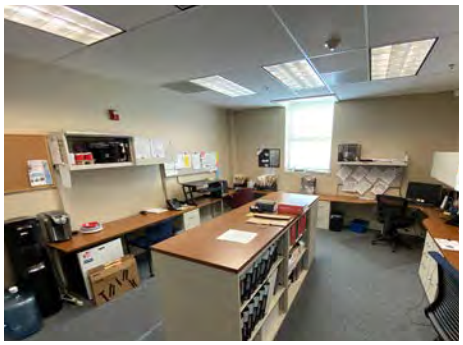
Interior: Performing the interior recommendations will improve the physical appearance of the interiors of the fire administration building and will improve experience of employees. Three weeks will be required to repair, clean, and repaint all necessary elements.

MEP Systems: One month will be required for minor MEP improvements. Assessing and providing proper fix to the heating and cooling systems may take longer depending on the selected solution.

ADA Compliance: Executing recommended improvements will increase accessibility within break areas. Two weeks will be required to clear break areas.

Facility Description - Fire Administration


Exterior


Interior


MEP

Building Description

The Fire Administration was originally a single story building that was constructed 1917 and is located on N Central Avenue. The building was remodeled in 2006 to add a second story. The building construction consists of a masonry structure and a wood roof. The exterior is clad with beige painted stucco and some exposed and painted masonry. Directly adjacent to the building is a parking lot designated for the employees of the Fire Administration building. The landscaping is appropriate and well maintained for the building use with site features paying homage to past City of Tracy firefighters. The balcony of the building allows for expansive views of the downtown area from the second floor.

The Fire Administration building houses spaces and equipment for offices and living quarters for on-duty firefighters. Multiple offices in this building provide spaces for employees directing department operations and daily tasks. There is a break room with a kitchenette for employees. Additionally, a classroom space is provided for classes and educational purposes. The classroom area doubles as a meeting location.

Age

The Fire Administration building is 105 years old and was constructed in 1917.

Use of Building

The building is used in the following ways:

- Houses offices for Fire Department staff
- Provides an administration facility for the Fire Department
- Houses living quarters for fire fighters

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
Fire Administration - Overall										**3.8**
1	**Site/ Civil/ Landscape**									**3.9**
	1.1	Fences/ Walls/ Gates								3.5
		A.	Perimeter Fencing			3				
		B.	Equipment Fencing						N/A	
		C.	Landscape Walls/ Piers / Structures		4					
		D.	Gates						N/A	
	1.2	Paving								3.4
		A.	Sidewalks/ Walkways/ Crosswalks			3				
		B.	Curbing		4					
		C.	Driveways/ Parking Pavement		4					
		D.	Striping/ Marking/ Speed Bumps			3				
		E.	Patios			3				
	1.3	Landscape								4.3
		A.	Ground Cover		4					
		B.	Trees		4					
		C.	Irrigation System	5						
	1.4	Site Features/ Fixtures/ Furniture/ Signage								3.3
		A.	Landscape Features/ Play Equipment		4					
		B.	Exterior Lighting Fixtures			3				
		C.	Water Fixtures						N/A	
		D.	Exterior Site Furniture						N/A	
		E.	Site Utility			3				
	1.5	Stormwater Management								5.0
	N O T E S									

			System	Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**4.0**
	2.1		Exterior Wall Finish							4.0
	2.2		Eaves and Fascias							5.0
	2.3		Doors/ Windows/ Louvers							3.5
		A.	Windows			3				
		B.	Louvers and Vents						N/A	
		C.	Exterior Doors & Hardware		4					
	2.4		Roofing							3.7
		A.	Roof Surface		4					
		B.	Roof Opening/ Skylight/ Penetrations	5						
		C.	Roof Equipment Curbing			3				
		D.	Leakage						N/A	
		E.	Ponding Water						N/A	
		F.	Roof Drainage		4					
		G.	Gutters / Downspouts			3				
		H.	Roof Vents			3				
	N O T E S									
3	**Structure**									**3.4**
	3.1		Foundation/ Footing							3.0
	3.2		Columns							5.0
	3.3		Framing System							3.0
	3.4		Walls							3.0
	3.5		Lateral Force Resistance System							3.0
	3.6		Covered Walkway/Canopy							N/A
	3.7		Chimney							N/A
	N O T E S									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**3.6**
	4.1	Ceilings								3.3
		A.	Suspended Ceiling (ACT)			3				
		B.	Gypsum Board						N/A	
		C.	Plaster		4					
		D.	Wood						N/A	
		E.	Other						N/A	
		F.	Exposed			3				
	4.2	Flooring								3.7
		A.	Carpet		4					
		B.	Vinyl						N/A	
		C.	Tile		4					
		D.	Wood						N/A	
		E.	Concrete			3				
	4.3	Interior Wall/Partition Finishes								3.0
	4.4	Interior Doors								3.0
	4.5	Stairs Condition								4.5
		A.	Stairs/ Landing		4					
		B.	Handrails	5						
	4.6	Toilet Condition								4.0
		A.	Toilet Accessories		4					
		B.	Toilet Partitions						N/A	
		C.	Water Closets						N/A	
		D.	Urinals						N/A	
		E.	Lavatorie /Sinks		4					
		F.	Counter						N/A	
		G.	Shower Compartments		4					
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**3.9**
	5.1	Mechanical Systems								3.5
		A.	HVAC		4					
		B.	Control System	5						
		C.	Chiller			3				
		D.	Cooling Towers						N/A	
		E.	Duct Work		4					
		F.	Ventilation\ Air Distribution			3				
		G.	Boilers				2			
	5.2	Electrical Systems								4.0
		A.	Transformer		4					
		B.	Switchgear		4					
		C.	Panelboards (Condition & Capacity)		4					
		D.	Devices (Switches & Receptacles)	5						
		E.	Interior Lighting Fixtures			3				
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System		4					
	5.3	Voice and Data Systems								4.0
	5.4	Plumbing Systems								4.0
		A.	Plumbing Fixtures	5						
		B.	Water Distribution System/ Pipes		4					
		C.	Water Heaters			3				
	5.5	Gas Distribution Systems								4.0
	5.6	Fire Suppression System								4.0
	NOTES	5.1.G: Boiler located in the rear of the building has many issues with maintaining constant temperate as reported by maintenance staff.								

System				Condition		
				Compliance	Non-compliance	N/A
6	**ADA Compliance**					
	6.1	Site				
		A.	Accessible Parking Spaces	C		
		B.	Passenger Loading Zones		NC	
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space	C		
		B.	Doors/ Doorways/Gates	C		
		C.	Threshold	C		
		D.	Ramps			N/A
		E.	Stairways		NC	
		F.	Handrails		NC	
		G.	Elevators		NC	
	6.3	Toilet				
		A.	Clearances/Accessible Stall	C		
		B.	Toilet Accessories		NC	
		C.	Water Closets	C		
		D.	Urinals	C		
		E.	Lavatories/ Sinks	C		
		F.	Counters	C		
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry		NC	
		B.	Furniture, Fixtures & Equipment - FF&E		NC	
		C.	Signage		NC	
	N O T E S	6.1.B: Existing passenger loading zone does not meet the ADA requirement. Restripe the loading zone and lettering to meet the ADA requirement. 6.2.E: Interior stair does not meet the ADA requirement. 6.2.F: Interior stair handrails and guard rails are not provided and do not meet the ADA requirement. 6.2.G: Elevator does not meet the ADA requirement. 6.3.B: Provide ADA compliant toilet accessories. 6.4.A: Provide knee and toe clearances under sink, working surfaces, and front desk counters. 6.4.B: Provide ADA compliant furniture, fixtures and equipment with accessible height and knee and toe clearances. 6.4.C: Provide ADA compliant exiting signage, ADA signage and room signage.				

Photo Documentation | Exterior Overall







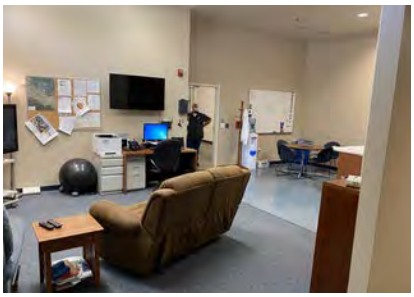
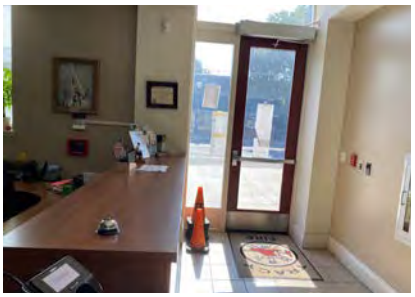
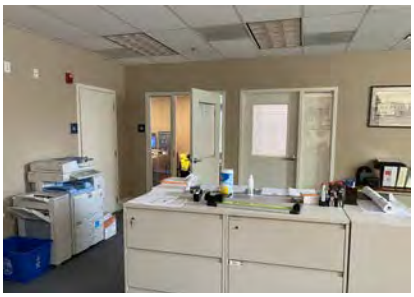


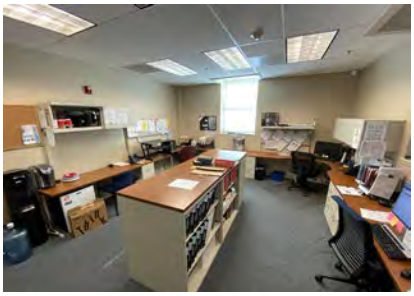


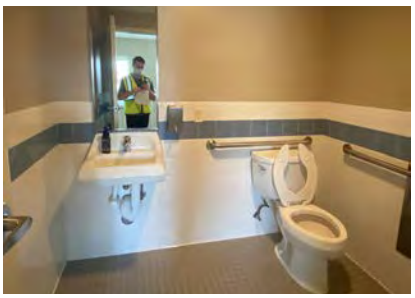


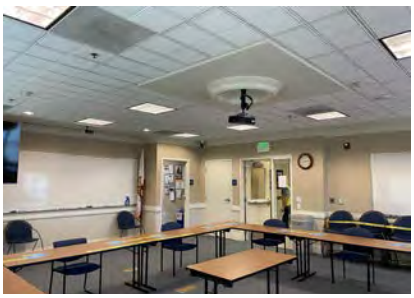

Photo Documentation | Interior Blow Ups







FACILITY CONDITION ASSESSMENT

TRACY TRANSIT STATION



Condition Summary - Tracy Transit Station (New)

Overall Rating **3.8**







Facility Condition

Site 3.9

Site signage and supports are in good condition. Parking pavement is cracked in many places with faded striping at both accessible and standard spaces. Concrete tile at site adds to the appearance but is cracked and dirty in high traffic areas. Landscaping serves the facility fairly but would benefit from improvement. Vandalism is present at landscaping planters and site elements. Paint is chipping from site garbage receptacles.

Exterior Envelope 3.7

Exterior window frames contain chipping paint in multiple areas. Water marks are present below window sills at the exterior of the facility. Minor cracking has observed at exterior wall structure. Clay tile flooring adjacent to exterior entrances is generally in good condition but dirty. Clay roof tiles are in good condition overall but some contain chipping. Exterior doors and hardware are past useful service life with lots of scuffs and scratches present. Roof drains at access platform require replacement.

Structure 4.0

Minimal cracking is present at interior tile flooring in lobby. No structural cracking was observed at walls. Roof structure is in sound condition as observed visually. Minimal cracking present at exterior finishes. Roof structure contains cracking at parapets.

Interior 3.8

Floor tile is cracked in places at the facility's interior including at the lobby. Other flooring elements are worn beyond standard service life including vinyl flooring in storage areas and carpeting in office areas. Velvet transition strips make audible cracking noise when walking over and may not be secure in places. Acoustic ceiling tile is in fair condition overall but multiple water marks were observed in office areas, hinting at the presence of plumbing system leakage. Leaks are present on ceiling system above the all-gender restroom in the office area. A movable partition exists between rooms 103 and 104. Restroom finishes are slightly outdated but otherwise holding up well.

MEP Systems 3.8

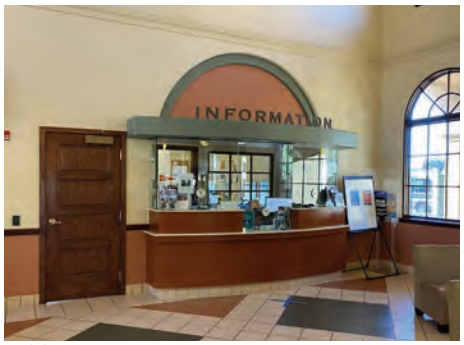
Evidence of plumbing system leaks are shown by damaged ceiling tiles and toilets are showing leakage at bases. Water piping is present over electrical equipment in Room 109, a code violation. HVAC system requires upgrade and renovation to meet needs. Mechanical equipment is largely located on a platform near the clock tower. Roof mounted A/C units serve the conference room area. An 800 Amp main switchboard serves the facility well and located in the same area with fire alarm and Internet server equipment.

ADA Compliance **Needs Compliance**

Truncated domes or other detectable warning are not provided appropriately at site and parking area. ADA parking stalls require flat pavement. Restroom signage is lacking in main hallway and some accessories are not compliant.

Recommendation Summary - Tracy Transit Station (New)


Exterior



Lobby


Bathroom

Recommendations

Site: Recommendations include repairing cracks in parking pavement, repainting markings throughout same area, repairing and cleaning concrete tile, cleaning all present vandalism, and repainting garbage receptacles.

Exterior Envelope: It is recommended to repaint exterior window frames, clean water marks bellow window sills, fill in cracking at exterior wall structure, clean clay tile flooring, repair chipped clay roof tiles, replace exterior doors and hardware and replace roof drains at access platform.

Structure: Recommendations include repairing cracking in the parapets at the roof structure.

Interior: Recommended actions include repairing minimal cracking at interior tile flooring in lobby, replacing vinyl flooring in storage areas, replacing carpeting in office areas, securing velvet transition strips, repairing all leaking in office area and all gender bathroom within ceiling system and modernizing restroom finishes.

MEP Systems: Improvements should include repairing plumbing system leaks within ceiling system, relocating water piping in Room 109 and renovating the HVAC system to meet needs.

ADA Compliance: It is recommended to provide appropriate truncated domes or other detectable warning at site and parking area, flatten ADA parking stalls, add restroom signage in main hallway and relocate restroom accessories to be compliant.

Impact of Recommended Works

Site: Impact of site recommendations include disturbed access to the site and station. Three weeks will be required to clean, repair, and repaint all necessary elements.

Exterior Envelope: Impacts of recommendations are fair and will require two weeks to complete executions. Completion of these recommendations will result in improved physical appearance.

Structure: Performing structural recommendations should have minor impact on the station. One week will required for structural improvements.

Interior: Performing the interior recommendations will cause temporary closing of the station. Four weeks will be required to replace necessary flooring, repair areas of leakage, and execute other minor repairs.

MEP Systems: Impacts may require portions of the Transit Station to be closed for renovations. HVAC system replacement will likely require outside design services.

ADA Compliance: Executing recommended improvements include impacts to access the site and station; completion of recommendations will result in increased accessibility in and around the building. Two weeks will be required to complete all recommendations.

Facility Description - Tracy Transit Station (New)


Exterior


Interior


MEP

Building Description

The Tracy Transit Station is a single story building that was constructed in 2010. The transit station is located on E. 6th Street. The structure of the building main consists of a wood frame construction. The exterior of the building is clad with a beige painted stucco and the entrance is designed in a mission style. Exterior spaces are equipped with benches for seating under trees that are appropriately placed for shading. Landscaping largely consists of trees and clay planters. The transit station provides 220 free parking spaces for users of public transportation.

The Tracy Transit Station houses spaces for offices and storage spaces for staff to use.

Age

The Tracy Transit Station is 12 years old and was constructed in 2010.

Use of Building

The building is used in the following ways:

- Serves as a bus hub for transportation on local, commuter, and long-distance bus services
- Provides Paratransit Service which is a door to door service available for ADA/Medicare passengers and Tracy residents age 65 and older.
- TRACER provides ADA Paratransit Service to visitors with disabilities who do not live in the City of Tracy service area
- Subsidized Taxi Service

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
Tracy Transit Station (New) - Overall										**4.0**
1	**Site/ Civil/ Landscape**									**3.9**
	1.1	Fences/ Walls/ Gates								3.0
		A.	Perimeter Fencing			3				
		B.	Equipment Fencing						N/A	
		C.	Landscape Walls/ Piers / Structures			3				
		D.	Gates						N/A	
	1.2	Paving								3.5
		A.	Sidewalks/ Walkways/ Crosswalks		4					
		B.	Curbing		4					
		C.	Driveways/ Parking Pavement			3				
		D.	Striping/ Marking/ Speed Bumps			3				
		E.	Patios						N/A	
	1.3	Landscape								4.3
		A.	Ground Cover		4					
		B.	Trees		4					
		C.	Irrigation System	5						
	1.4	Site Features/ Fixtures/ Furniture/ Signage								3.8
		A.	Landscape Features/ Play Equipment			3				
		B.	Exterior Lighting Fixtures		4					
		C.	Water Fixtures						N/A	
		D.	Exterior Site Furniture			3				
		E.	Site Utility	5						
	1.5	Stormwater Management								5.0
	N O T E S									

	System			Condition: Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**3.9**
	2.1	Exterior Wall Finish								4.0
	2.2	Eaves and Fascias								4.0
	2.3	Doors/ Windows/ Louvers								4.0
		A.	Windows		4					
		B.	Louvers and Vents						N/A	
		C.	Exterior Doors & Hardware		4					
	2.4	Roofing								3.5
		A.	Roof Surface			3				
		B.	Roof Opening/ Skylight/ Penetrations						N/A	
		C.	Roof Equipment Curbing		4					
		D.	Leakage						N/A	
		E.	Ponding Water						N/A	
		F.	Roof Drainage		4					
		G.	Gutters / Downspouts						N/A	
		H.	Roof Vents			3				
	NOTES									
3	**Structure**									**4.5**
	3.1	Foundation/ Footing								5.0
	3.2	Columns								4.0
	3.3	Framing System								4.0
	3.4	Walls								5.0
	3.5	Lateral Force Resistance System								5.0
	3.6	Covered Walkway/Canopy								4.0
	3.7	Chimney								N/A
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**3.8**
	4.1	Ceilings								4.0
		A.	Suspended Ceiling (ACT)			3				
		B.	Gypsum Board						N/A	
		C.	Plaster	5						
		D.	Wood						N/A	
		E.	Other						N/A	
		F.	Exposed						N/A	
	4.2	Flooring								3.0
		A.	Carpet			3				
		B.	Vinyl						N/A	
		C.	Tile			3				
		D.	Wood						N/A	
		E.	Concrete							
	4.3	Interior Wall/Partition Finishes								4.0
	4.4	Interior Doors								4.0
	4.5	Stairs Condition								N/A
		A.	Stairs/ Landing						N/A	
		B.	Handrails						N/A	
	4.6	Toilet Condition								4.2
		A.	Toilet Accessories		4					
		B.	Toilet Partitions		4					
		C.	Water Closets		4					
		D.	Urinals						N/A	
		E.	Lavatorie /Sinks	5						
		F.	Counter		4					
		G.	Shower Compartments						N/A	
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	N O T E S									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**3.8**
	5.1	Mechanical Systems								4.0
		A.	HVAC		4					
		B.	Control System		4					
		C.	Chiller		4					
		D.	Cooling Towers						N/A	
		E.	Duct Work		4					
		F.	Ventilation\ Air Distribution		4					
		G.	Boilers						N/A	
	5.2	Electrical Systems								4.2
		A.	Transformer						N/A	
		B.	Switchgear		4					
		C.	Panelboards (Condition & Capacity)		4					
		D.	Devices (Switches & Receptacles)		4					
		E.	Interior Lighting Fixtures	5						
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System		4					
	5.3	Voice and Data Systems								
	5.4	Plumbing Systems								3.7
		A.	Plumbing Fixtures		4					
		B.	Water Distribution System/ Pipes		4					
		C.	Water Heaters			3				
	5.5	Gas Distribution Systems								3.0
	5.6	Fire Suppression System								4.0
	N O T E S									

System				Condition		
				Compliance	Non-compliance	N/A
6	**ADA Compliance**					
	6.1	Site				
		A.	Accessible Parking Spaces	C		
		B.	Passenger Loading Zones	C		
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space	C		
		B.	Doors/ Doorways/Gates	C		
		C.	Threshold	C		
		D.	Ramps			N/A
		E.	Stairways			N/A
		F.	Handrails			N/A
		G.	Elevators			N/A
	6.3	Toilet				
		A.	Clearances/Accessible Stall	C		
		B.	Toilet Accessories	C		
		C.	Water Closets	C		
		D.	Urinals	C		
		E.	Lavatories/ Sinks	C		
		F.	Counters	C		
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry			N/A
		B.	Furniture, Fixtures & Equipment - FF&E		NC	
		C.	Signage		NC	
	N O T E S	6.4.B: Provide ADA compliant furniture, fixtures and equipment with accessible height and knee and toe clearances. 6.4.C: Provide ADA compliant room station directional and restroom signage with tactile text and Braille.				

Photo Documentation | Exterior Overall









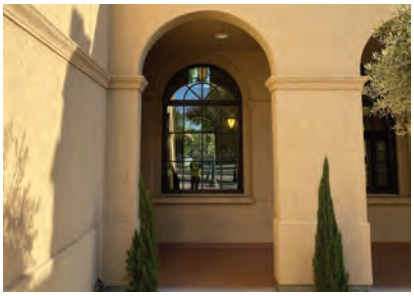
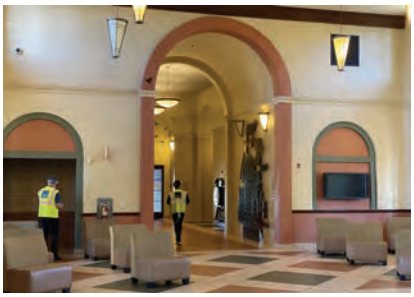
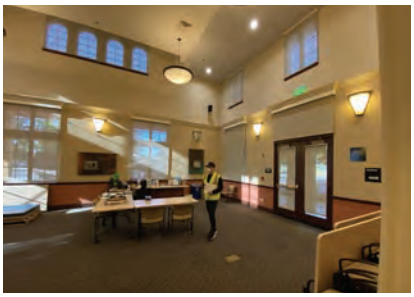


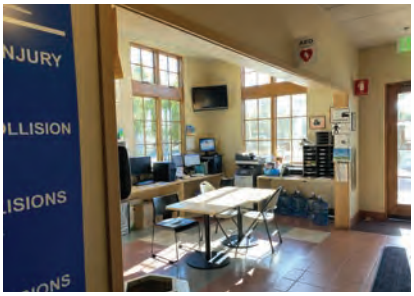


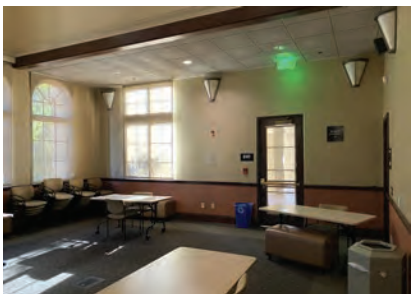

Photo Documentation | Interior Blow Ups

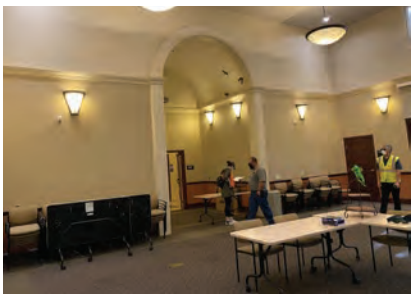








FACILITY CONDITION ASSESSMENT

ANIMAL SHELTER



Condition Summary - Animal Shelter

Overall Rating **4.1**







Facility Condition

Site 3.8

Site landscaping is in fairly good condition but some grass areas are dry and tanbark placement is uneven. A rodent problem was reported, likely due to the Animal Shelter's close proximity to surrounding fields. Painted areas of curbing are faded.

Exterior Envelope 4.1

The exterior of the Animal Shelter is in good condition overall. Multiple components are used for exterior façade elements and are holding up well. Some discoloration on exterior wall surfaces is present. Light cracking is present at top of exterior concrete security wall.

Structure 4.5

Light cracking is present at soffit of women's restroom. Equipment attachment and supports for laundry machines are not being utilized. Ductwork and cabling above ceiling appears to be appropriately braced.

Interior 3.8

Single door in lobby sometimes sticks and will not remain open or closed. Double doors in lobby area don't shut properly and requires significant effort to close and lock. The ground latch in this location requires maintenance and servicing. Stone flooring in lobby is in good condition. Concrete flooring is cracking in places in animal housing area. Terrazzo flooring around reception desk has slight wear. Guillotine doors break often at animal housing area and require frequent maintenance to pulley operation system. Flooring in laundry area is dirty and worn with rusting around laundry drainage. Grooming area flooring requires cleaning and holding area flooring is scratched. Window seats have come loose in multiple areas. Floor drainage in animal cleaning areas is in good condition. Attic contains no roof access. Sink wood is worn in "CAT ISO" area.

MEP Systems 4.2

HVAC units are located in the attic. Electrical room has its own A/C but it is not always utilized. Water heater was installed in 2004 and provides 800 BTU/hr, adequate service for the facility but should be replaced in the next decade. A climate controlled telecommunications area is approximately 10 degrees Fahrenheit cooler than the remainder of the facility. Two main electrical panels are rated at 208Y/120V 3 Ph 4W. Emergency lighting inverter is provided.

ADA Compliance Needs Compliance

Various elements of animal intake and housing operations aren't ADA compliant. Restrooms contain minor fixtures violations.

Recommendation Summary - Animal Shelter


Exterior


Lobby


Bathroom

Recommendations

Site: Recommendations include resurfacing tanbark areas, placing non-toxic traps to catch rodents, and repainting curbing.

Exterior Envelope: Resurface landscape walls and repaint exterior.

Structure: It is recommended to repair cracking at soffit of women's restroom and utilize non-structural seismic hold downs for laundry machines.

Interior: Interior spaces would benefit from repairing lobby single door to remain open and closed, replacing locking system on double doors in lobby, servicing the ground latch in lobby, and repairing cracks in concrete flooring in animal housing area. Additionally, it is recommended to replace guillotine doors, replace flooring in the laundry area, clean holding area flooring, tighten window seals, provide roof access for attic, and replace sink counter carpentry in "CAT ISO" area.

MEP Systems: No recommendations are required.

ADA Compliance: It is recommended to reconfigure various elements of animal intake and housing operations areas to be made compliant. Minor changes to restroom fixtures are required.

Impact of Recommended Works

Site: Impact of recommended site improvements are minor and won't have any affect on the shelter's operations. One week will be required to complete recommendations.

Exterior Envelope: Minor impact will be caused on shelter operations due to landscape wall resurfacing including decreased available parking. Two weeks will be required to complete recommendations.

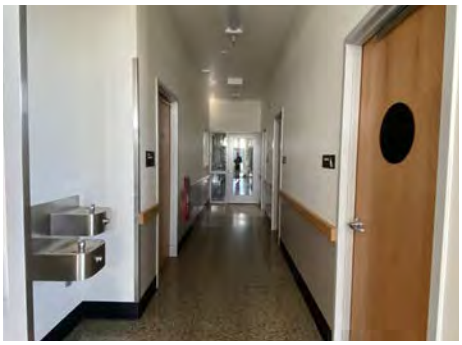
Structure: Performing structural recommendations will have minor effects on building operations including a day or two of unavailable laundry facilities. One week will be required to complete recommendations including soffit repair.

Interior: Impact of recommended actions will require a temporary closing of the shelter. Completion of recommendations will improve physical appearance of the shelter and result in a better experience for staff and visitors. Maintenance staff could likely repair necessary components without the need for an outside design firm. One month will be required for the completion of all recommendations, but phasing is possible to minimize disruption to the shelter.

ADA Compliance: Executing recommended elements will increase accessibility at the animal intake area and in restrooms. Two weeks will be required to fulfill all recommendations. These may be improved as part of a larger interior renovation including interior items.

Facility Description - Animal Shelter


Exterior


Interior


MEP

Building Description

The Animal Shelter is a single story building and was constructed in 2015. Animal shelter staff provides education, protection and humane treatment towards underserved animals. As part of the Police Department, the Animal Services Unit operates out of the Animal Shelter and is responsible for enforcing City of Tracy municipal codes related to the well-being of animals within the City limits.

The facility's stucco exterior is painted in bright colors such as red, yellow, and blue, attracting customers and potential adopters. The landscaping has an appropriate amount of shrubbery and there is a large spanning grass area toward the back of the building.

The interior spaces house the animals that wait to be adopted; each bounding area has a passageway for them to easily access the outdoor spaces. With adequate lighting, the space functions well for all activities that take place such as training, investigating various claims, and testing for rabies and other diseases.

Age

The Animal Shelter is 7 years old and was constructed in 2015.

Use of Building

The Animal Shelter is used in the following ways:

- Provides education, protection, and humane treatment of animals
- Adoption center for animals to be claimed
- Licenses dogs to be owned within the City of Tracy
- Investigates reports of aggressive animals, suspected animal abuse, any welfare complaints, as well as enforces all Penal and Tracy Municipal codes.
- Tests for rabies and completes State-required quarantine procedures.

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
Animal Shelter - Overall										**4.1**
1	**Site/ Civil/ Landscape**									**3.8**
	1.1	Fences/ Walls/ Gates								3.3
		A.	Perimeter Fencing		4					
		B.	Equipment Fencing			3				
		C.	Landscape Walls/ Piers / Structures				2			
		D.	Gates		4					
	1.2	Paving								4.0
		A.	Sidewalks/ Walkways/ Crosswalks	5						
		B.	Curbing		4					
		C.	Driveways/ Parking Pavement			3				
		D.	Striping/ Marking/ Speed Bumps		4					
		E.	Patios						N/A	
	1.3	Landscape								3.7
		A.	Ground Cover			3				
		B.	Trees		4					
		C.	Irrigation System		4					
	1.4	Site Features/ Fixtures/ Furniture/ Signage								4.2
		A.	Landscape Features/ Play Equipment		4					
		B.	Exterior Lighting Fixtures		4					
		C.	Water Fixtures	5						
		D.	Exterior Site Furniture		4					
		E.	Site Utility		4					
	1.5	Stormwater Management								4.0
	N O T E S	1.1.C: The large landscape wall in front of the facility has large surface cracking.								

				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
	System			5	4	3	2	1		
2	**Exterior Envelope**									**4.1**
	2.1	Exterior Wall Finish								4.0
	2.2	Eaves and Fascias								4.0
	2.3	Doors/ Windows/ Louvers								4.0
		A.	Windows	5						
		B.	Louvers and Vents		4					
		C.	Exterior Doors & Hardware			3				
	2.4	Roofing								4.3
		A.	Roof Surface		4					
		B.	Roof Opening/ Skylight/ Penetrations						N/A	
		C.	Roof Equipment Curbing						N/A	
		D.	Leakage						N/A	
		E.	Ponding Water						N/A	
		F.	Roof Drainage	5						
		G.	Gutters / Downspouts		4					
		H.	Roof Vents		4					
	NOTES									
3	**Structure**									**4.5**
	3.1	Foundation/ Footing								4.0
	3.2	Columns								5.0
	3.3	Framing System								5.0
	3.4	Walls								5.0
	3.5	Lateral Force Resistance System								4.0
	3.6	Covered Walkway/Canopy								4.0
	3.7	Chimney								N/A
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**3.8**
	4.1	Ceilings								4.7
		A.	Suspended Ceiling (ACT)		4					
		B.	Gypsum Board						N/A	
		C.	Plaster	5						
		D.	Wood						N/A	
		E.	Other	5						
		F.	Exposed						N/A	
	4.2	Flooring								3.5
		A.	Carpet						N/A	
		B.	Vinyl						N/A	
		C.	Tile		4					
		D.	Wood						N/A	
		E.	Concrete			3				
	4.3	Interior Wall/Partition Finishes								4.0
	4.4	Interior Doors								3.0
	4.5	Stairs Condition								N/A
		A.	Stairs/ Landing						N/A	
		B.	Handrails						N/A	
	4.6	Toilet Condition								3.7
		A.	Toilet Accessories		4					
		B.	Toilet Partitions						N/A	
		C.	Water Closets			3				
		D.	Urinals						N/A	
		E.	Lavatorie /Sinks		4					
		F.	Counter						N/A	
		G.	Shower Compartments						N/A	
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**4.2**
	5.1	Mechanical Systems								4.4
		A.	HVAC		4					
		B.	Control System	5						
		C.	Chiller		4					
		D.	Cooling Towers						N/A	
		E.	Duct Work	5						
		F.	Ventilation\ Air Distribution		4					
		G.	Boilers						N/A	
	5.2	Electrical Systems								4.0
		A.	Transformer						N/A	
		B.	Switchgear			3				
		C.	Panelboards (Condition & Capacity)	5						
		D.	Devices (Switches & Receptacles)		4					
		E.	Interior Lighting Fixtures		4					
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System		4					
	5.3	Voice and Data Systems								4.0
	5.4	Plumbing Systems								4.0
		A.	Plumbing Fixtures		4					
		B.	Water Distribution System/ Pipes		4					
		C.	Water Heaters		4					
	5.5	Gas Distribution Systems								4.0
	5.6	Fire Suppression System								5.0
	N O T E S									

System				Condition		
				Compliance	Non-compliance	N/A
6	**ADA Compliance**					
	6.1	Site				
		A.	Accessible Parking Spaces	C		
		B.	Passenger Loading Zones	C		
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space	C		
		B.	Doors/ Doorways/Gates	C		
		C.	Threshold	C		
		D.	Ramps	C		
		E.	Stairways			N/A
		F.	Handrails	C		
		G.	Elevators			N/A
	6.3	Toilet				
		A.	Clearances/Accessible Stall	C		
		B.	Toilet Accessories		NC	
		C.	Water Closets	C		
		D.	Urinals	C		
		E.	Lavatories/ Sinks	C		
		F.	Counters	C		
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry		NC	
		B.	Furniture, Fixtures & Equipment - FF&E		NC	
		C.	Signage		NC	
	NOTES	6.3.B: Provide ADA compliant toilet accessories. 6.4.A: Provide knee and toe clearance under working surfaces and front desk counter. 6.4.B: Provide ADA compliant furniture, fixtures and equipment with accessible height and knee and toe clearance. 6.4.C: Provide ADA compliant room signs with tactile text and Braille. Provide ADA compliant toilet room sign on door.				

Photo Documentation | Exterior Overall







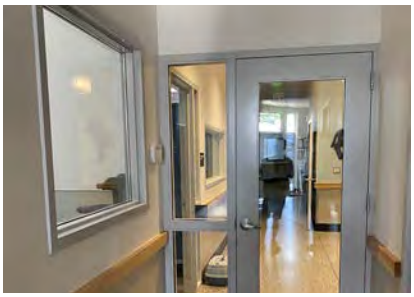


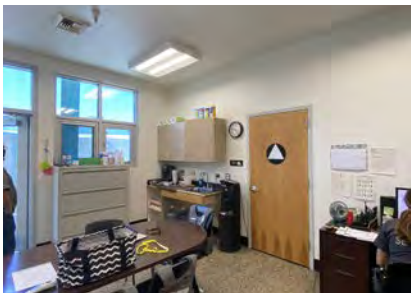




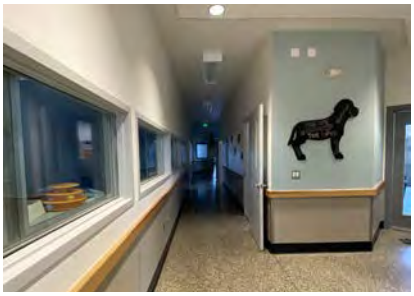

Photo Documentation | Interior Blow Ups

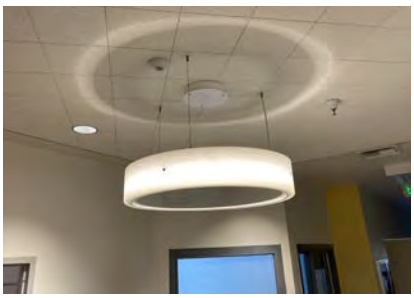













FACILITY CONDITION ASSESSMENT

TRACY LIBRARY



Condition Summary - Tracy Library

Overall Rating **3.5**







Facility Condition

Site 3.3

Sidewalks on pathways around this building and from the adjacent parking lot have multiple cracks which in several cases span the entire width of the walkway. Ground cover towards the children's play area is eroded and showing dirt. Storm water drain near the children's play area is a potential tripping hazard. There is evidence of ponding water next to the building. Parking paving and striping are in good condition. Exterior lighting, site furniture and drinking fountains are in fair condition. Landscaping is appropriate for the site including many large trees. Further investigation of site utility is recommended due to aware of repeated plugged sewer line calls.

Exterior Envelope 3.0

The exterior of the Tracy Library is in fair condition. Masonry surface and eaves are dirty with eave sealants deteriorated. Roof shingles and rubber membranes are in good condition overall but are beginning to separate from adhered surface in areas and are stained due to water runoff from downspouts. Light cracking at roof connections to eaves is present. Gutters are not properly attached in areas and a missing downspout at the rear of the building was spotted.

Structure 3.8

The Tracy Library structure is good. Slabs are in fair condition and show signs of normal wear and tear. Interior beams and trusses are in good condition. Columns and walls are plumb and show normal signs of wear related to age.

Interior 3.6

Suspended ceiling tiles inside the Tracy Library show signs of deterioration with water stains only on some tiles and ceiling grid. The carpet flooring throughout the building contains multiple regions of staining but is in serviceable condition. Restroom tile flooring is outdated with stained sealant and vinyl tile in other areas of the building contains light scratching. There are signs of leakage under restroom sinks and at sink edges.

MEP Systems 3.6

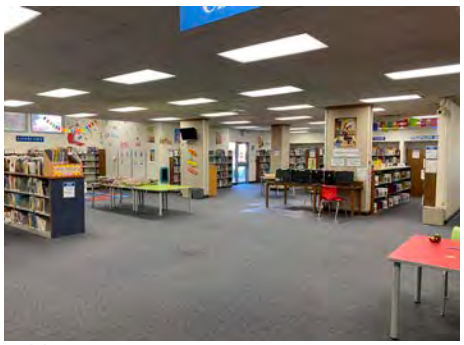
HVAC systems are fair with rooftop equipment nearing the end of useful service life within five years. An evaporation line running from one of the HVAC units on the roof is disconnected and lightly leaking. Some duct vents are minimally clogged or otherwise dirty. The water heater is relatively new and serves the facility well. Water plumbing lines in bathrooms are likely approaching end of useful service life.

ADA Compliance Needs Compliance

Passenger loading zones require the installation of tactile warnings or truncated domes to be made compliant. Restroom signage is not ADA compliant and some elements including arrangement of interior furniture are not compliant.

Recommendation Summary - Tracy Library


Exterior


Lobby


Bathroom

Recommendations

Site: Recommendations include repairing cracks in adjacent parking lot, repairing ground cover towards children's play area, fabricating a cover for the storm water drain near the children's play area, resurfacing area next to the building to avoid ponding, and replacing exterior lighting and drinking fountains.

Exterior Envelope: It is recommended to clean masonry surface, repair light cracking at roof connections to eaves, properly attach gutter, and add a downspout at the rear of the building.

Structure: No recommended actions are required.

Interior: Improvements should include cleaning some ceiling tiles, cleaning carpeted flooring throughout the building, replacing restroom tile flooring, replacing restroom sinks and repairing the leakage under restroom sinks.

MEP Systems: It is recommended to repair and reattach the evaporation line running from one of the HVAC units and clean duct vents. Rooftop mounted HVAC equipment should be replaced within the next five years.

ADA Compliance: It is recommended to rearrange interior furniture to me more compliant and install truncated domes at the front of the site at the passenger loading zone.

Impact of Recommended Works

Site: Impact of site recommendations with include the temporary closing of the children's play area. Three weeks will be required to complete all recommended actions.

Exterior Envelope: Impacts of recommended actions will improve the overall physical appearance of the building. Two weeks will be required to repair and add all necessary requirements.

Structure: No impact of recommended works.

Interior: Performing the interior recommendations will cause for a temporary closing of the library; completing the recommendations will result in improved physical appearance and safety of the library. Six weeks will be required to remodel interiors.

MEP Systems: Rooftop HVAC equipment repair and ductwork cleaning likely will likely take one week to complete. HVAC replacement likely requires an outside design consultant unless the City wishes to replace units in kind.

ADA Compliance: Interior rearrangement plan and action could take up to two weeks. Installing truncated domes at the site would be a small task able to be completed in one to two days but impact to the main entrance may take place at this time.

Facility Description - Tracy Library


Exterior


Interior


MEP

Building Description

The Tracy Library is a single story building that was constructed in 1961. The library is located off of E. Eaton Avenue and has a structure consisting of a wood frame. The exterior of the library has a masonry surface and the interior has suspended ceiling tiles and lighting fixtures. A welcoming entrance space guide citizens into the library and the interior areas are well-equipped for programs and activities that take place within the library. Activities offered include computer classes, literacy programs, the English Conversation Club and other book clubs.

Age

The Tracy Library building is 61 years old and was constructed in 1961.

Use of Building

The building is used in the following ways:

- Hosts various social activities and programs designed for every age and all citizens.
- Facilitates the borrowing and returning of books for free
- Offers online tutoring services

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
Tracy Library - Overall										**3.5**
1	**Site/ Civil/ Landscape**									**3.3**
	1.1	Fences/ Walls/ Gates								2.7
		A.	Perimeter Fencing			3				
		B.	Equipment Fencing						N/A	
		C.	Landscape Walls/ Piers / Structures				2			
		D.	Gates			3				
	1.2	Paving								3.3
		A.	Sidewalks/ Walkways/ Crosswalks			3				
		B.	Curbing			3				
		C.	Driveways/ Parking Pavement			3				
		D.	Striping/ Marking/ Speed Bumps		4					
		E.	Patios						N/A	
	1.3	Landscape								3.7
		A.	Ground Cover			3				
		B.	Trees		4					
		C.	Irrigation System		4					
	1.4	Site Features/ Fixtures/ Furniture/ Signage								3.0
		A.	Landscape Features/ Play Equipment						N/A	
		B.	Exterior Lighting Fixtures				2			
		C.	Water Fixtures						N/A	
		D.	Exterior Site Furniture						N/A	
		E.	Site Utility		4					
	1.5	Stormwater Management								4.0
	N O T E S	1.1.C: Masonry landscape wall near main entrance is dirty and cracked in areas, especially where signage is attached. 1.4.B: Exterior lighting fixtures lack lenses and are generally lacking in number.								

	System			Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**3.0**
	2.1	Exterior Wall Finish								3.0
	2.2	Eaves and Fascias								2.0
	2.3	Doors/ Windows/ Louvers								3.7
		A.	Windows		4					
		B.	Louvers and Vents			3				
		C.	Exterior Doors & Hardware		4					
	2.4	Roofing								3.3
		A.	Roof Surface			3				
		B.	Roof Opening/ Skylight/ Penetrations						N/A	
		C.	Roof Equipment Curbing		4					
		D.	Leakage			3				
		E.	Ponding Water		4					
		F.	Roof Drainage			3				
		G.	Gutters / Downspouts				2			
		H.	Roof Vents		4					
	N O T E S	2.4.G: Gutters are hanging at odd angles from building in some areas. Downspouts drain directly onto upper roof.								
3	**Structure**									**3.8**
	3.1	Foundation/ Footing								4.0
	3.2	Columns								4.0
	3.3	Framing System								3.0
	3.4	Walls								4.0
	3.5	Lateral Force Resistance System								4.0
	3.6	Covered Walkway/Canopy								N/A
	3.7	Chimney								N/A
	N O T E S									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**3.6**
	4.1	Ceilings								4.0
		A.	Suspended Ceiling (ACT)		4					
		B.	Gypsum Board						N/A	
		C.	Plaster		4					
		D.	Wood						N/A	
		E.	Other						N/A	
		F.	Exposed						N/A	
	4.2	Flooring								3.0
		A.	Carpet			3				
		B.	Vinyl						N/A	
		C.	Tile			3				
		D.	Wood						N/A	
		E.	Concrete						N/A	
	4.3	Interior Wall/Partition Finishes								4.0
	4.4	Interior Doors								4.0
	4.5	Stairs Condition								N/A
		A.	Stairs/ Landing						N/A	
		B.	Handrails						N/A	
	4.6	Toilet Condition								3.2
		A.	Toilet Accessories		4					
		B.	Toilet Partitions			3				
		C.	Water Closets		4					
		D.	Urinals			3				
		E.	Lavatory /Sinks				2			
		F.	Counter			3				
		G.	Shower Compartments						N/A	
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	NOTES	4.6.E: Lavatories at interior public restrooms are beyond their useful service life and deteriorated at edges of sink basins.								

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**3.6**
	5.1	Mechanical Systems								3.4
		A.	HVAC		4					
		B.	Control System			3				
		C.	Chiller			3				
		D.	Cooling Towers						N/A	
		E.	Duct Work		4					
		F.	Ventilation\ Air Distribution			3				
		G.	Boilers						N/A	
	5.2	Electrical Systems								3.5
		A.	Transformer		4					
		B.	Switchgear			3				
		C.	Panelboards (Condition & Capacity)			3				
		D.	Devices (Switches & Receptacles)			3				
		E.	Interior Lighting Fixtures		4					
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System		4					
	5.3	Voice and Data Systems								4.0
	5.4	Plumbing Systems								3.3
		A.	Plumbing Fixtures			3				
		B.	Water Distribution System/ Pipes			3				
		C.	Water Heaters		4					
	5.5	Gas Distribution Systems								N/A
	5.6	Fire Suppression System								N/A
	N O T E S									

System				Condition		
				Compliance	Non-compliance	N/A
6	**ADA Compliance**					
	6.1	Site				
		A.	Accessible Parking Spaces	C		
		B.	Passenger Loading Zones		NC	
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space	C		
		B.	Doors/ Doorways/Gates	C		
		C.	Threshold	C		
		D.	Ramps			N/A
		E.	Stairways			N/A
		F.	Handrails			N/A
		G.	Elevators			N/A
	6.3	Toilet				
		A.	Clearances/Accessible Stall	C		
		B.	Toilet Accessories	C		
		C.	Water Closets	C		
		D.	Urinals	C		
		E.	Lavatories/ Sinks	C		
		F.	Counters	C		
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry		NC	
		B.	Furniture, Fixtures & Equipment - FF&E		NC	
		C.	Signage		NC	
	NOTES	6.1.B: Provide ADA compliant passenger loading zone with striping and tactile warnings. 6.4.A: Some elements of break area cabinetry are not ADA compliant. 6.4.B: Some interior furniture including arrangement of such items is not compliant. 6.4.C: Provide ADA compliant directional and toilet room restroom signage with tactile text and Braille.				

Photo Documentation | Exterior Overall





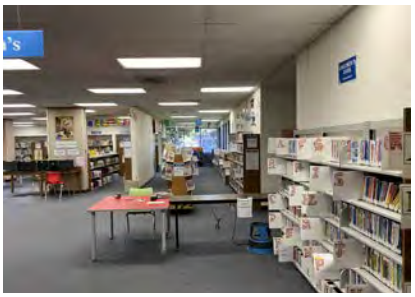
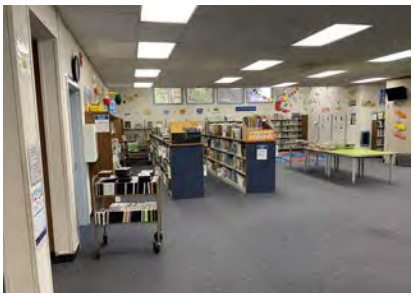
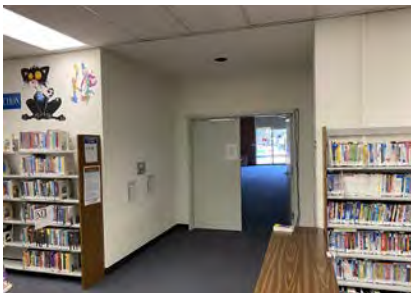


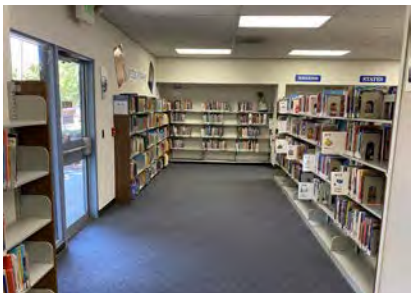







Photo Documentation | Interior Blow Ups

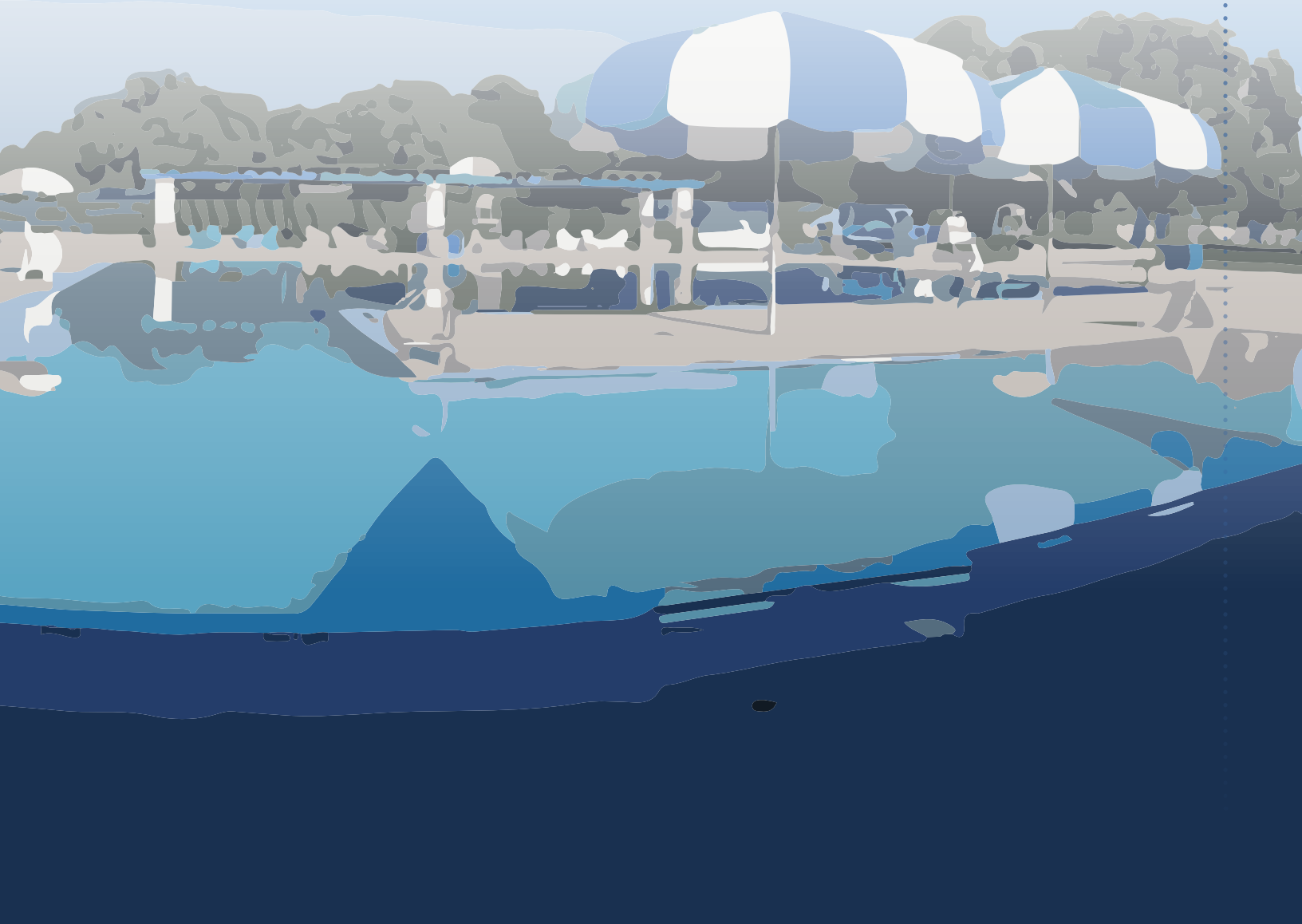






FACILITY CONDITION ASSESSMENT

JOE WILSON POOL



Condition Summary - Joe Wilson Pool

Overall Rating **4.2**







Facility Condition

Site 4.3

The Joe Wilson pool site is in good condition overall. Landscaping is present in the form of grass, shrubbery, and multiple on site trees that all appear healthy and appropriate for the site. A tall steel fence that is painted blue surrounds the pool areas and protects the area from unsupervised public access. The fence appears freshly painted and is in good condition, including associated gates and gate hardware. This gate is alarmed and acts as an emergency exit. Concrete at exterior patio surrounding pool area appears new with minimal staining in areas and a general lack of cracking. Site furniture in this location serves the facility well with shade structures covering the majority that are not yet faded or discolored. Parking lot striping is in good condition overall but beginning to fade in areas especially at ADA stalls. Various city utilities are accessible from hatches placed in the ground.

Exterior Envelope 4.2

Exterior tile wall finish is slightly stained at tile in areas but grout is holding up well and only discolored at areas where other items are mounted on the wall. Roof drainage includes gutters that are exposed only at the exterior fascia and are clogged with leaves in areas. Metal fascia at top of exterior walls is discolored with a finish and paint that is beginning to deteriorate at joints and flat surfaces. Exterior entrance to locker room doors are folding and aluminum and show no signs of wear. Signage is in good condition and serves the facility well, but requires substantial cleaning. Exterior windows are present at a small number of areas including the food service window at the kitchen.

Structure 4.6

Concrete black wall construction in pump house rooms is visually plumb with minimal signs of cracking at base of wall in areas. Exposed structural columns in locker room areas are visually sound. No other structural issues were observed.

Interior 3.6

Interior lighting is in good condition and largely LED tube lighting throughout. Brown tile flooring in kitchen area has stained grout in the center of the kitchen and in areas under heavy-use appliances. Ceiling kitchen is exposed corrugated metal with a clean painted finish. Kitchen appliances are largely stainless steel and contain significant remaining useful service life. Smooth wall finished in kitchen appears freshly painted with no cracking or staining. Locker room walls are finished in similar painted concrete blocks as pump room but are more stained and discolored at both block surfaces and grout. Ceiling systems in this location are similar to the kitchen but discolored and stained in areas likely due to moisture buildup from shower steam. Restrooms are finished in stainless steel and serve the facility well under heavy use. Epoxied flooring in restrooms and locker rooms is in good condition with minimal surface wear. Tile wainscot is similarly maintained with minimal staining. Roll up metal doors in lock room areas are well-maintained with no obvious visual signs of deterioration. Shower walls and flooring are finished in tile that appears to be holding up well. Minimal staining is present at shower floor tile and grout which is to be expected. The interior of locker rooms and showers has an area under the roof that is fully exposed to the outdoors, which greatly increases ventilation with no effect on privacy.

Condition Summary - Joe Wilson Pool

The reception area is located in the center of the facility and would benefit from a modernized lighting system.

MEP Systems 4.1

A large pump room houses all pool equipment in a controlled environment. Pool equipment is clearly labeled with system type and flow direction. The pump room also houses three (3) EKO systems water filler devices that are relatively new with much remaining service life. System controls are modern and largely digital. Items are stored in front of electrical panels. Large equipment such as the water filters and pool heater is appropriately mounted to the ground but some mounts are rusted and lacking vibration isolators. Copper piping for pool water systems is in good condition. Exterior mounted conduit is properly braced and appears new. Ductwork is exposed and properly braced. Main electrical panel is located at exterior site and contains much remaining service life.

ADA Compliance Needs Compliance

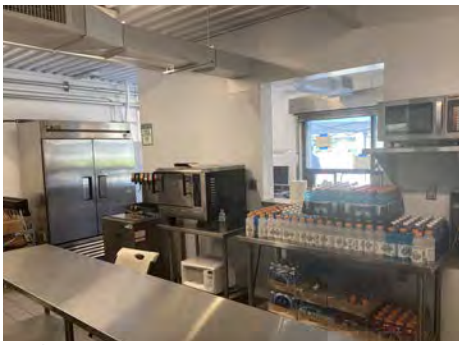
Clear floor space in pump room area is lacking. The exterior pool area site is largely ADA complaint with appropriate elements in like new condition. Sinks and soap dispensers in restroom areas are non-compliant.

Recommendation Summary - Joe Wilson Pool



Exterior


Shower


Kitchen

Recommendations

Site: Minimal recommendations for the pool facility include potentially repainting the ADA parking stalls.

Exterior Envelope: It is recommended to clean out gutters and to paint metal fascia and re-grout some exterior tile.

Structure: It is recommended to repair cracks at the base of wall in areas of pump room.

Interior: Recommendations include replacing tiling at kitchen flooring, repainting concrete blocks and grout in locker room walls and updating lighting system at reception.

MEP Systems: No recommendations for improvement.

ADA Compliance: It is recommended to provide a clear floor space in pump room.

Impact of Recommended Works

Site: Impact of site recommendations are minor. One week will be required to repaint the ADA parking stalls.

Exterior Envelope: Impacts of recommendations are minor. Two weeks will be required to clean gutters and recolor metal fascia and exterior tile.

Structure: Performing structural recommendations should have minor impact on the pool facility; one week will be required to repair cracks at base of wall areas.

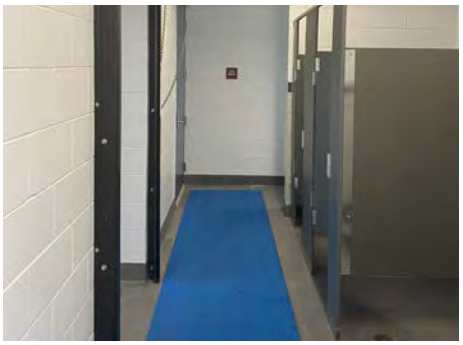
Interior: Executing recommended improvements should have some impact on the pool's operations, which may include temporary closing of the kitchen area. Locker rooms will not be usable during renovations to these areas.

MEP Systems: No impact of recommended works.

ADA Compliance: Performing the recommended improvements will have minimal impact on the pool's operations.

Facility Description - Joe Wilson Pool


Exterior


Bathroom


MEP

Building Description

The Joe Wilson Pool is a public facility that serves as a communal space for the City of Tracy. Located off of Lowell Avenue in Dr. Powers Park, the pool, locker room, and pump room is constructed with masonry structure with a wood roof. The exterior of the patio is clad with blue, gray, and white colored tile and provides an aesthetic physical appearance of the building. A well kept, blue steel fence surrounds the property and an exit gate is provided within. Exterior spaces are well equipped with appropriate furniture for the public to use and shade structures are provided for adequate UV protection.

The interior spaces hold the locker rooms and restroom stalls. This space is useful for users to safely store belongings and change in privacy. The metal doors for stalls, painted concrete blocks for walls, and tile help with the physical appearance.

Age

The Joe Wilson Pool is 11 years old and was constructed in 2011.

Use of Building

The building is used in the following ways:

- Swim lessons
- Water exercise classes
- Public recreation and lap swimming
- Special events

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
Joe Wilson Pool - Overall										**4.2**
1	**Site/ Civil/ Landscape**									**4.3**
	1.1	Fences/ Walls/ Gates								5.0
		A.	Perimeter Fencing	5						
		B.	Equipment Fencing						N/A	
		C.	Landscape Walls/ Piers / Structures						N/A	
		D.	Gates	5						
	1.2	Paving								3.8
		A.	Sidewalks/ Walkways/ Crosswalks		4					
		B.	Curbing			3				
		C.	Driveways/ Parking Pavement		4					
		D.	Striping/ Marking/ Speed Bumps			3				
		E.	Patios	5						
	1.3	Landscape								3.7
		A.	Ground Cover			3				
		B.	Trees		4					
		C.	Irrigation System		4					
	1.4	Site Features/ Fixtures/ Furniture/ Signage								4.3
		A.	Landscape Features/ Play Equipment						N/A	
		B.	Exterior Lighting Fixtures		4					
		C.	Water Fixtures		4					
		D.	Exterior Site Furniture		4					
		E.	Site Utility	5						
	1.5	Stormwater Management								5.0
	N O T E S									

	System			Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**4.2**
	2.1	Exterior Wall Finish								4.0
	2.2	Eaves and Fascias								4.0
	2.3	Doors/ Windows/ Louvers								4.0
		A.	Windows		4					
		B.	Louvers and Vents						N/A	
		C.	Exterior Doors & Hardware		4					
	2.4	Roofing								4.8
		A.	Roof Surface						N/A	
		B.	Roof Opening/ Skylight/ Penetrations	5						
		C.	Roof Equipment Curbing						N/A	
		D.	Leakage	5						
		E.	Ponding Water	5					N/A	
		F.	Roof Drainage		4					
		G.	Gutters / Downspouts						N/A	
		H.	Roof Vents						N/A	
	NOTES									
3	**Structure**									**4.6**
	3.1	Foundation/ Footing								5.0
	3.2	Columns								N/A
	3.3	Framing System								5.0
	3.4	Walls								5.0
	3.5	Lateral Force Resistance System								3.0
	3.6	Covered Walkway/Canopy								5.0
	3.7	Chimney								N/A
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**3.6**
	4.1	Ceilings								4.0
		A.	Suspended Ceiling (ACT)						N/A	
		B.	Gypsum Board						N/A	
		C.	Plaster						N/A	
		D.	Wood						N/A	
		E.	Other		4					
		F.	Exposed						N/A	
	4.2	Flooring								3.5
		A.	Carpet						N/A	
		B.	Vinyl						N/A	
		C.	Tile			3				
		D.	Wood						N/A	
		E.	Concrete		4					
	4.3	Interior Wall/Partition Finishes								3.0
	4.4	Interior Doors								4.0
	4.5	Stairs Condition								N/A
		A.	Stairs/ Landing						N/A	
		B.	Handrails						N/A	
	4.6	Toilet Condition								3.3
		A.	Toilet Accessories			3				
		B.	Toilet Partitions		4					
		C.	Water Closets			3				
		D.	Urinals			3				
		E.	Lavatorie /Sinks			3				
		F.	Counter						N/A	
		G.	Shower Compartments		4					
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**4.1**
	5.1	Mechanical Systems								4.0
		A.	HVAC		4					
		B.	Control System		4					
		C.	Chiller		4					
		D.	Cooling Towers						N/A	
		E.	Duct Work		4					
		F.	Ventilation\ Air Distribution		4					
		G.	Boilers		4					
	5.2	Electrical Systems								4.2
		A.	Transformer	5						
		B.	Switchgear		4					
		C.	Panelboards (Condition & Capacity)		4					
		D.	Devices (Switches & Receptacles)		4					
		E.	Interior Lighting Fixtures			3				
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System	5						
	5.3	Voice and Data Systems								
	5.4	Plumbing Systems								4.0
		A.	Plumbing Fixtures		4					
		B.	Water Distribution System/ Pipes		4					
		C.	Water Heaters		4					
	5.5	Gas Distribution Systems								N/A
	5.6	Fire Suppression System								N/A
	NOTES									

System				Condition		
				Compliance	Non-compliance	N/A
6	ADA Compliance					
	6.1	Site				
		A.	Accessible Parking Spaces	C		
		B.	Passenger Loading Zones			N/A
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space	C		
		B.	Doors/ Doorways/Gates	C		
		C.	Threshold	C		
		D.	Ramps			N/A
		E.	Stairways			N/A
		F.	Handrails			N/A
		G.	Elevators			N/A
	6.3	Toilet				
		A.	Clearances/Accessible Stall	C		
		B.	Toilet Accessories	C		
		C.	Water Closets	C		
		D.	Urinals	C		
		E.	Lavatories/ Sinks	C		
		F.	Counters	C		
		G.	Shower Compartments	C		
	6.4	Building Elements				
		A.	Cabinetry	C		
		B.	Furniture, Fixtures & Equipment - FF&E	C		
		C.	Signage		NC	
	NOTES	6.4.C: Provide ADA compliant room signage with tactile text and Braille. Provide ADA compliant toilet room signage.				

Photo Documentation | Exterior Overall











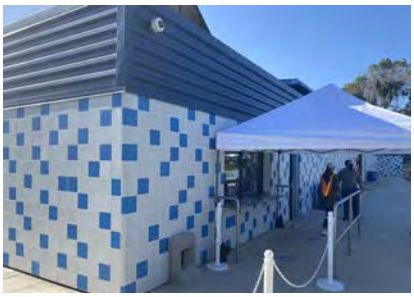








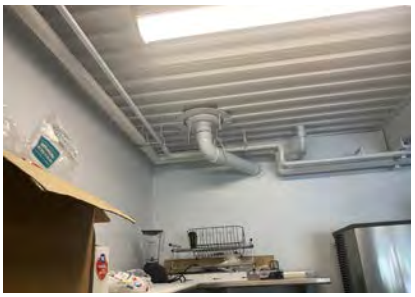




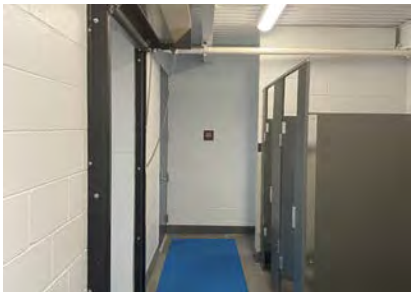


Photo Documentation | Interior Blow Ups












FACILITY CONDITION ASSESSMENT

SPORT COMPLEX



Condition Summary - Sport Complex Meeting Room

Overall Rating 3.3







Facility Condition

Site 3.1

Parking asphalt for the Tracy Sports Complex is stained and beginning to deteriorate. Striping and other pavement markings are faded and lacking in areas. Curb paint is in poor condition at curb bases and mostly scraped off from curbing. Small grass patch areas directly adjacent to the facility are dry in spots and also contain areas of no vegetation. Sidewalk adjacent to parking lot at street side has some significant cracking in areas. Black painted surface at short gate adjacent to the facility is discolored with rusting visible especially at the base and is also significantly damaged.

Exterior Envelope 3.3

Roof surface is in good condition but requires cleaning due to dirt and grime buildup. Awning have similar dirt buildup especially at areas near roof eaves. Concrete block siding is in fair condition with spotted chipping and cracking at all sides. Staining is also present at exterior siding. Aluminum entrance doors are in good condition with much remaining service life but lock sets are dirty and contain fading green paint and rusted hinges. Exterior-mounted lighting fixtures contain discolored housings and overly yellowed lenses. Aluminum window frames are discolored and worn. Gutter paint finish is fading but no major denting or attachment issues were observed besides cracked material leading gutter ends into grand drains. Sealants at door thresholds at main restrooms and generally around the building are cracked and deteriorating. Awning surfaces are worn on the undersides.

Structure 2.6

Minimal cracking was visible at some CMU blocks at the interior. Some moderate cracking is present at the base of foundation around building which suggests a shifting structure.

Interior 3.8

Interior vinyl tile flooring is nearing the end of its useful service life with lots of scuffing and discoloration throughout. Interior doors have worn surfaces. Ceiling system is in poor condition with acoustic tiles that are plumb and not yet discolored with signs of staining in utility closet. Light fixture housings are slightly discolored and stained in places. Interior CMU walls are discolored and would benefit from a repainting. Baseboard is not properly attached in places.

MEP Systems 3.7

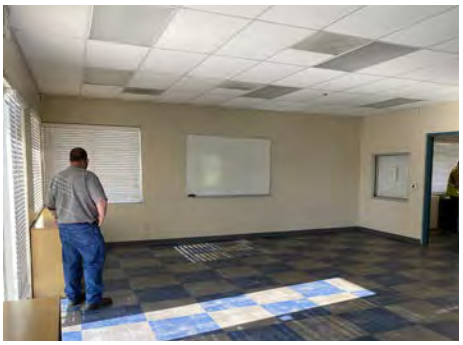
Plumbing for restrooms and the remainder of the facility is accessed via a small exterior room and is in good condition. Housing for exterior A/C unit is smashed and is rusting through areas of chipping paint. Electrical switchboards serving the facility contain appropriate capacity for the fields' significant amount of sports lighting.

ADA Compliance Needs Compliance

Main restroom fixtures are largely non-compliant including toilet flush button. However, ADA compliant restrooms are located with exterior access at the rear of the facility adjacent to the fields. Accessibility signage at parking lot asphalt surface is worn beyond recognition.

Recommendation Summary - Sport Complex


Exterior


Interior


Bathroom

Recommendations

Site: Recommendations include repairing parking asphalt, repainting the striping, pavement markings and curb paint, re-seeding the grass, repairing the sidewalk adjacent to the parking lot, and repairing the black painted surface at short gate.

Exterior Envelope: It is recommended to clean the roof surface, fix small cracks and paint chipping, clean exterior siding, replace lock sets of aluminum entrance doors, and replace exterior-mounted lighting fixtures. Other recommended actions include resealing sealants at door thresholds at main restrooms and replacing awning surfaces.

Structure: Structural recommendations include repairing cracking at the base of foundation.

Interior: Improvements should include replacing interior vinyl tile flooring, resurfacing interior doors, replacing the ceiling tile system, repainting interior CMU walls, and reattaching baseboard in places where it is loose.

MEP Systems: It is recommended to replace the housing for exterior A/C unit.

ADA Compliance: Recommended actions include replacing and relocating main restroom fixtures and replacing accessibility signage at parking lot asphalt surface.

Impact of Recommended Works

Site: Impact of site recommendations include disturbed access to the building but will improve the physical appearance of the building. Two weeks will be required to complete all site recommendations.

Exterior Envelope: Impacts of recommendation include temporary closing of certain areas of the building and disturbed access to the building. Completion of these recommendations will require three weeks.

Structure: Performing structural recommendations will require one week to complete.

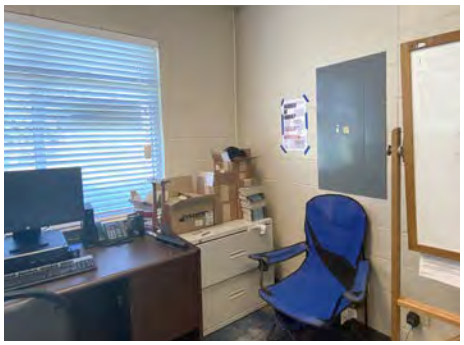
Interior: Executing recommended improvements will result in the temporary closing of the building; this will enhance the overall physical appearance. Two weeks will be required for the completion of all recommendations.

MEP Systems: Exterior housing for A/C unit is likely replaceable in one day with minor impact to facility operations.

ADA Compliance: Performing the recommended improvements will have a minor impact on the building's operations. One week will be required to replace fixtures and accessibility signage.

Facility Description - Sport Complex


Exterior


Interior


MEP

Building Description

The Tracy Sport Complex is a single story building with four lighted fields that was constructed in 2001. Within the sport complex, there is a two shade structure, a meeting and RR building, a maintenance shop, a concession and restroom, and a shade structure. The Sport Complex is located off of Crossroads Drive and is mainly surrounded by residential neighborhoods. The buildings have a structure that is consisting of steel, wood frame, and masonry. The exterior spaces are appropriate for any sports that are to be played here.

The concession and restroom is open to the public to purchase food and use. The maintenance shop has necessary tools for upkeep of the complex. The shading structure is well placed for the audience to watch the sports games.

Age

The Sport Complex building is 21 years old and was constructed in 2001.

Use of Building

The building is used in the following ways:

- Provides four lighted fields for various activities and sports
- Provides concessions for players and audience
- Provides space for family events and public rentals

			System	Condition						Rank
				Excellent	Good	Fair	Poor	Critical	N/A	
				5	4	3	2	1		
Sports Complex - Overall										**3.3**
1	**Site/ Civil/ Landscape**									**3.1**
	1.1	Fences/ Walls/ Gates								2.0
		A.	Perimeter Fencing					1		
		B.	Equipment Fencing				2			
		C.	Landscape Walls/ Piers / Structures						N/A	
		D.	Gates			3				
	1.2	Paving								3.3
		A.	Sidewalks/ Walkways/ Crosswalks		4					
		B.	Curbing			3				
		C.	Driveways/ Parking Pavement			3				
		D.	Striping/ Marking/ Speed Bumps			3				
		E.	Patios						N/A	
	1.3	Landscape								3.0
		A.	Ground Cover			3				
		B.	Trees			3				
		C.	Irrigation System			3				
	1.4	Site Features/ Fixtures/ Furniture/ Signage								3.0
		A.	Landscape Features/ Play Equipment						N/A	
		B.	Exterior Lighting Fixtures				2			
		C.	Water Fixtures						N/A	
		D.	Exterior Site Furniture						N/A	
		E.	Site Utility		4					
	1.5	Stormwater Management								4.0
	N O T E S	1.1.A: The perimeter fencing is damaged and bent. Rust is forming on exterior metal fence where paint has chipped. 1.1.B: The equipment fencing is rusted and damaged. 1.4.B: Exterior lighting fixtures are worn and deteriorated.								

	System			Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**3.3**
	2.1	Exterior Wall Finish								2.0
	2.2	Eaves and Fascias								3.0
	2.3	Doors/ Windows/ Louvers								3.7
		A.	Windows		4					
		B.	Louvers and Vents		4					
		C.	Exterior Doors & Hardware			3				
	2.4	Roofing								4.5
		A.	Roof Surface	5						
		B.	Roof Opening/ Skylight/ Penetrations						N/A	
		C.	Roof Equipment Curbing						N/A	
		D.	Leakage						N/A	
		E.	Ponding Water						N/A	
		F.	Roof Drainage	5						
		G.	Gutters / Downspouts		4					
		H.	Roof Vents		4					
	NOTES									
3	**Structure**									**2.6**
	3.1	Foundation/ Footing								2.0
	3.2	Columns								4.0
	3.3	Framing System								3.0
	3.4	Walls								2.0
	3.5	Lateral Force Resistance System								2.0
	3.6	Covered Walkway/Canopy								N/A
	3.7	Chimney								N/A
	NOTES	3.1: Cracking exists at exterior foundation curbing. 3.4: Minimal cracking present at interior CMU blocks. 3.5: Additional lateral force resistance system is not present and cracking points to shifting structure.								

			System	Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**3.8**
	4.1	Ceilings								3.0
		A.	Suspended Ceiling (ACT)				2			
		B.	Gypsum Board						N/A	
		C.	Plaster						N/A	
		D.	Wood						N/A	
		E.	Other						N/A	
		F.	Exposed		4					
	4.2	Flooring								3.5
		A.	Carpet						N/A	
		B.	Vinyl						N/A	
		C.	Tile		4					
		D.	Wood						N/A	
		E.	Concrete			3				
	4.3	Interior Wall/Partition Finishes								4.0
	4.4	Interior Doors								5.0
	4.5	Stairs Condition								N/A
		A.	Stairs/ Landing						N/A	
		B.	Handrails						N/A	
	4.6	Toilet Condition								3.7
		A.	Toilet Accessories		4					
		B.	Toilet Partitions						N/A	
		C.	Water Closets			3				
		D.	Urinals						N/A	
		E.	Lavatorie /Sinks		4					
		F.	Counter						N/A	
		G.	Shower Compartments						N/A	
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	N O T E S	4.1.A: Acoustic ceiling tiles are damaged and stained.								

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**3.7**
	5.1	Mechanical Systems								4.5
		A.	HVAC		4					
		B.	Control System	5						
		C.	Chiller						N/A	
		D.	Cooling Towers						N/A	
		E.	Duct Work	5						
		F.	Ventilation\ Air Distribution		4					
		G.	Boilers						N/A	
	5.2	Electrical Systems								3.0
		A.	Transformer						N/A	
		B.	Switchgear						N/A	
		C.	Panelboards (Condition & Capacity)			3				
		D.	Devices (Switches & Receptacles)			3				
		E.	Interior Lighting Fixtures			3				
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System						N/A	
	5.3	Voice and Data Systems								N/A
	5.4	Plumbing Systems								3.7
		A.	Plumbing Fixtures			3				
		B.	Water Distribution System/ Pipes		4					
		C.	Water Heaters		4					
	5.5	Gas Distribution Systems								N/A
	5.6	Fire Suppression System								N/A
	NOTES									

System				Condition		
				Compliance	Non-compliance	N/A
6	**ADA Compliance**					
	6.1	Site				
		A.	Accessible Parking Spaces		NC	
		B.	Passenger Loading Zones		NC	
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space	C		
		B.	Doors/ Doorways/Gates		NC	
		C.	Threshold	C		
		D.	Ramps			N/A
		E.	Stairways	C		
		F.	Handrails			N/A
		G.	Elevators			N/A
	6.3	Toilet				
		A.	Clearances/Accessible Stall	C		
		B.	Toilet Accessories		NC	
		C.	Water Closets		NC	
		D.	Urinals			N/A
		E.	Lavatories/ Sinks		NC	
		F.	Counters			N/A
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry		NC	
		B.	Furniture, Fixtures & Equipment - FF&E			N/A
		C.	Signage		NC	
	NOTES	6.1.A: Exiting accessible parking spaces do not meet the ADA requirement. Restripe the ADA parking stalls to comply with ADA. 6.1.B: Exiting passenger loading zone does not meet the ADA requirement. Restripe the loading zone and lettering to meet the ADA requirement. 6.2.B: Provide ADA compliant door push paddle to exit doors. 6.3.B: Provide ADA compliant toilet accessories. 6.3.C: Provide ADA compliant water closet. 6.3.C: Provide ADA compliant urinal in men's toilet room. 6.3.E: Provide ADA compliant sink. 6.4.A: Provide knee and toe clearances under interior sink counter. 6.4.C: Provide ADA compliant room signage with tactile text and Braille. Provide ADA compliant toilet room signage.				

Photo Documentation | Exterior Overall





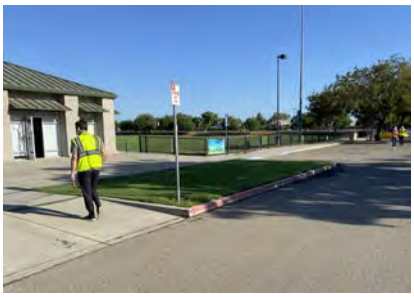
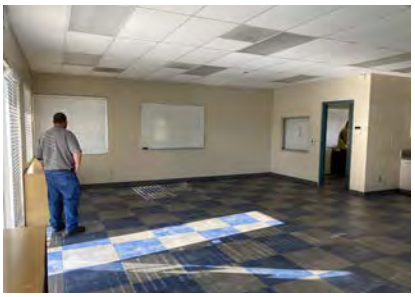




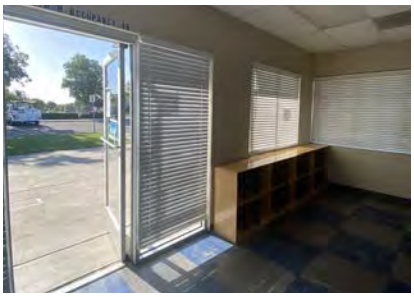


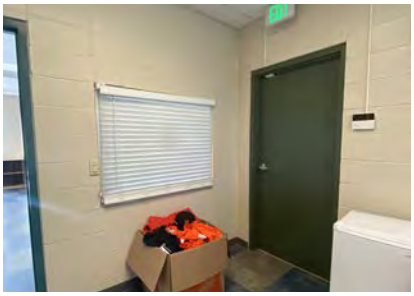
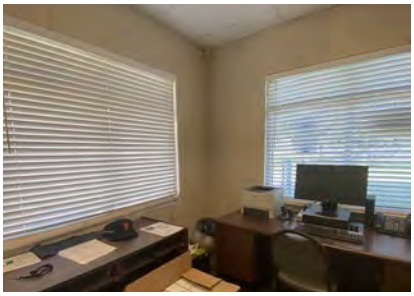


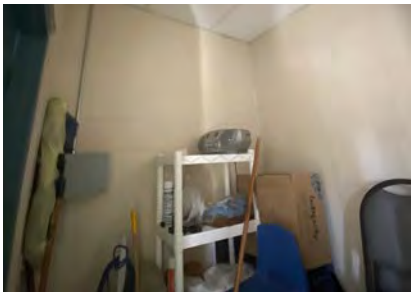
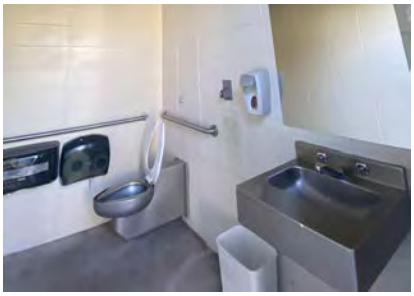

Photo Documentation | Interior Blow Ups







FACILITY CONDITION ASSESSMENT

TRACY HISTORICAL MUSEUM



Condition Summary - Tracy Historical Museum

Overall Rating **3.2**







Facility Condition

Site 2.8

Parking lot pavement is in fair condition with signs of light deterioration and striping that is beginning to fade. Landscaping is healthy overall but weeds are growing adjacent to parking lot fencing, some plants are dry and areas of open dirt are present. Major cracking is present at main entrance steps on Adam Street. Slight cracking is present at steps from rear parking area. A short sliding gate adds minimal security to the parking area and contains a rusted wheel mechanism. Exposed top of metal fencing at sliding gate is damaged in multiple areas. Flagpole is in good condition but requires cleaning. Curbing at Adam Street side of site is cracked and deteriorated and damage continues into street.

Exterior Envelope 3.3

Painted concrete exterior envelope is generally in fair condition with surface discoloration in areas and light cracking present. Paint chipping is present in window frames. Exterior lighting fixtures are outdated and dirty due to cobwebs and other debris. Stucco at exterior and stair siding requires intensive cleaning and in some cases new paint. Roof parapet is not flush in places and some clay roof tiles are loose, chipped or missing. The underside of the roof overhand requires new paint. Roof surface itself requires intensive cleaning and new sealant in areas. Skylight windows are single pane and serviceable from roof and contain rusted frames. Drainage elements are rusted and clogging evidence and ponding water are both present around drains. Entrance door at rear near parking lot requires replacement. Main entrance doors require replacement or new paint. Decorative window balconies are rusted in places and require new paint at minimum. Single pane windows are present.

Structure 3.1

Patched up cracking on the ceiling within small display room suggests structural issues. Large crack is present from door frame to ceiling in storage room. A major structural investigation should take place to assess the facility's structure. Other than cracking in places, no significant structural shifting was visibly present. However, an investigation should take place due to the facility's 1916 construction date.

Interior 3.4

Stains and discoloration on suspended ceiling tiles suggest leakage from the second floor. Tiling throughout museum is in good condition with signs of wear and discoloration. Wood flooring throughout main level of interior is scuffed, scratched and contains misaligned floorboards in places. Tile flooring near Holly Sugar display requires cleaning. Carpeting at second floor is in good condition but transition strips and tile grout around these ares require replacement. Elevator is in serviceable condition with remaining service life but sills require intensive cleaning. Finished in restrooms are in good condition.

MEP Systems 3.5

HVAC systems are in good condition. Leaking from restroom upstairs restroom should be repaired. Rooftop HVAC equipment is nearing the end of its useful service life and would benefit from replacement. Water lines going to AC units are rusted. Fire water access is provided on-site but access valves require painting and new signage due to rust and paint deterioration. Exit signage is required to be illuminated.

Condition Summary - Tracy Museum

ADA Compliance **Needs Compliance**

Stair and ramp handrails at front and rear of building are not ADA compliant as handles are square and do not provide 12" flat surfaces at landings. Truncated domes are not present. General sidewalk slope is not ADA compliant. An elevator is present. Some issues are present related to accessibility due to lack of clear floor space. ADA compliant stall in men's restroom is being used as storage which hinders the 5' turnaround requirement. Paper towel dispenser is protruding. Marble Transition Strips are not compliant. Clear floor space is not provided under kitchenette sink. Interior stairway handrails are non-compliant. Upstairs restrooms are not ADA compliant and contain old fixtures and finishes.

Recommendation Summary - Tracy Museum


Exterior


Interior


Bathroom

Recommendations

Site: Recommendations include refining the landscaping, repaving and resurfacing the pavement of the road, and repairing the cracks at the concrete steps. Further recommendations include cleaning rusted wheel mechanism and repairing damaged top metal fencing at sliding gate.

Exterior Envelope: It is recommended to clean and paint exterior surface where discoloration and cracking is present. It is also recommended to repaint window frames and repair damage at roof.

Structure: Structural recommendations should include assessing structural integrity of roofing system and repairing any all cracks.

Interior: Improvements should include replacing stained ceiling tiles and repairing and cleaning wood flooring.

MEP Systems: Recommended actions include fixing leakage from second floor restroom.

ADA Compliance: It is recommended to resurface sidewalk slope and ramp toward entrance to comply with ADA code. Additions should include truncated domes.

Impact of Recommended Works

Site: Impact of site recommendations include disturbed access to the museum. Three weeks will be required to repave street, repair cracking at steps, and complete other recommendations.

Exterior Envelope: Impacts of recommendations are minor and will improve the physical appearance of the facility. One weeks will be required to clean and paint the exterior surface and window frames.

Structure: Performing structural recommendations should have minor impact on the museum's operations. Completion of the recommendations will result in increased structural integrity and will require two weeks to perform.

Interior: Executing recommended improvements will result in the temporary closing of the museum to complete flooring and ceiling tile recommendations. Two weeks will be required to remodel interiors.

ADA Compliance: Impact of ADA compliance recommendations will result in disturbed access to the museum. Two weeks will be required to complete all recommendations.

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
Tracy Historical Museum - Overall										**3.2**
1	**Site/ Civil/ Landscape**									**2.8**
	1.1	Fences/ Walls/ Gates								3.0
		A.	Perimeter Fencing			3				
		B.	Equipment Fencing			3				
		C.	Landscape Walls/ Piers / Structures			3				
		D.	Gates			3				
	1.2	Paving								2.5
		A.	Sidewalks/ Walkways/ Crosswalks				2			
		B.	Curbing			3				
		C.	Driveways/ Parking Pavement				2			
		D.	Striping/ Marking/ Speed Bumps			3				
		E.	Patios						N/A	
	1.3	Landscape								2.7
		A.	Ground Cover				2			
		B.	Trees			3				
		C.	Irrigation System			3				
	1.4	Site Features/ Fixtures/ Furniture/ Signage								3.0
		A.	Landscape Features/ Play Equipment			3				
		B.	Exterior Lighting Fixtures			3				
		C.	Water Fixtures			3				
		D.	Exterior Site Furniture						N/A	
		E.	Site Utility			3				
	1.5	Stormwater Management								3.0
	N O T E S	1.2.A: Cracking is present at entrance steps and throughout sidewalk. 1.2.C: Parking pavement is beginning to deteriorate and street pavement adjacent to the building contains much patching and cracking and requires refinishing. 1.3.A: Weeds are growing adjacent to parking lot fencing with some dry plant material and open dirt present.									

	System			Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**3.3**
	2.1	Exterior Wall Finish								4.0
	2.2	Eaves and Fascias								3.0
	2.3	Doors/ Windows/ Louvers								3.3
		A.	Windows			3				
		B.	Louvers and Vents		4					
		C.	Exterior Doors & Hardware			3				
	2.4	Roofing								2.9
		A.	Roof Surface			3				
		B.	Roof Opening/ Skylight/ Penetrations			3				
		C.	Roof Equipment Curbing			3				
		D.	Leakage			3				
		E.	Ponding Water				2			
		F.	Roof Drainage				2			
		G.	Gutters / Downspouts			3				
		H.	Roof Vents		4					
	N O T E S	2.4.E: Ponding water is present at roof surface. 2.4.F: Components of roof drainage system are inhibited by clogs due to debris buildup.								
3	**Structure**									**3.1**
	3.1	Foundation/ Footing								3.0
	3.2	Columns								3.0
	3.3	Framing System								3.0
	3.4	Walls								3.0
	3.5	Lateral Force Resistance System								3.0
	3.6	Covered Walkway/Canopy								4.0
	3.7	Chimney								3.0
	N O T E S									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**3.4**
	4.1	Ceilings								3.0
		A.	Suspended Ceiling (ACT)			3				
		B.	Gypsum Board			3				
		C.	Plaster			3				
		D.	Wood						N/A	
		E.	Other						N/A	
		F.	Exposed						N/A	
	4.2	Flooring								3.0
		A.	Carpet		4					
		B.	Vinyl						N/A	
		C.	Tile			3				
		D.	Wood				2			
		E.	Concrete						N/A	
	4.3	Interior Wall/Partition Finishes								4.0
	4.4	Interior Doors								3.0
	4.5	Stairs Condition								3.5
		A.	Stairs/ Landing			3				
		B.	Handrails		4					
	4.6	Toilet Condition								3.7
		A.	Toilet Accessories	5						
		B.	Toilet Partitions			3				
		C.	Water Closets			3				
		D.	Urinals		4					
		E.	Lavatorie /Sinks			3				
		F.	Counter		4					
		G.	Shower Compartments						N/A	
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	NOTES	4.2.D: Wood flooring is scuffed at the main level and contains misaligned floorboards.								

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**3.5**
	5.1	Mechanical Systems								3.2
		A.	HVAC			3				
		B.	Control System			3				
		C.	Chiller			3				
		D.	Cooling Towers						N/A	
		E.	Duct Work			3				
		F.	Ventilation\ Air Distribution		4					
		G.	Boilers						N/A	
	5.2	Electrical Systems								3.3
		A.	Transformer						N/A	
		B.	Switchgear						N/A	
		C.	Panelboards (Condition & Capacity)			3				
		D.	Devices (Switches & Receptacles)			3				
		E.	Interior Lighting Fixtures			3				
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System		4					
	5.3	Voice and Data Systems								4.0
	5.4	Plumbing Systems								2.7
		A.	Plumbing Fixtures			3				
		B.	Water Distribution System/ Pipes				2			
		C.	Water Heaters			3				
	5.5	Gas Distribution Systems								3.0
	5.6	Fire Suppression System								5.0
	NOTES	5.4.B: Water distribution system piping going to HVAC systems are rusted. Fire water access valves require painting due to rust.								

System				Condition		
				Compliance	Non-compliance	N/A
6	**ADA Compliance**					
	6.1	Site				
		A.	Accessible Parking Spaces	C		
		B.	Passenger Loading Zones		NC	
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space		NC	
		B.	Doors/ Doorways/Gates		NC	
		C.	Threshold		NC	
		D.	Ramps		NC	
		E.	Stairways		NC	
		F.	Handrails		NC	
		G.	Elevators	C		
	6.3	Toilet				
		A.	Clearances/Accessible Stall	C		
		B.	Toilet Accessories		NC	
		C.	Water Closets	C		
		D.	Urinals	C		
		E.	Lavatories/ Sinks	C		
		F.	Counters	C		
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry		NC	
		B.	Furniture, Fixtures & Equipment - FF&E		NC	
		C.	Signage		NC	
	N O T E S	6.1.B: Passenger loading zones are non-compliant. Truncated domes shall be provided at the end of sidewalk. 6.2.A: Remove obstacles on accessible routes for enough open space clearance. 6.2.C: Some interior thresholds are not compliant. 6.2.D.E.F: Provide ADA compliant handrails and guardrails to exterior ramp, stair, and interior stair. 6.3.B: Provide ADA compliant grab bars and accessories in the gender-neutral toilet room. 6.4.A: Provide knee and toe clearances under working surfaces, and front desk. 6.4.B: Provide ADA compliant furniture, fixtures and equipment with accessible height and knee and toe clearances. 6.4.C: Provide ADA compliant room signage with tactile text and Braille. Provide ADA compliant toilet room signage.				

Photo Documentation | Exterior Overall













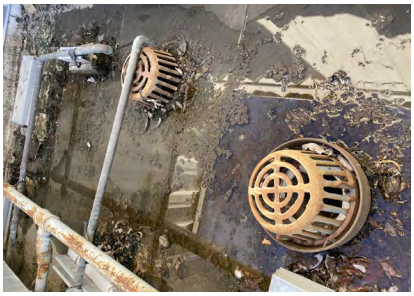
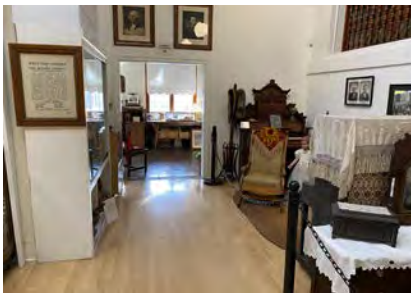
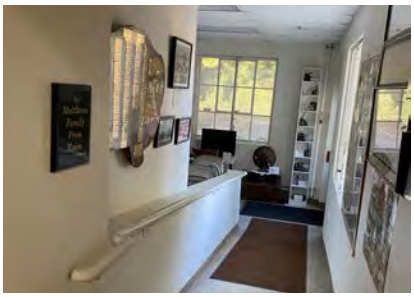
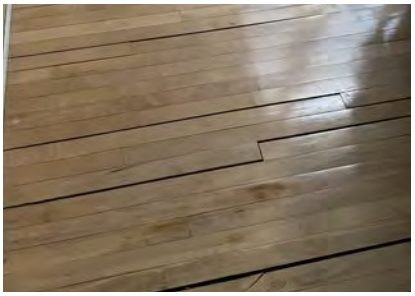



Photo Documentation | Interior Blow Ups











FACILITY CONDITION ASSESSMENT

GRAND THEATRE CENTER FOR THE ARTS

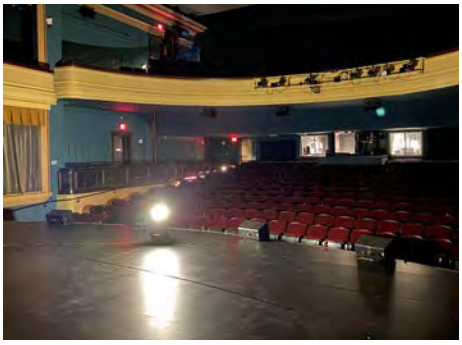


Condition Summary - Grand Theatre

Overall Rating **3.7**







Facility Condition

Site 3.7

The downtown area site serves the facility well. Some cracking is present at exterior site curbing and cracks at pavement exist throughout. Sidewalk surrounding the facility is finished in large tiles that are in good condition with minimal signs of staining or wear. The alleyway used for deliveries and production access contains surface paving in poor condition.

Exterior Envelope 3.2

Skylights are in poor condition due to failed seals and gaskets, but replacement is planned in a current capital improvement project. As part of the roof and skylights replacement project, interior soffit components will be investigated and repaired as required. Exterior paint is faded at downtown facing ones. Exterior signage is in fair condition but would benefit from modernization. Aluminum framed windows are present at the exterior. Exterior overhang near corner entrance has minimal signs of cracking. Exterior siding is constructed out of various materials due to the facility's long standing construction history and incorporation of surrounding buildings. Exterior lighting is generally lacking and outdated especially in places such as the roof parapet. Large metal door with access to and from the alley area is rusted and damaged at base. Rusted track fixings and components are present along with deteriorated rubber at the frame and track guides. Repair of exterior wall cracks and exterior painting is included as a current CIP item.

Structure 3.2

Large ductwork in MEP access areas near attic contain questionable seismic bracing. Some structural beams in attic/MEP access areas contain rust in a few locations and at bolt connections. Wood structure in this area is poorly constructed with nails splitting from wood and connection points. Moderate cracking is present at exposed concrete structure in office area. Concrete flooring of orchestra pit area is cracked. Objects hanging in the children's art room require additional lateral and longitudinal non-structural bracing.

Interior 4.0

Interior acoustic ceiling tiles are lightly stained with grids askew in some office areas. Lobby concrete flooring is in especially good condition with sealant providing a nice sheen. Carpeting in various areas of the building is lightly worn with service life remaining. Lighting fixtures vary considerably throughout the building's interior. Some are historic fixtures original to the building's construction and largely in restored condition. Paint throughout the interior varies in color and finish but serves the facility well. Some staining present at finish of second floor balcony visible from ground floor lobby. Wood flooring in the Dance Studio has a gloss finish applied annually and the central area of flooring is textured. Cracks are present at mirror panels at Dance Studio walls near areas where support bars are attached. Red velvet seats at the Historic Grand View Theatre are worn in multiple areas including seat cushions, seat backs and arm rests. Yellow paint on stair treads to orchestra pit area is fading. Some sound deadening material at the stage area is coming loose from wall attachment points. Carpeting in theater area is lightly worn. Flooring at Black Box theater is scuffed and contains a dull finish. Restroom VCT tile flooring is discolored and warped. Some staining on ceiling is present near ADA shower in restroom area. Temporary repairs to ceiling system in Gallery Workroom are visible and involve taped ceiling tiles. Grout in tile flooring in art

Condition Summary - Grand Theatre

store is stained in high traffic areas. Tile Restroom Floor at 2nd story contains stained grout. A significant crack exists from the Art Gallery to the Dance Studio in decorative flooring, and the same anomaly occurs at the main lobby near the foyer.

MEP Systems 4.3

An RCM fire sprinkler system located in the alleyway has faded dials and controls along with flaking paint and visible rust on associated conduit which is causing steams. The backflow preventer located in the alleyway appears aged and rusted. Main Thysen Krupp elevator system is in good condition with modern digital controls and is rated at 120/208 V. Interior wall-mounted electrical conduit shows no signs of deterioration. Electrical service is provided by a Dual section 1600A 208Y/120V main switchboard and another Dual Section 1000A 208Y/120V switchboard.

ADA Compliance Needs Compliance

Handrails throughout the lobby are non-compliant due to very minor dimensional violations. Truncated domes at the entrance to the facility are present at the downtown area leading to other areas of downtown. Some work areas are non-compliant due to storage spaces covering open floor space area.

Recommendation Summary - Grand Theatre



Exterior


Lobby


Bathroom

Recommendations

Site: Recommendations include repairing cracking at exterior site curbing, and re-surfacing alleyway.

Exterior Envelope: It is recommended to modernize exterior signage, add exterior lighting, and replace the large metal door at the alley area including track components.

Structure: Recommendations include adding bracing to large ductwork in MEP access areas, cleaning and protecting structural beams in the same areas, and reconstructing wood structure where needed. In the orchestra pit, it is recommended to repair cracking of concrete flooring and add lateral and longitudinal non-structural bracing.

Interior: Recommended actions include realigning ceiling tiles, replacing worn seats at the theater, reapplying sound deadening material at the stage area, maintaining the Studio Theater accordingly, replacing VCT tile in restroom, replacing ceiling tiles in Gallery Workroom and cleaning grout in tile flooring in the art store and restroom floor at the 2nd story.

MEP Systems: Improvements should include replacing RCM fire sprinkler system located in the alleyway and replacing the backflow preventer located in the same area.

ADA Compliance: Recommendations include making minor dimensional fixes to handrails throughout the lobby and clearing floor spaces in work areas.

Impact of Recommended Works

Site: Impact of site recommendations are minor. Three weeks will be required to repair curbing and re-surface alleyway.

Exterior Envelope: Impacts of recommendations include disturbed access from the alley area. Three weeks will be required for the completion of all repairs.

Structure: Performing structural recommendations will result in the temporary closing of the center. Four weeks will be required to reconstruct wood structure and add lateral and longitudinal bracing. Two weeks will be required for other minor repairs. Additional structural investigation and design time will be required.

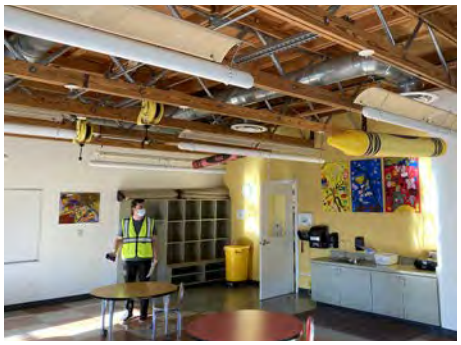
Interior: Performing the interior recommendations will have a moderate effect on theater operations; completion of the recommendations will result in a heightened physical appearance. Three weeks will be required to remodel interiors.

MEP Systems: Replacing deteriorated components of fire sprinkler system will require additional investigation and design considerations. The building may be closed for a short time for renovations to MEP systems depending on severity of chosen solutions.

ADA Compliance: Performing the recommended improvements will have a minor impact on the theater's operations. One week will be required to complete all recommendations.

Facility Description - Grand Theatre


Exterior


Interior


MEP

Building Description

The Historic Grand Theatre is a double story building constructed five historic buildings dated as early as 1922. The original facility opened in 1923 as a vaudeville theatre and was remodeled in 2008. The Grand Theatre Center for the Arts is located on the corner of N Central Ave and W 7th Street. The building has a mixed construction type built on a concrete slab-on-grade foundation. The exterior of the theatre is clad in large tiles painted with a tan color and the entrance is adorned with bright colors such as blue, red, and yellow. The entrance of the building has color tiles leading to the door and directly to the right of the building is an empty lot. Immediately adjacent to the Theatre is the Tracy Town Hall and Jail.

The Grand Theatre Center for the Arts houses spaces and equipment for a variety of recreation, socializing and performance activities. Floor finishes throughout the interior of the building vary to accommodate the wide range of activities that take place there. Multiple dressing rooms are provided for performers and there are gallery spaces for the public to enjoy the fine art exhibits. Other spaces provided are a dance studio, cafe, and large theater where main performances, concerts, and movie screenings happen.

Age

The Grand Theatre Center for the Arts is 15 years old and was constructed in 2007.

Use of Building

The building is used in the following ways:

- Hosts theatrical performances, movie screenings, and concerts.
- Provides spaces for an Arts Education Program, fine arts exhibitions, and other special events.
- Provides spaces for business meetings, trainings, and luncheons.
- Provides City Department offices

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
Grand Theatre Center for the Arts - Overall										**3.7**
1	**Site/ Civil/ Landscape**									**3.7**
	1.1	Fences/ Walls/ Gates								3.5
		A.	Perimeter Fencing						N/A	
		B.	Equipment Fencing		4					
		C.	Landscape Walls/ Piers / Structures						N/A	
		D.	Gates			3				
	1.2	Paving								3.8
		A.	Sidewalks/ Walkways/ Crosswalks		4					
		B.	Curbing		4					
		C.	Driveways/ Parking Pavement			3				
		D.	Striping/ Marking/ Speed Bumps			3				
		E.	Patios	5						
	1.3	Landscape								N/A
		A.	Ground Cover						N/A	
		B.	Trees						N/A	
		C.	Irrigation System						N/A	
	1.4	Site Features/ Fixtures/ Furniture/ Signage								3.5
		A.	Landscape Features/ Play Equipment						N/A	
		B.	Exterior Lighting Fixtures			3				
		C.	Water Fixtures			3				
		D.	Exterior Site Furniture	5						
		E.	Site Utility			3				
	1.5	Stormwater Management								4.0
	N O T E S									

	System			Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**3.2**
	2.1	Exterior Wall Finish								3.0
	2.2	Eaves and Fascias								3.0
	2.3	Doors/ Windows/ Louvers								3.7
		A.	Windows		4					
		B.	Louvers and Vents			3				
		C.	Exterior Doors & Hardware		4					
	2.4	Roofing								3.2
		A.	Roof Surface			3				
		B.	Roof Opening/ Skylight/ Penetrations		4					
		C.	Roof Equipment Curbing			3				
		D.	Leakage						N/A	
		E.	Ponding Water						N/A	
		F.	Roof Drainage			3				
		G.	Gutters / Downspouts						N/A	
		H.	Roof Vents			3				
	N O T E S									
3	**Structure**									**3.2**
	3.1	Foundation/ Footing								3.0
	3.2	Columns								3.0
	3.3	Framing System								3.0
	3.4	Walls								3.0
	3.5	Lateral Force Resistance System								3.0
	3.6	Covered Walkway/Canopy								4.0
	3.7	Chimney								N/A
	N O T E S									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**4.0**
	4.1	Ceilings								3.7
		A.	Suspended Ceiling (ACT)			3				
		B.	Gypsum Board						N/A	
		C.	Plaster		4					
		D.	Wood		4					
		E.	Other						N/A	
		F.	Exposed						N/A	
	4.2	Flooring								3.8
		A.	Carpet		4					
		B.	Vinyl						N/A	
		C.	Tile		4					
		D.	Wood		4					
		E.	Concrete			3				
	4.3	Interior Wall/Partition Finishes								4.0
	4.4	Interior Doors								4.0
	4.5	Stairs Condition								3.5
		A.	Stairs/ Landing			3				
		B.	Handrails		4					
	4.6	Toilet Condition								4.8
		A.	Toilet Accessories		4					
		B.	Toilet Partitions	5						
		C.	Water Closets						N/A	
		D.	Urinals						N/A	
		E.	Lavatorie /Sinks	5						
		F.	Counter	5						
		G.	Shower Compartments	5						
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**4.3**
	5.1	Mechanical Systems								4.0
		A.	HVAC		4					
		B.	Control System		4					
		C.	Chiller						N/A	
		D.	Cooling Towers						N/A	
		E.	Duct Work		4					
		F.	Ventilation\ Air Distribution		4					
		G.	Boilers						N/A	
	5.2	Electrical Systems								4.2
		A.	Transformer						N/A	
		B.	Switchgear		4					
		C.	Panelboards (Condition & Capacity)	5						
		D.	Devices (Switches & Receptacles)		4					
		E.	Interior Lighting Fixtures		4					
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System		4					
	5.3	Voice and Data Systems								5.0
	5.4	Plumbing Systems								4.5
		A.	Plumbing Fixtures		4					
		B.	Water Distribution System/ Pipes	5						
		C.	Water Heaters						N/A	
	5.5	Gas Distribution Systems								4.0
	5.6	Fire Suppression System								4.0
	N O T E S									

System				Condition		
				Compliance	Non-compliance	N/A
6	ADA Compliance					
	6.1	Site				
		A.	Accessible Parking Spaces	C		
		B.	Passenger Loading Zones		NC	
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space	C		
		B.	Doors/ Doorways/Gates	C		
		C.	Threshold	C		
		D.	Ramps			N/A
		E.	Stairways	C		
		F.	Handrails	C		
		G.	Elevators	C		
	6.3	Toilet				
		A.	Clearances/Accessible Stall	C		
		B.	Toilet Accessories	C		
		C.	Water Closets	C		
		D.	Urinals	C		
		E.	Lavatories/ Sinks	C		
		F.	Counters	C		
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry		NC	
		B.	Furniture, Fixtures & Equipment - FF&E		NC	
		C.	Signage		NC	
	NOTES	6.1.B: Exiting passenger loading zone does not meet the ADA requirement. Restripe the loading zone and lettering to meet the ADA requirement. 6.4.A: Provide knee and toe clearances under working surfaces, and front desk. 6.4.B: Provide ADA compliant furniture, fixtures and equipment with accessible height and knee and toe clearances. 6.4.C: Provide ADA compliant room signage with tactile text and Braille.				

Photo Documentation | Exterior Overall





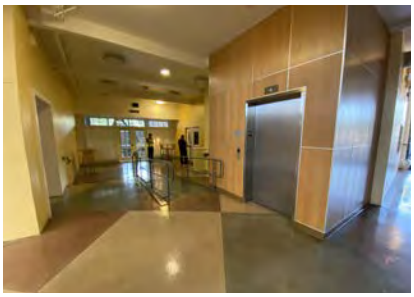


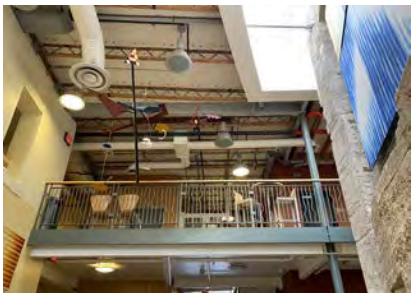
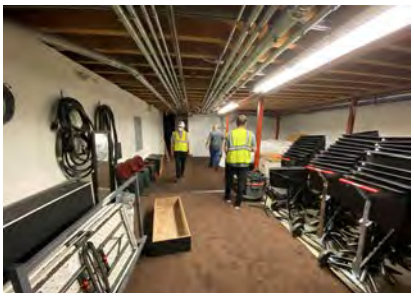
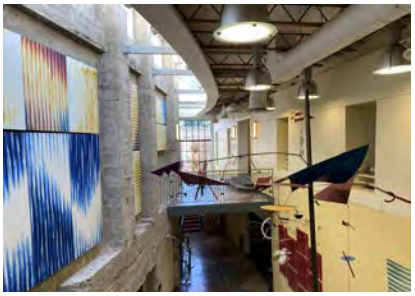


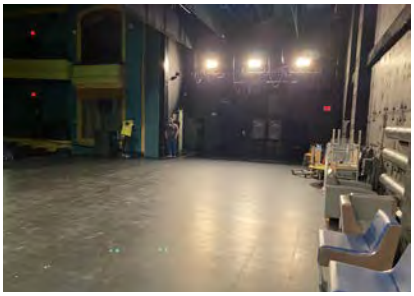




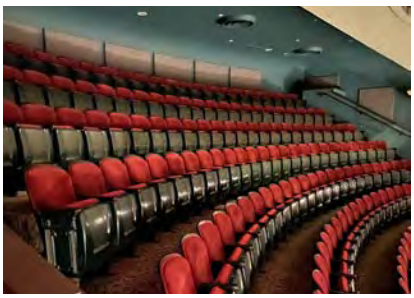

Photo Documentation | Interior Blow Ups







FACILITY CONDITION ASSESSMENT

LAMMERSVILLE SCHOOL



Condition Summary - Lammersville School

Overall Rating **3.1**







Facility Condition

Site 2.6

No parking to the Lammersville School is provided. Canopy posts at exterior sign contain rot at bases on both sides and paint is flaking from signage. Ground cover directly adjacent to the building consists of dirt and dry tan bark and would benefit from some renovation. Sidewalks contain minimal cracking.

Exterior Envelope 2.3

Wooden floorboards at porch and ramp are cracked and deteriorating in places. Evidence of wood rot is present at some areas along with excessive paint chipping on wooden boards and building wood siding. Wood paneling is missing at door frame base. The building requires complete repainting. Roof shingles are in poor condition and showing various levels of separation from roof surface and membrane. Gutters and downspouts are not provided.

Structure 3.1

Slight cracking at concrete surrounding foundation is present. Wood rot concerns exist. No other visible structural issues were observed.

Interior 3.5

Wood flooring at entrance (high traffic area) is scuffed and discolored. Historical elements showing the history of Lammersville School are largely present. The ceiling is finished in plaster and painted white. All lighting is wall mounted. Single pane vertically-sliding windows are found throughout.

MEP Systems 3.7

There is no restroom in the building. Electrical needs are met in the current use scenario.

ADA Compliance Needs Compliance

The facility is largely non-compliant due to lack of handrails at stairs and furniture that restricts path of travel. Mounting heights for interior accessories require adjustment. Wood ramp at rear of building appears to be ADA compliant but handrails require minor modification.

Recommendation Summary - Lammersville School


Exterior


Classroom


Patio

Recommendations

Site: Recommendations include the addition of a parking lot, replacing rotted canopy posts, repainting canopy post signage, and cleaning and maintaining the ground cover directly adjacent to the building.

Exterior Envelope: It is recommended to repair damaged wooden floorboards at porch and ramp, and repaint both the wooden board and the entire exterior envelope. Roof shingles should be replaced and gutters should be included.

Structure: Recommendations include repairing minor cracking in surrounding foundation.

Interior: Improvements include polishing wood flooring at entrance.

MEP Systems: No improvements are required.

ADA Compliance: Recommendations include the addition of handrails at stairs, moving furniture to allow an accessible path of travel, and adjusting mounting heights for interior accessories to meet compliance requirements.

Impact of Recommended Works

Site: Impact of recommendations will include, easier vehicular access to school and improved physical appearance. Three weeks will be required to provide paving, replace posts, repaint post signage, and cleaning surrounding landscape.

Exterior Envelope: Impacts of recommendations included temporary closing of the building and disturbed access to the building. Completion of these recommendations will result in improved access to the building, improved appearance of the school, decreased environmental damage through the roof, and a streamlined system for waste water disposal. Two weeks will be required to replace roofing deficiencies and two weeks will be required for other minor repairs.

Structure: Performing structural recommendations should have minor impact on the school; completion of the recommendations will result in increased structural integrity. Four weeks should be required for structural improvements.

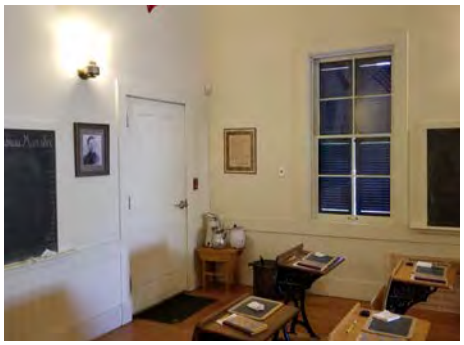
Interior: Performing the interior recommendations will cause a disturbed access to the school. One week will be required to polish flooring.

MEP Systems: There will be no impact of recommended works.

ADA Compliance: Impacts of recommended works include a disturbed access to the historical center, and a temporary closing for interior and site work. Four weeks will be required.

Facility Description - Lammersville School


Exterior


Interior


Entryway

Building Description

Lammersville School is a single story building that was constructed in 1870. The school is located on Blandford Lane directly adjacent to Clyde Bland Park. The building has a Class D wood frame for structure and is built on a concrete slab-on-grade foundation. The exterior of Lammersville School is clad with painted wood siding and shingles covering the roof. Exterior has some paving and minimal landscaping that allows for outdoor activities. Hardwood floor finishes are appropriate for the activities held in the space.

Lammersville Center houses a space for educational activities for grades kindergarten through eighth. This historical building attracts visitors to see the dated interiors and exterior.

Age

The Lammersville School building is 152 years old and was constructed in 1870.

Use of Building

The building is used in the following ways:

- Historical facility for the community of Tracy

			System	Condition						Rank
				Excellent	Good	Fair	Poor	Critical	N/A	
				5	4	3	2	1		
	Lammersville School - Overall									**3.1**
1	**Site/ Civil/ Landscape**									**2.6**
	1.1	Fences/ Walls/ Gates								N/A
		A.	Perimeter Fencing						N/A	
		B.	Equipment Fencing						N/A	
		C.	Landscape Walls/ Piers / Structures						N/A	
		D.	Gates						N/A	
	1.2	Paving								2.5
		A.	Sidewalks/ Walkways/ Crosswalks			3				
		B.	Curbing						N/A	
		C.	Driveways/ Parking Pavement						N/A	
		D.	Striping/ Marking/ Speed Bumps						N/A	
		E.	Patios				2			
	1.3	Landscape								2.5
		A.	Ground Cover				2			
		B.	Trees			3				
		C.	Irrigation System						N/A	
	1.4	Site Features/ Fixtures/ Furniture/ Signage								2.5
		A.	Landscape Features/ Play Equipment			3				
		B.	Exterior Lighting Fixtures				2			
		C.	Water Fixtures						N/A	
		D.	Exterior Site Furniture						N/A	
		E.	Site Utility						N/A	
	1.5	Stormwater Management								3.0
	N O T E S	1.2.E: Patio near building is paved but without furniture or other elements. 1.3.A: Ground cover or landscaping is missing in dirt areas directly adjacent to building and site. 1.4.B: Exterior lighting fixtures are modern LED photocell units but are lacking in numbers.								

	System			Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**2.3**
	2.1	Exterior Wall Finish								2.0
	2.2	Eaves and Fascias								2.0
	2.3	Doors/ Windows/ Louvers								3.3
		A.	Windows			3				
		B.	Louvers and Vents			3				
		C.	Exterior Doors & Hardware		4					
	2.4	Roofing								2.0
		A.	Roof Surface				2			
		B.	Roof Opening/ Skylight/ Penetrations						N/A	
		C.	Roof Equipment Curbing						N/A	
		D.	Leakage						N/A	
		E.	Ponding Water						N/A	
		F.	Roof Drainage						N/A	
		G.	Gutters / Downspouts						N/A	
		H.	Roof Vents						N/A	
	NOTES	2.4.A: Roof shingles are approaching their useful service life and are beginning to detach from building.								
3	**Structure**									**3.1**
	3.1	Foundation/ Footing								3.0
	3.2	Columns								3.0
	3.3	Framing System								3.0
	3.4	Walls								3.0
	3.5	Lateral Force Resistance System								3.0
	3.6	Covered Walkway/Canopy								3.0
	3.7	Chimney								4.0
	NOTES									

			System	Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**3.5**
	4.1	Ceilings								4.0
		A.	Suspended Ceiling (ACT)						N/A	
		B.	Gypsum Board		4					
		C.	Plaster						N/A	
		D.	Wood		4					
		E.	Other						N/A	
		F.	Exposed						N/A	
	4.2	Flooring								3.0
		A.	Carpet						N/A	
		B.	Vinyl						N/A	
		C.	Tile						N/A	
		D.	Wood			3				
		E.	Concrete						N/A	
	4.3	Interior Wall/Partition Finishes								4.0
	4.4	Interior Doors								4.0
	4.5	Stairs Condition								2.5
		A.	Stairs/ Landing				2			
		B.	Handrails			3				
	4.6	Toilet Condition								N/A
		A.	Toilet Accessories						N/A	
		B.	Toilet Partitions						N/A	
		C.	Water Closets						N/A	
		D.	Urinals						N/A	
		E.	Lavatorie /Sinks						N/A	
		F.	Counter						N/A	
		G.	Shower Compartments						N/A	
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	N O T E S	4.5.A: Wood porch stairs at main entrance are out of plumb and contain faded and chipped paint.								

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**3.7**
	5.1	Mechanical Systems								N/A
		A.	HVAC						N/A	
		B.	Control System						N/A	
		C.	Chiller						N/A	
		D.	Cooling Towers						N/A	
		E.	Duct Work						N/A	
		F.	Ventilation\ Air Distribution						N/A	
		G.	Boilers						N/A	
	5.2	Electrical Systems								3.7
		A.	Transformer						N/A	
		B.	Switchgear						N/A	
		C.	Panelboards (Condition & Capacity)						N/A	
		D.	Devices (Switches & Receptacles)			3				
		E.	Interior Lighting Fixtures		4					
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System		4					
	5.3	Voice and Data Systems								N/A
	5.4	Plumbing Systems								N/A
		A.	Plumbing Fixtures						N/A	
		B.	Water Distribution System/ Pipes						N/A	
		C.	Water Heaters						N/A	
	5.5	Gas Distribution Systems								N/A
	5.6	Fire Suppression System								N/A
	N O T E S									

System				Condition		
				Compliance	Non-compliance	N/A
6	**ADA Compliance**					
	6.1	Site				
		A.	Accessible Parking Spaces	C		N/A
		B.	Passenger Loading Zones			N/A
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space		NC	
		B.	Doors/ Doorways/Gates	C		
		C.	Threshold	C		
		D.	Ramps		NC	
		E.	Stairways		NC	
		F.	Handrails		NC	
		G.	Elevators			N/A
	6.3	Toilet				
		A.	Clearances/Accessible Stall			N/A
		B.	Toilet Accessories			N/A
		C.	Water Closets			N/A
		D.	Urinals			N/A
		E.	Lavatories/ Sinks			N/A
		F.	Counters			N/A
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry	C		
		B.	Furniture, Fixtures & Equipment - FF&E		NC	
		C.	Signage			N/A
	NOTES	6.2.A: Appropriate clear floor space is not maintained due to historical arrangement of desks. 6.2.D: Ramp handrails do not contain 12" flat landing surface at portions near building. 6.2.E: Stairways at front entrance require handrails. 6.2.F: Handrails at rear ramp do not contain 12" flat landing surface at portions near building. 6.4.B: Furniture at interior is not arranged in a compliant manner.				

Photo Documentation | Exterior Overall

















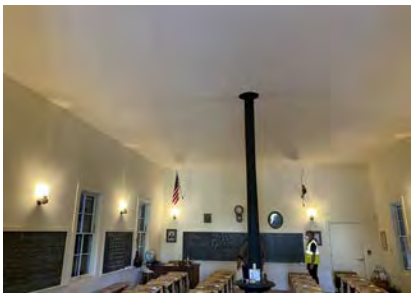








Photo Documentation | Interior Blow Ups







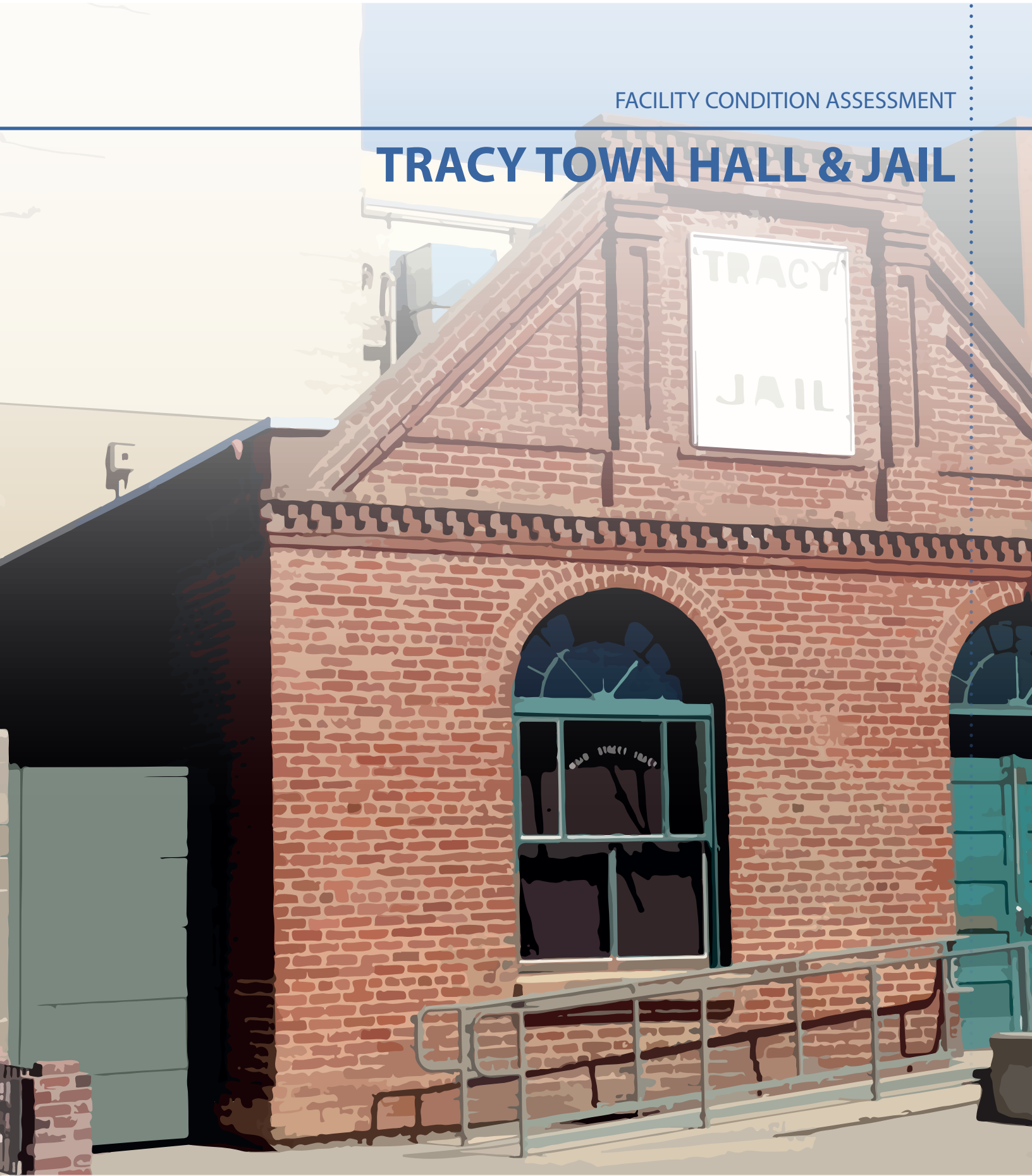







FACILITY CONDITION ASSESSMENT

TRACY TOWN HALL & JAIL



Condition Summary - Tracy Town Hall & Jail

Overall Rating **3.1**







Facility Condition

Site 3.6

Sidewalk surrounding the facility was recently renovated and is finished in large concrete tiles that are in good condition with minimal signs of staining or wear. The gate for side yard access is slightly discolored. Exterior lighting is lacking and site concrete is stained in places.

Exterior Envelope 2.5

The exterior masonry facade is in adequate condition for its age but shows signs of fading, crumbling and other deterioration. Along the bottom of the front, and concentrated on the right of the door is quite discolored and would benefit from cleaning and repainting. Tracy Town Hall and Jail sign is severely faded and rusting through in places. Most of the window frames need to be repaired or repainted. Exterior mounted alarm box is rusted.

Structure 2.7

Signs of structural settlement are present including cracking around window frames and around foundation. A large crack exists at the corner of the room and continues through the entire three-block wall. This is a known issue and investigation as to the cause has begun.

Interior 3.3

Hardwood floor finishes are worn throughout the building especially in high traffic areas. Wall and ceiling paint finishes are in good condition. Ceiling crack is present near the corner by the passageway to restroom. Furniture is in fair condition with light scratching on some surfaces. Finishes within restroom would benefit from modernization in general. Cabinets within the restroom do not have proper doors.

MEP Systems 3.4

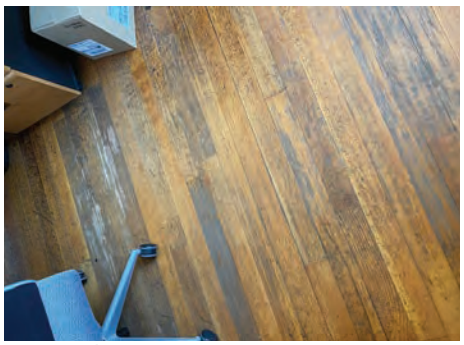
Located within the storage room, piping of hydraulic system is in good condition. A window-mounted A/C unit serves the facility in summer months.

ADA Compliance Needs Compliance

The entrance threshold is not ADA compliant. Various restroom fixtures and cabinetry is not compliant and must be relocated and/or replaced.

Recommendation Summary - Tracy Town Hall & Jail


Exterior


Interior Flooring


Interior

Recommendations

Site: Recommendations include finishing side fence area and adding exterior lighting.

Exterior Envelope: It is recommended to apply historical preservation measures to the exterior and renovate the sign. Replace window frames where required and paint others. It is also recommended to repair cracks on window sill.

Structure: No recommendations.

Interior: Improvements should include refinishing hardwood floors, repairing crack in ceiling, modernizing the whole restroom, and refinishing the storage room walls.

MEP Systems: No recommended actions.

ADA Compliance: It is recommended to improve the entrance threshold to increase accessibility into the building and relocate and replace various elements within the restroom.

Impact of Recommended Works

Site: Impact of recommendations are minor and will increase accessibility to the side of the building. One week is recommended to complete recommendations.

Exterior Envelope: Completing recommended actions will improve the physical and visual appearance of the Townhall and Jail. Two weeks will be required to repaint, repair, and replace all necessary elements.

Structure: No impact of recommended works.

Interior: Performing recommended actions will result in a temporary closing of the facility and disturbed access through the entrance. Four weeks will be required to complete all recommendations.

MEP Systems: No recommended actions.

ADA Compliance: Executing recommendations will increase accessibility into and within the building. Three weeks will be required to repair elements within the restroom and improve the threshold

Facility Description - Tracy Town Hall & Jail


Exterior


Interior


MEP

Building Description

The Tracy Town Hall and Old Jail House building is a single story building that was constructed in 1900. The Old Jail House is located on W. 7th Street. The site is immediately adjacent to the Grand Theatre. The building has a construction consisting of brick masonry with a wood roof. The exterior of the building is clad with bricks with painted wood accents on window frames. Exterior space is limited but serves the facility well, with a welcoming entrance. Floor finishes are largely hardwood, but remains generally appropriate to the building's use.

The small building once housed Tracy's Town Hall and its Jail. In addition, it used to house the local chapter of the Veterans of Foreign Wars. Now, it provides office spaces for The Grand Foundation. With a small partition at the entrance, the interior has an open floor plan which allows for easy communication and visuals throughout the building. Furniture communicates the use of the space; smaller desks indicate office areas and the large table indicates a meeting area.

Age

The Town Hall and Old Jail House building is 121 years old and was constructed in 1900.

Use of Building

The building is used in the following ways:

- Houses office spaces for The Grand Foundation

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
Tracy Townhall & Jail - Overall										**2.9**
1	**Site/ Civil/ Landscape**									**3.6**
	1.1	Fences/ Walls/ Gates								4.0
		A.	Perimeter Fencing		4					
		B.	Equipment Fencing						N/A	
		C.	Landscape Walls/ Piers / Structures						N/A	
		D.	Gates		4					
	1.2	Paving								3.5
		A.	Sidewalks/ Walkways/ Crosswalks		4					
		B.	Curbing			3				
		C.	Driveways/ Parking Pavement						N/A	
		D.	Striping/ Marking/ Speed Bumps						N/A	
		E.	Patios						N/A	
	1.3	Landscape								N/A
		A.	Ground Cover						N/A	
		B.	Trees						N/A	
		C.	Irrigation System						N/A	
	1.4	Site Features/ Fixtures/ Furniture/ Signage								3.0
		A.	Landscape Features/ Play Equipment						N/A	
		B.	Exterior Lighting Fixtures			3				
		C.	Water Fixtures						N/A	
		D.	Exterior Site Furniture						N/A	
		E.	Site Utility						N/A	
	1.5	Stormwater Management								4.0
	N O T E S									

	System			Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**2.5**
	2.1	Exterior Wall Finish								2.0
	2.2	Eaves and Fascias								3.0
	2.3	Doors/ Windows/ Louvers								2.3
		A.	Windows			3				
		B.	Louvers and Vents				2			
		C.	Exterior Doors & Hardware				2			
	2.4	Roofing								2.5
		A.	Roof Surface			3				
		B.	Roof Opening/ Skylight/ Penetrations						N/A	
		C.	Roof Equipment Curbing						N/A	
		D.	Leakage						N/A	
		E.	Ponding Water						N/A	
		F.	Roof Drainage						N/A	
		G.	Gutters / Downspouts				2			
		H.	Roof Vents						N/A	
	N O T E S	2.3.B: Window grates are rusted and otherwise deteriorating. 2.3.C: Exterior door at side area is in critical condition, but front doors are in good condition.								
3	**Structure**									**2.0**
	3.1	Foundation/ Footing								2.0
	3.2	Columns								N/A
	3.3	Framing System								N/A
	3.4	Walls								1.0
	3.5	Lateral Force Resistance System								3.0
	3.6	Covered Walkway/Canopy								N/A
	3.7	Chimney								N/A
	N O T E S	3.1: Light cracking is present around foundation and window frames. 3.4: Walls at interior contain cracks at corners and other areas which have expanded since time of assessment.								

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**3.3**
	4.1	Ceilings								3.0
		A.	Suspended Ceiling (ACT)						N/A	
		B.	Gypsum Board		4					
		C.	Plaster						N/A	
		D.	Wood						N/A	
		E.	Other				2			
		F.	Exposed						N/A	
	4.2	Flooring								3.3
		A.	Carpet						N/A	
		B.	Vinyl						N/A	
		C.	Tile		4					
		D.	Wood			3				
		E.	Concrete			3				
	4.3	Interior Wall/Partition Finishes								3.0
	4.4	Interior Doors								3.0
	4.5	Stairs Condition								4.0
		A.	Stairs/ Landing		4					
		B.	Handrails		4					
	4.6	Toilet Condition								3.3
		A.	Toilet Accessories			3				
		B.	Toilet Partitions			3				
		C.	Water Closets						N/A	
		D.	Urinals						N/A	
		E.	Lavatorie /Sinks		4					
		F.	Counter			3				
		G.	Shower Compartments						N/A	
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	N O T E S	4.1.E: Cracking is present at plaster ceiling near restrooms.								

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**3.0**
	5.1	Mechanical Systems								N/A
		A.	HVAC						N/A	
		B.	Control System						N/A	
		C.	Chiller						N/A	
		D.	Cooling Towers						N/A	
		E.	Duct Work						N/A	
		F.	Ventilation\ Air Distribution						N/A	
		G.	Boilers						N/A	
	5.2	Electrical Systems								3.0
		A.	Transformer						N/A	
		B.	Switchgear						N/A	
		C.	Panelboards (Condition & Capacity)						N/A	
		D.	Devices (Switches & Receptacles)			3				
		E.	Interior Lighting Fixtures			3				
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System			3				
	5.3	Voice and Data Systems								N/A
	5.4	Plumbing Systems								3.0
		A.	Plumbing Fixtures			3				
		B.	Water Distribution System/ Pipes			3				
		C.	Water Heaters						N/A	
	5.5	Gas Distribution Systems								N/A
	5.6	Fire Suppression System								3.0
	N O T E S									

System				Condition		
				Compliance	Non-compliance	N/A
6	**ADA Compliance**					
	6.1	Site				
		A.				N/A
		B.	Passenger Loading Zones		NC	
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space		NC	
		B.	Doors/ Doorways/Gates	C		
		C.	Threshold	C		
		D.	Ramps			N/A
		E.	Stairways			N/A
		F.	Handrails			N/A
		G.	Elevators			N/A
	6.3	Toilet				
		A.	Clearances/Accessible Stall		NC	
		B.	Toilet Accessories		NC	
		C.	Water Closets		NC	
		D.	Urinals		NC	
		E.	Lavatories/ Sinks		NC	
		F.	Counters		NC	
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry		NC	
		B.	Furniture, Fixtures & Equipment - FF&E		NC	
		C.	Signage		NC	
	NOTES	6.1.B: Passenger loading zones are not provided. 6.2.A: Remove obstacles on accessible routes for enough open space clearance. 6.3.A-F: Various dimensions related to toilet room and accessories are not compliant.				

Photo Documentation | Exterior Overall













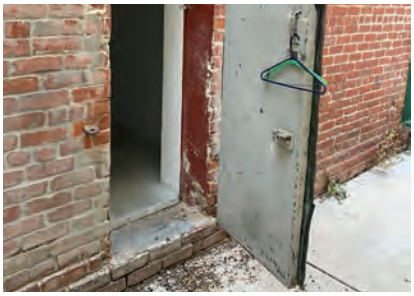


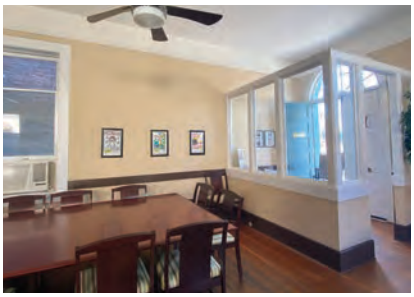
Photo Documentation | Interior Blow Ups

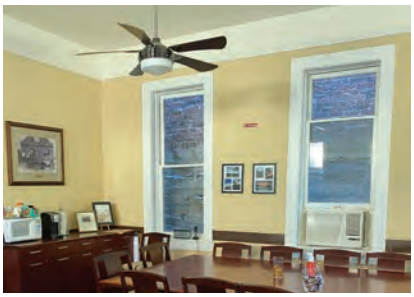






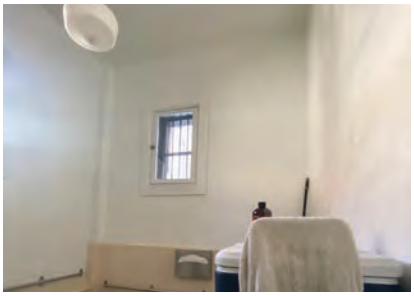


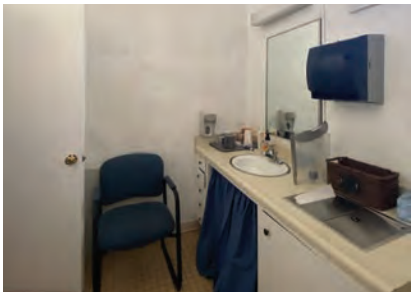


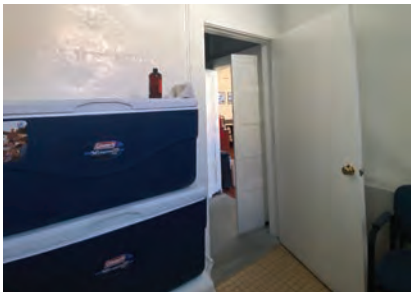








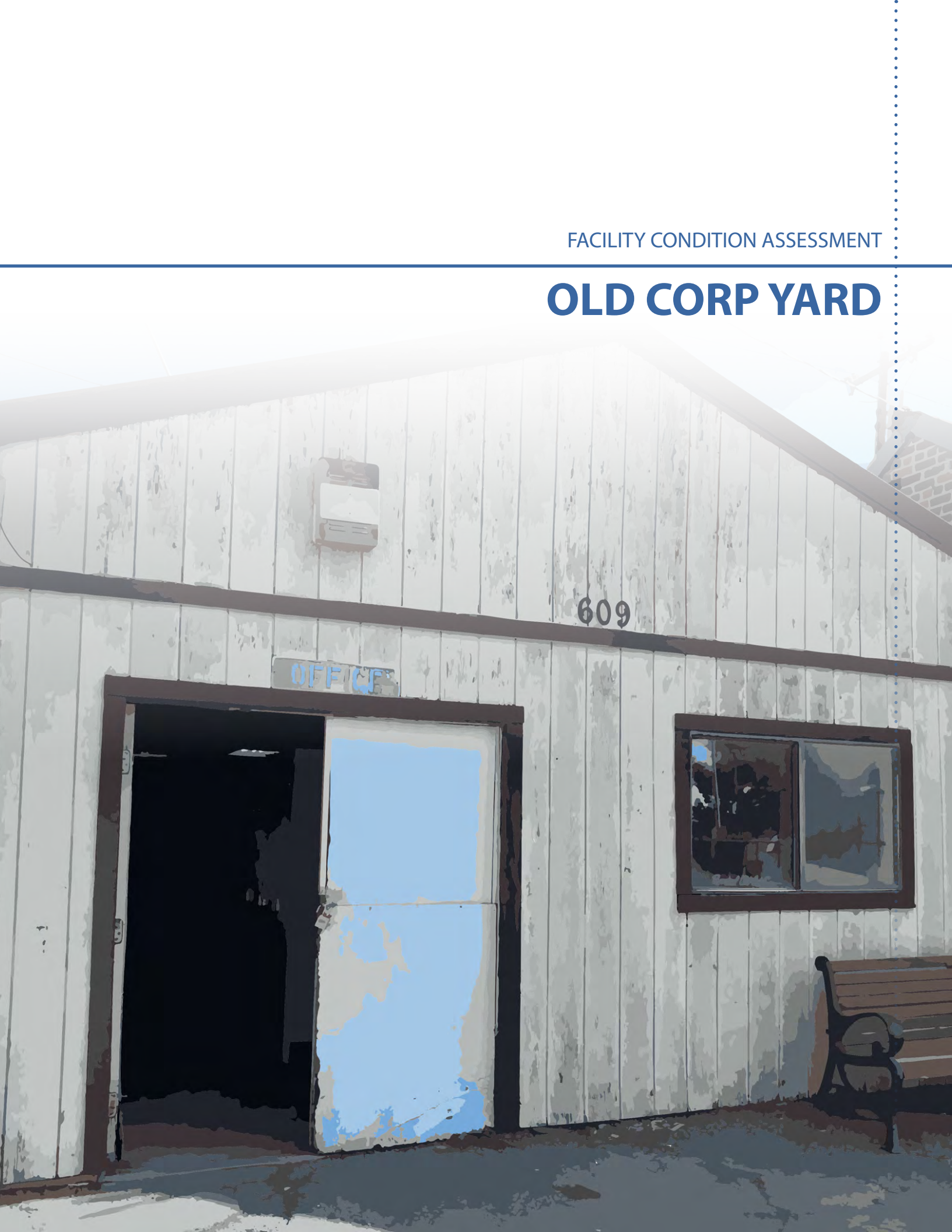






FACILITY CONDITION ASSESSMENT

OLD CORP YARD



Condition Summary - Old Corp Yard

Overall Rating **2.5**





Facility Condition

Site 2.4

There are multiple buildings on the Old Corp Yard's site including an office building and a maintenance building. Various aspects of the site are in differing states of condition. Pavement requires resurfacing with a deteriorated surface and large cracking throughout. A fenced-in area sits adjacent to the two facilities and contains cellular communications equipment rented from the city by cellular companies. This area has rust on structural elements and deteriorated pavement. A new pump house facility is located on the opposite end of the Old Corporation Yard's site adjacent to 6th Street and S. Tracy Boulevard. This facility is in visibly excellent condition and was excluded from condition assessments.

Exterior Envelope 2.3

The exterior of the maintenance building is historic masonry construction that is in fair condition for its age with slight chipping of bricks in places and grout that has cracked and deteriorated especially near the bottom of the structure. Entrance doors to the maintenance building are rotted wood and contain frames with paint chipping to the extreme. Windows are horizontally sliding and single pane and appear to be in fair condition and installed sometime after construction. The metal roof structure is slightly bent in places and contains no gutters although no leakage was reported. The exterior of the adjacent office building has painted wood siding that is chipping throughout. Exterior bolts and metal are rusting through paint coatings. Door hinges are rusted.

Structure 2.8

Exterior masonry at maintenance building shows visible signs of structural compromise including deteriorated grout and bricks. Aspects of the interior structure of the office building are exposed and beginning to rot in areas. A large crack is present in concrete flooring in the middle of the office building's interior.

Interior 2.2

The interior of the office facility contains rectangular ceiling tiles that are missing in areas and a grid system that is out of plumb. Some ceiling tiles are replaced with those that do not match the majority. Lighting is haphazardly arranged with differing methods of support. Concrete slab flooring serves the facility well but contains large chipping and cracks in areas.

MEP Systems 2.9

Exterior-mounted conduit and electrical equipment boxes at office building are rusted and bent in areas. Some electrical equipment appears to be out of service. Exposed wiring and conduit at office interior appears well-supported but many unorganized wires are found throughout exposed portions of the ceiling system. Exterior mounted lighting fixtures contain discolored lenses and housings but appear to be well mounted.

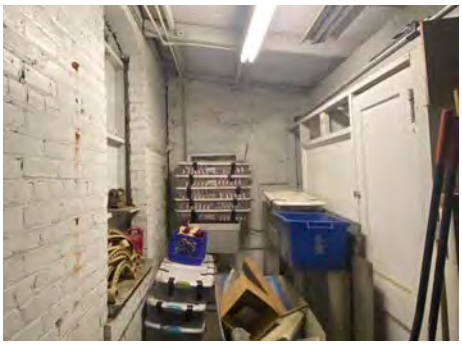
ADA Compliance Needs Compliance

The yard of the site doesn't contain ADA parking. The interior of the office facility does not contain clear floor space as there are many stored items in the center of pathways.

Recommendation Summary - Old Corp Yard


Exterior


Interior


Storage

Recommendations

Site: Recommendations include resurfacing the pavement throughout the site and improving structural elements that have rusted.

Exterior Envelope: Recommendations include replacing rotted wood entrance doors, adding gutters, improving the bent metal roofing structure, repainting the wood siding, and replacing rusted exterior bolts and door hinges.

Structure: Structural frame must be replaced and large crack in foundation must be repaired.

Interior: Grid system must be repaired to be in plumb and mismatched ceiling tiles must be replaced. Concrete slab must be repaired.

MEP Systems: Improvements should include replacing exterior-mounted conduit and electrical equipment, organizing wiring in interior of office, and cleaning exterior mounted lighting fixtures.

ADA Compliance: Provide clear floor space throughout the facilities.

Impact of Recommended Works

Site: Impact of site recommendations will improve the physical appearance and accessibility to the site. Four weeks will be required to complete recommendations.

Exterior Envelope: Impacts of recommendations include temporary closing of the center and disturbed access to the building. Four weeks will be required for all recommendations to be completed.

Structure: Performing structural recommendations will cause a temporary closing of the yard. Completion of the recommendations will result in increased structural integrity. Four weeks should be will be required for structural improvements.

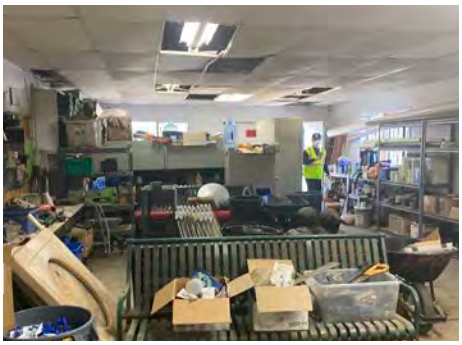
Interior: Executing recommended improvements will cause for a temporary closing of the yard. Three weeks will be required to complete interior recommendations.

ADA Compliance: No impact of recommended works.

Facility Description - Old Corp Yard


Exterior


Ceiling


Interior

Building Description

The Old Corporation Yard was utilized as the City's Public Works Yard before the construction of the Boyd Service Center. Facilities on the site include an office building and a masonry shop building. These spaces are utilized by Public Works staff but aren't locations of main offices. A new water pump facility is also on site as well as an enclosed yard that contains cellular communications towers. This enclosed yard is leased by communications companies from the City of Tracy.

Age

The Old Corporation Yard building is multiple decades old. Exact construction date is unknown but estimated to be prior to 1950.

Use of Yard

The Old Corporation Yard is used in the following ways:

- Auxiliary Public Works offices
- Cellular communications towers
- Water pump facility

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
Old Corp Yard - Overall										**2.6**
1	**Site/ Civil/ Landscape**									**2.4**
	1.1	Fences/ Walls/ Gates								3.3
		A.	Perimeter Fencing		4					
		B.	Equipment Fencing			3				
		C.	Landscape Walls/ Piers / Structures			3				
		D.	Gates			3				
	1.2	Paving								2.0
		A.	Sidewalks/ Walkways/ Crosswalks						N/A	
		B.	Curbing						N/A	
		C.	Driveways/ Parking Pavement				2			
		D.	Striping/ Marking/ Speed Bumps						N/A	
		E.	Patios						N/A	
	1.3	Landscape								2.0
		A.	Ground Cover				2			
		B.	Trees						N/A	
		C.	Irrigation System						N/A	
	1.4	Site Features/ Fixtures/ Furniture/ Signage								2.5
		A.	Landscape Features/ Play Equipment						N/A	
		B.	Exterior Lighting Fixtures				2			
		C.	Water Fixtures						N/A	
		D.	Exterior Site Furniture						N/A	
		E.	Site Utility			3				
	1.5	Stormwater Management								2.0
	N O T E S	1.2.C: Site pavement is deteriorated and crumbling in areas with cracks present. 1.3.A: Ground cover surrounding facilities is composed of unkempt tanbark piles. 1.4.B: Exterior lighting fixtures are faded and some bulbs or lenses are missing.								

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**2.5**
	2.1	Exterior Wall Finish								2.0
	2.2	Eaves and Fascias								3.0
	2.3	Doors/ Windows/ Louvers								1.5
		A.	Windows				2			
		B.	Louvers and Vents						N/A	
		C.	Exterior Doors & Hardware					1		
	2.4	Roofing								3.5
		A.	Roof Surface			3				
		B.	Roof Opening/ Skylight/ Penetrations						N/A	
		C.	Roof Equipment Curbing						N/A	
		D.	Leakage						N/A	
		E.	Ponding Water						N/A	
		F.	Roof Drainage		4					
		G.	Gutters / Downspouts						N/A	
		H.	Roof Vents						N/A	
	NOTES	2.3.A: Windows at office building are in very poor condition with deteriorated frames, tinting and sliding mechanism. 2.3.C: Exterior wood door at shops building show signs of rot and are out of plumb at bases. Metal doors to office facility are dented with rusted hinges and chipping paint.								
3	**Structure**									**3.0**
	3.1	Foundation/ Footing								2.0
	3.2	Columns								N/A
	3.3	Framing System								3.0
	3.4	Walls								3.0
	3.5	Lateral Force Resistance System								4.0
	3.6	Covered Walkway/Canopy								N/A
	3.7	Chimney								N/A
	NOTES	3.1: Cracking present around facilities and at concrete flooring of office facility. Wood floor in shops facility is deteriorating and shakes when walked on.								

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**2.0**
	4.1	Ceilings								1.7
		A.	Suspended Ceiling (ACT)					1		
		B.	Gypsum Board						N/A	
		C.	Plaster						N/A	
		D.	Wood					1		
		E.	Other						N/A	
		F.	Exposed			3				
	4.2	Flooring								1.5
		A.	Carpet						N/A	
		B.	Vinyl						N/A	
		C.	Tile						N/A	
		D.	Wood					1		
		E.	Concrete				2			
	4.3	Interior Wall/Partition Finishes								3.0
	4.4	Interior Doors								2.0
	4.5	Stairs Condition								N/A
		A.	Stairs/ Landing						N/A	
		B.	Handrails						N/A	
	4.6	Toilet Condition								N/A
		A.	Toilet Accessories						N/A	
		B.	Toilet Partitions						N/A	
		C.	Water Closets						N/A	
		D.	Urinals						N/A	
		E.	Lavatorie /Sinks						N/A	
		F.	Counter						N/A	
		G.	Shower Compartments						N/A	
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	NOTES	4.1.A: Suspended ceiling system in office building is missing tiles with grid out of plumb. 4.1.D: 2x4 boards making up wood ceiling system are out of plumb. Paint is missing from some boards. 4.2.E: Concrete flooring is cracked in places.								

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
Old Corp Yard - Overall										**2.6**
1	**Site/ Civil/ Landscape**									**2.4**
	1.1	Fences/ Walls/ Gates								3.3
		A.	Perimeter Fencing		4					
		B.	Equipment Fencing			3				
		C.	Landscape Walls/ Piers / Structures			3				
		D.	Gates			3				
	1.2	Paving								2.0
		A.	Sidewalks/ Walkways/ Crosswalks						N/A	
		B.	Curbing						N/A	
		C.	Driveways/ Parking Pavement				2			
		D.	Striping/ Marking/ Speed Bumps						N/A	
		E.	Patios						N/A	
	1.3	Landscape								2.0
		A.	Ground Cover				2			
		B.	Trees						N/A	
		C.	Irrigation System						N/A	
	1.4	Site Features/ Fixtures/ Furniture/ Signage								2.5
		A.	Landscape Features/ Play Equipment						N/A	
		B.	Exterior Lighting Fixtures				2			
		C.	Water Fixtures						N/A	
		D.	Exterior Site Furniture						N/A	
		E.	Site Utility			3				
	1.5	Stormwater Management								2.0
	N O T E S	1.2.C: Site pavement is deteriorated and crumbling in areas with cracks present. 1.3.A: Ground cover surrounding facilities is composed of unkempt tanbark piles. 1.4.B: Exterior lighting fixtures are faded and some bulbs or lenses are missing.								

System				Condition		
				Compliance	Non-compliance	N/A
6	**ADA Compliance**					
	6.1	Site				
		A.	Accessible Parking Spaces			N/A
		B.	Passenger Loading Zones			N/A
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space		NC	
		B.	Doors/ Doorways/Gates			N/A
		C.	Threshold			N/A
		D.	Ramps			N/A
		E.	Stairways			N/A
		F.	Handrails			N/A
		G.	Elevators			N/A
	6.3	Toilet				
		A.	Clearances/Accessible Stall			N/A
		B.	Toilet Accessories			N/A
		C.	Water Closets			N/A
		D.	Urinals			N/A
		E.	Lavatories/ Sinks			N/A
		F.	Counters			N/A
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry			N/A
		B.	Furniture, Fixtures & Equipment - FF&E			N/A
		C.	Signage			N/A
	NOTES	6.2.A: Provide appropriate clear floor space throughout facilities.				

Photo Documentation | Exterior Overall







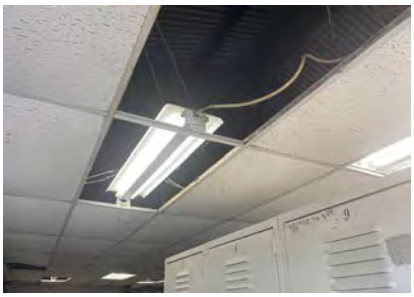
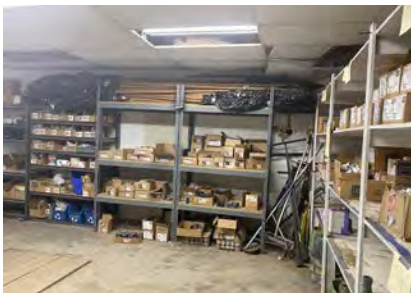






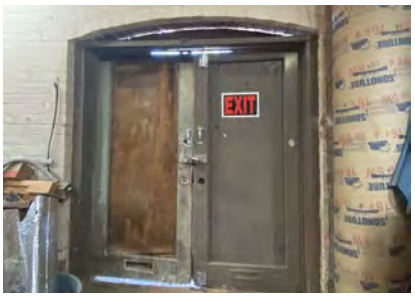

Photo Documentation | Interior Blow Ups

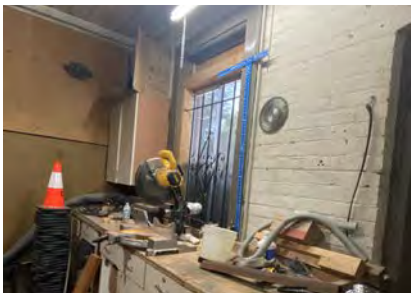
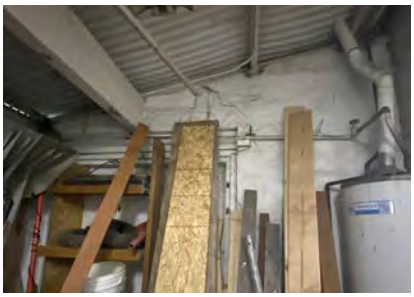








FACILITY CONDITION ASSESSMENT

BOYD SERVICE CENTER

BUILDING A - ADMINISTRATION



Condition Summary - Boyd Service Center

Building A - Administration

Overall Rating 3.5







Facility Condition

Site 3.4

Asphalt paving for the administration parking area is cracked in places especially around central drainage. Parking lot painting and staining in this area has been recently redone. Curbing around sidewalk and landscape elements contains light cracking and discoloration. Landscaping around the administration building is minimal but healthy.

Portable facilities near the Administration Building are surrounded by crushed rock with exposed dirt in areas. Rear fencing near portable trailers used for storage is dirty and determined in areas. Much debris is stored haphazardly on site near portable storage trailers.

Much of the site's surface is dirt and water ponding/mud accumulation is an issue during rainy months. Large LED lighting fixtures similar in specification to street lights provide illumination to a portion of the Boyd Service Center. Site striping and marking on paved areas is difficult to view because of both fading paint and dirt encroaching paved areas.

Exterior Envelope 3.5

The exterior envelope of the Administration Building at the Boyd Service Center is painted metal with a metal roof and finished interior. The siding of the Administration Building is in good condition. Siding at other buildings is in varied condition with some containing visibly faded paint and rust.

Steel ship containers used for storage for City of Tracy departments contain surfaces in various states of condition with some major rusting and deterioration occurring at some.

Painted wood siding and eaves of old Transit Facility located at Boyd site are flaking in places but roof structure is in visibly good condition. Painted metal siding of Building D is faded with scratching and siding attachment screws are rusted. Building B has been recently renovated with painted metal siding and a new metal roof.

Structure 3.3

Interior light fixtures and ceiling grid systems freely hung from the administration building ceiling may require additional non-structural seismic lateral and longitudinal support. Cracking exists at various concrete floors throughout facility buildings.

Interior 3.7

The interior of the administration building restroom facilities contain flooring, fixtures, wall tile and paint all in good condition. A minor issue in the main restroom is that the paper towel dispenser is separating from the painted wall surface and the paint surface is cracking at separation.

Concrete flooring of Building C is cracked and stained in places. Acoustic ceiling tile of this same building contains many stains from leaking plumbing. Storage inside Building D is well-arranged. Building E is used for vehicle maintenance and is slightly undersized for the City of Tracy with some equipment beyond its useful service life. Restroom flooring inside Building E is stained with tiles in various states of deterioration.

Condition Summary - Boyd Service Center

Building A - Administration

MEP Systems 3.4

Items are stored in front of fire alarm panels and circuit breakers in Electric/IT room. Some light scuffing is present at wood door surfaces to office suites.

A fueling station sits adjacent to the mechanizes shops and main Boyd entrance and is in operable condition. Pumps are out of date and fairly slow to operate with paint fading from pumps and fueling station. A GreenField NGV natural gas fueling system is also present on site. 800A main electrical service is located on-site.

ADA Compliance Needs Compliance

Braille is not provided at interior signage of administration building. Vehicle maintenance, Building E, contains a non-compliant second story loft area used for offices. Restroom in Building E is also non-compliant.

Recommendation Summary - Boyd Service Center

Building A - Administration







Recommendations

Site: It is recommended to repaint site striping and eventually repave site. Clear unnecessary items from site and rearrange storage areas.

Exterior Envelope: Paint exterior of shop and maintenance buildings that have faded or scratched paint surfaces.

Structure: Investigate cause of cracking and refinish flooring if desired. Install additional non-structural seismic supports to hanging lighting elements.

Interior: Refinish wall elements necessary in Administration Building restroom. Consider new shop space for vehicle maintenance.

MEP Systems: Investigate cause of leakage at acoustic ceiling tile at Building C interior. Remove items stored in front of fire alarm panels and circuit breakers.

ADA Compliance: Provide ADA compliant restroom location for vehicle maintenance shops as renovating restroom at vehicle maintenance shops is not feasible. Provide ADA compliant directional and room signage throughout Administration Building.

Impact of Recommended Works

Site: Site striping will cause major impact on the site and likely require vehicles and objects to be moved around during the process. Clearing unnecessary items from storage areas will require additional coordination with other City of Tracy Departments.

Exterior Envelope: Minor impact of recommended works to shop operations. Two weeks will be required to paint facilities.

Structure: Investigation as to cause of cracking may require an outside design consultant. Installation of non-structural seismic supports to hang lighting elements can be completed within a week with minimal impact to the facility.

Interior: Administration restrooms will likely be closed for one day for wall surface refinishing.

MEP Systems: Repair of issue causing leakage may require some impact to Building C operations.

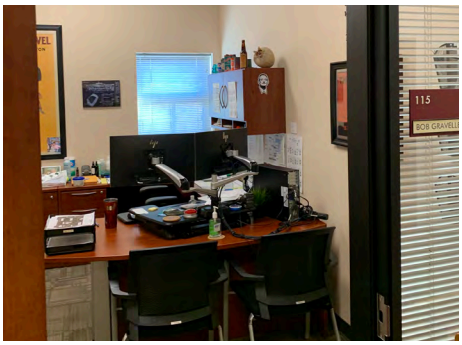
ADA Compliance: Providing ADA compliant signage will have a minimal impact on the facility. Renovating restroom at vehicle maintenance shops is not feasible.

Facility Description - Boyd Service Center

Building A - Administration


MEP


Exterior


Interior

Service Center Description

The Service Center complex contains several structures including the administration building, mechanical shops, welding shops, various sheds and storage structures. Although they were all built separately, this complex has been located in the City of Tracy since 1973 with major updates throughout the years including a Public Works administration facility built on the edge of the site in 2011. Parking and exterior storage throughout the compound provides for a variety of vehicles and other items to be stored and worked on.

The Administration Facility houses office space, conference space and restrooms for Public Works staff.

The Boyd Service Center houses offices and workspaces for city maintenance employees as well as lockers, shower rooms, break rooms and meeting areas.

Age

The Boyd Service Center is 49 years old and was constructed in 1973. The Administration Building is 11 years old and was constructed in 2011.

Use of Building

The building is used in the following ways:

- Provides maintenance services to vehicles and other mechanical systems
- Houses spaces for offices
- Provides storage for various items
- Provides a fueling station

			System	Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
	Boyd Services Center - Administration Bldg. - A									**3.5**
1	**Site/ Civil/ Landscape**									**3.4**
	1.1	Fences/ Walls/ Gates								3.0
		A.	Perimeter Fencing			3				
		B.	Equipment Fencing			3				
		C.	Landscape Walls/ Piers / Structures			3				
		D.	Gates			3				
	1.2	Paving								3.8
		A.	Sidewalks/ Walkways/ Crosswalks		4					
		B.	Curbing		4					
		C.	Driveways/ Parking Pavement			3				
		D.	Striping/ Marking/ Speed Bumps		4					
		E.	Patios						N/A	
	1.3	Landscape								3.0
		A.	Ground Cover			3				
		B.	Trees			3				
		C.	Irrigation System						N/A	
	1.4	Site Features/ Fixtures/ Furniture/ Signage								3.0
		A.	Landscape Features/ Play Equipment						N/A	
		B.	Exterior Lighting Fixtures				2			
		C.	Water Fixtures			3				
		D.	Exterior Site Furniture			3				
		E.	Site Utility		4					
	1.5	Stormwater Management								4.0
	N O T E S	1.4.B: Exterior lighting fixtures are lacking.								

	System			Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**3.5**
	2.1	Exterior Wall Finish								4.0
	2.2	Eaves and Fascias								3.0
	2.3	Doors/ Windows/ Louvers								3.3
		A.	Windows		4					
		B.	Louvers and Vents			3				
		C.	Exterior Doors & Hardware			3				
	2.4	Roofing								3.8
		A.	Roof Surface			3				
		B.	Roof Opening/ Skylight/ Penetrations		4					
		C.	Roof Equipment Curbing		4					
		D.	Leakage						N/A	
		E.	Ponding Water						N/A	
		F.	Roof Drainage		4					
		G.	Gutters / Downspouts		4					
		H.	Roof Vents		4					
	NOTES									
3	**Structure**									**3.3**
	3.1	Foundation/ Footing								4.0
	3.2	Columns								3.0
	3.3	Framing System								3.0
	3.4	Walls								3.0
	3.5	Lateral Force Resistance System								3.0
	3.6	Covered Walkway/Canopy								4.0
	3.7	Chimney								N/A
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**3.7**
	4.1	Ceilings								3.3
		A.	Suspended Ceiling (ACT)				2			
		B.	Gypsum Board						N/A	
		C.	Plaster		4					
		D.	Wood						N/A	
		E.	Other						N/A	
		F.	Exposed		4					
	4.2	Flooring								3.5
		A.	Carpet		4					
		B.	Vinyl			3				
		C.	Tile						N/A	
		D.	Wood						N/A	
		E.	Concrete						N/A	
	4.3	Interior Wall/Partition Finishes								4.0
	4.4	Interior Doors								4.0
	4.5	Stairs Condition								4.0
		A.	Stairs/ Landing						N/A	
		B.	Handrails		4					
	4.6	Toilet Condition								3.3
		A.	Toilet Accessories			3				
		B.	Toilet Partitions			3				
		C.	Water Closets		4					
		D.	Urinals			3				
		E.	Lavatory /Sinks		4					
		F.	Counter			3				
		G.	Shower Compartments						N/A	
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	N O T E S	4.1.A: Some acoustic ceiling tiles are missing from ceiling grid system.								

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**3.4**
	5.1	Mechanical Systems								3.6
		A.	HVAC		4					
		B.	Control System		4					
		C.	Chiller			3				
		D.	Cooling Towers						N/A	
		E.	Duct Work			3				
		F.	Ventilation\ Air Distribution		4					
		G.	Boilers						N/A	
	5.2	Electrical Systems								3.8
		A.	Transformer						N/A	
		B.	Switchgear		4					
		C.	Panelboards (Condition & Capacity)			3				
		D.	Devices (Switches & Receptacles)		4					
		E.	Interior Lighting Fixtures		4					
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System		4					
	5.3	Voice and Data Systems								3.0
	5.4	Plumbing Systems								3.0
		A.	Plumbing Fixtures			3				
		B.	Water Distribution System/ Pipes			3				
		C.	Water Heaters						N/A	
	5.5	Gas Distribution Systems								4.0
	5.6	Fire Suppression System								3.0
	N O T E S									

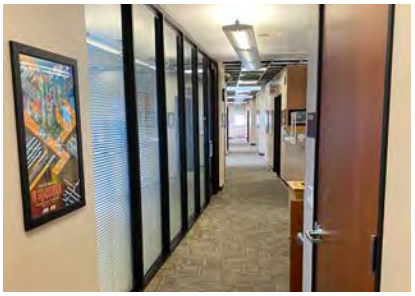
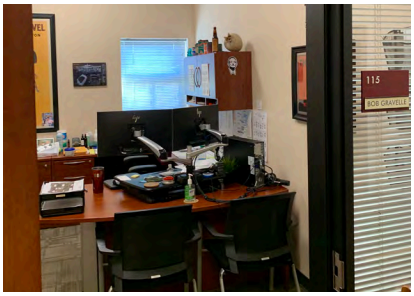
System				Condition		
				Compliance	Non-compliance	N/A
6	**ADA Compliance**					
	6.1	Site				
		A.	Accessible Parking Spaces	C		
		B.	Passenger Loading Zones	C		
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space	C		
		B.	Doors/ Doorways/Gates	C		
		C.	Threshold	C		
		D.	Ramps			N/A
		E.	Stairways			N/A
		F.	Handrails			N/A
		G.	Elevators			N/A
	6.3	Toilet				
		A.	Clearances/Accessible Stall	C		
		B.	Toilet Accessories		NC	
		C.	Water Closets	C		
		D.	Urinals	C		
		E.	Lavatories/ Sinks	C		
		F.	Counters	C		
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry		NC	
		B.	Furniture, Fixtures & Equipment - FF&E		NC	
		C.	Signage		NC	
	NOTES	6.3.A: Restroom in vehicle maintenance shops is non-compliant due to clearance issues but administration restrooms contain compliant clearances. 6.3.B: Toilet accessories are not fully compliant. 6.4.A: Provide knee and toe clearance under working surfaces and front desk counters. 6.4.B: Provide ADA compliant furniture, fixtures and equipment with accessible height and knee and toe clearances. 6.4.C: Provide ADA compliant service center administration building directional and restroom signage with tactile text and Braille.				

Photo Documentation | Interior Blow Ups







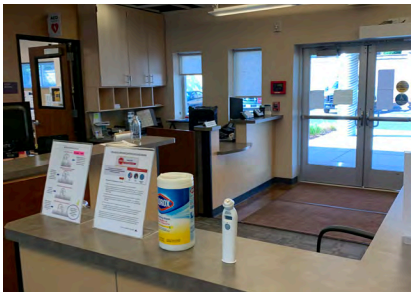





Photo Documentation | Exterior Overall














FACILITY CONDITION ASSESSMENT

BOYD SERVICE CENTER

BUILDING B - MAINTENANCE SHOPS (RENOVATED)

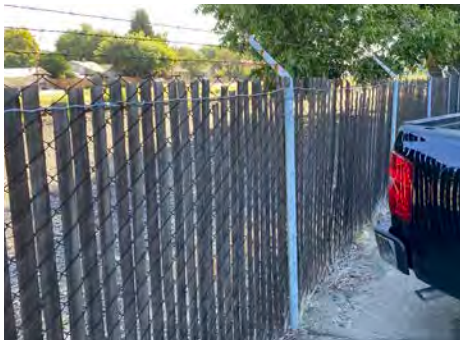


Condition Summary - Boyd Service Center

Building B - Maintenance Shops Facility (renovated)

Overall Rating **3.9**







Facility Condition

Site 3.9

Asphalt paving for the Building B parking area is cracked in multiple places throughout. Heavier cracking is present closer to the building. Painted striping for parking stalls is generally faded throughout the parking area. Staining is apparent at parking stalls closest to brown gate on site. In the same area, there is a small accumulation of leaves and dirt. Landscaping is minimal but appropriate for the site. Fencing around the perimeter is nearing the end of its service life in some places.

Exterior Envelope 4.1

The exterior envelope of Building B is in good condition overall. Siding throughout buildings is in good condition and is freshly painted.

Structure 4.0

No visible structural deficiencies were observed.

Interior N/A

The Interior of Building B was not observed.

MEP Systems 3.8

Mechanical and electrical systems are largely upgraded for Building B and should be maintained for adequate future use.

ADA Compliance Needs Compliance

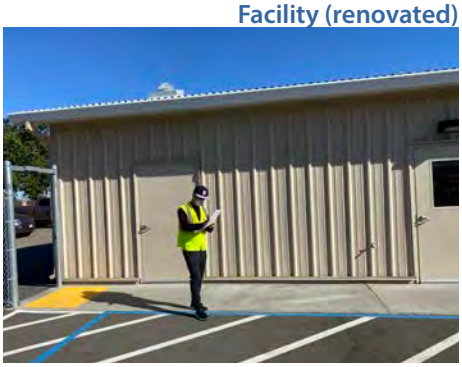
Braille is not provided at interior signage of maintenance shops. Areas of painted accessibility parking stalls are faded in parking lot and need to be repainted.

Recommendation Summary - Boyd Service Center

Building B - Maintenance Shops Facility (renovated)







Recommendations

Site: It is recommended to repaint site striping and eventually repave site.

Exterior Envelope: Maintain clean exterior envelope.

Structure: No structural recommendations.

Interior: Maintain interior as fit for Building B operations.

MEP Systems: Maintain new MEP systems at Building B.

ADA Compliance: Provide ADA compliant parking lot striping and interior building signage.

Impact of Recommended Works

Site: Site striping will cause major impact on the site and likely require vehicles and objects to be moved around during the process.

Exterior Envelope: No impact of recommended works.

Structure: No impact of recommended works.

Interior: Any interior modifications likely impact work efficiencies at affected areas

MEP Systems: No impact of recommended works.

ADA Compliance: Providing ADA compliant signage will have a minimal impact on the facility.

Facility Description - Boyd Service Center

Building B - Maintenance Shops Facility (renovated)


Exterior


Interior


MEP

Service Center Description

The Service Center complex contains several structures including the administration building, mechanical shops, welding shops, various sheds and storage structures. Although they were all built separately, this complex has been located in the City of Tracy since 1973 with major updates throughout the years including a Public Works administration facility built on the edge of the site in 2011. Parking and exterior storage throughout the compound provides for a variety of vehicles and other items to be stored and worked on.

The Boyd Service Center houses offices and workspaces for City maintenance employees as well as lockers, shower rooms, break rooms and meeting areas.

Building B was recently renovated and acts as maintenance shops at the Boyd Service Center.

Age

The Boyd Service Center is 49 years old and was constructed in 1973.

Use of Building

The building is used in the following ways:

- Provides maintenance services to vehicles and other mechanical systems
- Houses spaces for offices
- Provides storage for various items
- Provides a fueling station

			System	Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
	Boyd Services Center - Maintenance Shops (renovated) - B									**3.9**
1	**Site/ Civil/ Landscape**									**3.9**
	1.1	Fences/ Walls/ Gates								4.0
		A.	Perimeter Fencing			3				
		B.	Equipment Fencing	5						
		C.	Landscape Walls/ Piers / Structures			3				
		D.	Gates	5						
	1.2	Paving								4.5
		A.	Sidewalks/ Walkways/ Crosswalks	5						
		B.	Curbing		4					
		C.	Driveways/ Parking Pavement		4					
		D.	Striping/ Marking/ Speed Bumps	5						
		E.	Patios						N/A	
	1.3	Landscape								4.0
		A.	Ground Cover						N/A	
		B.	Trees		4					
		C.	Irrigation System		4					
	1.4	Site Features/ Fixtures/ Furniture/ Signage								3.2
		A.	Landscape Features/ Play Equipment			3				
		B.	Exterior Lighting Fixtures			3				
		C.	Water Fixtures			3				
		D.	Exterior Site Furniture			3				
		E.	Site Utility		4					
	1.5	Stormwater Management								4.0
	N O T E S									

	System			Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**4.1**
	2.1	Exterior Wall Finish								4.0
	2.2	Eaves and Fascias								3.0
	2.3	Doors/ Windows/ Louvers								5.0
		A.	Windows	5						
		B.	Louvers and Vents	5						
		C.	Exterior Doors & Hardware	5						
	2.4	Roofing								4.5
		A.	Roof Surface	5						
		B.	Roof Opening/ Skylight/ Penetrations						N/A	
		C.	Roof Equipment Curbing						N/A	
		D.	Leakage						N/A	
		E.	Ponding Water						N/A	
		F.	Roof Drainage		4					
		G.	Gutters / Downspouts		4					
		H.	Roof Vents	5						
	NOTES									
3	**Structure**									**4.0**
	3.1	Foundation/ Footing								4.0
	3.2	Columns								4.0
	3.3	Framing System								4.0
	3.4	Walls								4.0
	3.5	Lateral Force Resistance System								4.0
	3.6	Covered Walkway/Canopy								4.0
	3.7	Chimney								N/A
	NOTES									

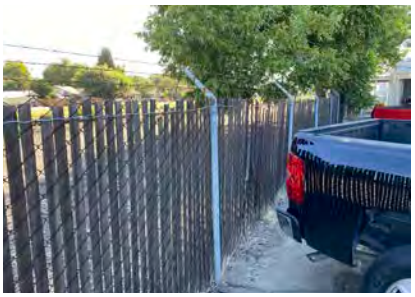
System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**3.8**
	4.1	Ceilings								4.0
		A.	Suspended Ceiling (ACT)		4					
		B.	Gypsum Board						N/A	
		C.	Plaster		4					
		D.	Wood						N/A	
		E.	Other						N/A	
		F.	Exposed		4					
	4.2	Flooring								4.0
		A.	Carpet		4					
		B.	Vinyl						N/A	
		C.	Tile		4					
		D.	Wood						N/A	
		E.	Concrete		4					
	4.3	Interior Wall/Partition Finishes								4.0
	4.4	Interior Doors								3.0
	4.5	Stairs Condition								N/A
		A.	Stairs/ Landing						N/A	
		B.	Handrails						N/A	
	4.6	Toilet Condition								4.0
		A.	Toilet Accessories		4					
		B.	Toilet Partitions		4					
		C.	Water Closets		4					
		D.	Urinals		4					
		E.	Lavatorie /Sinks		4					
		F.	Counter		4					
		G.	Shower Compartments						N/A	
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	N O T E S									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**3.8**
	5.1	Mechanical Systems								4.0
		A.	HVAC		4					
		B.	Control System		4					
		C.	Chiller		4					
		D.	Cooling Towers						N/A	
		E.	Duct Work		4					
		F.	Ventilation\ Air Distribution		4					
		G.	Boilers						N/A	
	5.2	Electrical Systems								4.0
		A.	Transformer						N/A	
		B.	Switchgear						N/A	
		C.	Panelboards (Condition & Capacity)						N/A	
		D.	Devices (Switches & Receptacles)		4					
		E.	Interior Lighting Fixtures		4					
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System		4					
	5.3	Voice and Data Systems								3.0
	5.4	Plumbing Systems								4.0
		A.	Plumbing Fixtures		4					
		B.	Water Distribution System/ Pipes		4					
		C.	Water Heaters						N/A	
	5.5	Gas Distribution Systems								4.0
	5.6	Fire Suppression System								4.0
	N O T E S									

System				Condition		
				Compliance	Non-compliance	N/A
6	**ADA Compliance**					
	6.1	Site				
		A.	Accessible Parking Spaces	C		
		B.	Passenger Loading Zones	C		
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space	C		
		B.	Doors/ Doorways/Gates	C		
		C.	Threshold	C		
		D.	Ramps			N/A
		E.	Stairways			N/A
		F.	Handrails			N/A
		G.	Elevators			N/A
	6.3	Toilet				
		A.	Clearances/Accessible Stall	C		
		B.	Toilet Accessories		NC	
		C.	Water Closets	C		
		D.	Urinals	C		
		E.	Lavatories/ Sinks	C		
		F.	Counters	C		
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry		NC	
		B.	Furniture, Fixtures & Equipment - FF&E		NC	
		C.	Signage		NC	
	NOTES	6.3.B: Toilet accessories are not fully compliant. 6.4.A: Provide knee and toe clearance under working surfaces and front desk counters. 6.4.B: Provide ADA compliant furniture, fixtures and equipment with accessible height and knee and toe clearances. 6.4.C: Provide ADA compliant shops and restroom signage with tactile text and Braille.				

Photo Documentation | Exterior Overall












FACILITY CONDITION ASSESSMENT

BOYD SERVICE CENTER

BUILDING C - MAINTENANCE SHOPS (UNRENOVATED)



Condition Summary - Boyd Service Center

Building C - Maintenance Shops Facility (unrenovated)

Overall Rating **2.9**







Facility Condition

Site 3.0

Asphalt paving has signs of cracking throughout the parking lot. Asphalt is discolored at garage door openings of the building. Striping is fading at parking stalls and other locations near the building. Paving is slightly uneven at the side of the building in two locations. Alley behind the maintenance shop is unpaved and is loosely used as an outdoor storage space. Objects and other debris are scattered throughout the area. The space is not easily accessible and could benefit from a repavement.

Exterior Envelope 2.8

In general, exterior envelopes of buildings at Boyd Service Center are painted metal buildings with metal roofs and interior steel structures. Siding of the maintenance shops is in fair condition and is fading slightly in some areas and slightly discolored in other areas. Door signage is significantly faded and must be redone. Doors are also discolored from dirt and dust. There is a decent amount of lighting present on the exterior side of the building but fixtures are outdated.

Structure 3.0

Interior light fixtures and ceiling grid systems freely hung from the maintenance shops ceiling may require additional non-structural seismic lateral and longitudinal support. Cracking exists at various locations of the concrete floor.

Interior 2.8

Concrete flooring of Building C is cracked and stained in places. Acoustic ceiling tile of this same building contains many stains from leaking plumbing. Some acoustic ceiling tiles have minor cracks, visible in the corner tile by the garage door. Tube light fixtures provide an appropriate amount of light into the interior spaces.

MEP Systems 2.9

Air vents and air conditioning units are located on the walls in the storage room, office space, and break room.

ADA Compliance Needs Compliance

Braille is not provided at exterior signage of maintenance shop. Storage space doesn't comply with ADA requirements regarding floor space.

Recommendation Summary - Boyd Service Center

Building C - Maintenance Shops Facility (unrenovated)



MEP



Exterior



Storage

Recommendations

Site: It is recommended to repaint site striping and eventually repave site. Clear unnecessary items from site and rearrange storage areas.

Exterior Envelope: Paint exterior of shop and maintenance buildings that have faded or scratched paint surfaces.

Structure: Investigate cause of cracking and refinish flooring if desired. Install additional non-structural seismic supports to hanging lighting elements.

Interior: Refinish wall elements necessary in administration building restroom. Consider new shop space for vehicle maintenance.

MEP Systems: Investigate cause of leakage at acoustic ceiling tile at Building C interior. Remove items stored in front of fire alarm panels and circuit breakers.

ADA Compliance: Provide ADA compliant restroom location for vehicle maintenance shops as renovating restroom at vehicle maintenance shops is not feasible. Provide ADA compliant directional and room signage throughout administration building.

Impact of Recommended Works

Site: Site pavement striping will cause major impact on the site and likely require vehicles and objects to be moved around during the process. Clearing unnecessary items from storage areas will require additional coordination with other City of Tracy Departments.

Exterior Envelope: Minor impact of recommended works to shop operations. Two weeks will be required to paint facilities.

Structure: Investigation as to cause of cracking may require an outside consultant. Installation of non-structural seismic supports to hung lighting elements can be completed within a week with minimal impact to the facility.

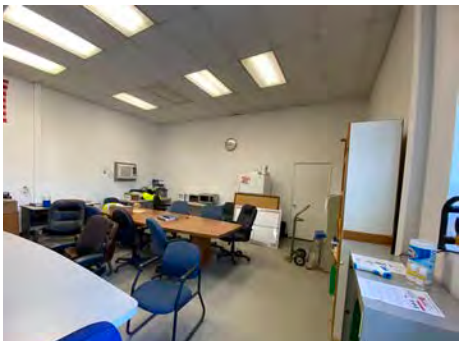
Interior: Administration restrooms will likely be closed for one day for wall surface refinishing.

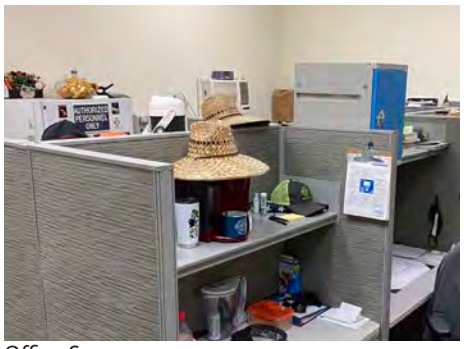
MEP Systems: Repair of issue causing leakage may require some impact to Building C operations.

ADA Compliance: Providing ADA compliant signage will have a minimal impact on the facility. Renovating restroom at vehicle maintenance shops is not feasible.

Facility Description - Boyd Service Center

Building C - Maintenance Shops Facility (unrenovated)


Interior



Office Space


Storage

Service Center Description

The Service Center complex contains several structures including the administration building, mechanical shops, welding shops, various sheds and storage structures. Although they were all built separately, this complex has been located in the City of Tracy since 1973 with major updates throughout the years including a Public Works administration facility built on the edge of the site in 2011. Parking and exterior storage throughout the compound provides for a variety of vehicles and other items to be stored and worked on.

The Boyd Service Center houses offices and workspaces for city maintenance employees as well as lockers, shower rooms, break rooms and meeting areas.

Building C is similar to Building B in that it is used as a maintenance shop for equipment, signage and other items. Building C remains unrenovated.

Age

The Boyd Service Center is 49 years old and was constructed in 1973.

Use of Building

The building is used in the following ways:

- Provides maintenance services to vehicles and other mechanical systems
- Houses spaces for offices
- Provides storage for various items
- Provides a fueling station

			System	Condition						Rank
				Excellent	Good	Fair	Poor	Critical	N/A	
				5	4	3	2	1		
	Boyd Services Center - Maintenance Shops (unrenovated) - C									**2.9**
1	**Site/ Civil/ Landscape**									**3.0**
	1.1	Fences/ Walls/ Gates								2.5
		A.	Perimeter Fencing			3				
		B.	Equipment Fencing				2			
		C.	Landscape Walls/ Piers / Structures							N/A
		D.	Gates							N/A
	1.2	Paving								1.5
		A.	Sidewalks/ Walkways/ Crosswalks							N/A
		B.	Curbing							N/A
		C.	Driveways/ Parking Pavement				2			
		D.	Striping/ Marking/ Speed Bumps					1		
		E.	Patios						N/A	
	1.3	Landscape								4.0
		A.	Ground Cover						N/A	
		B.	Trees		4					
		C.	Irrigation System		4					
	1.4	Site Features/ Fixtures/ Furniture/ Signage								3.0
		A.	Landscape Features/ Play Equipment						N/A	
		B.	Exterior Lighting Fixtures				2			
		C.	Water Fixtures			3				
		D.	Exterior Site Furniture						N/A	
		E.	Site Utility		4					
	1.5	Stormwater Management								4.0
	N O T E S	1.1.B: Equipment housings in the rear area of Building C adjacent to site fence require maintenance. 1.2.C: Pavement surrounding Building C is deteriorating at the surface and cracked. 1.2.D: Striping and pavement markings surrounding Building C are almost fully deteriorated. 1.4.B: Exterior lighting fixtures are outdated with yellowed lenses, and lacking in quantity.									

			System	Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**2.8**
	2.1		Exterior Wall Finish							2.0
	2.2		Eaves and Fascias							N/A
	2.3		Doors/ Windows/ Louvers							2.7
		A.	Windows			3				
		B.	Louvers and Vents			3				
		C.	Exterior Doors & Hardware				2			
	2.4		Roofing							3.6
		A.	Roof Surface			3				
		B.	Roof Opening/ Skylight/ Penetrations						N/A	
		C.	Roof Equipment Curbing		4					
		D.	Leakage						N/A	
		E.	Ponding Water						N/A	
		F.	Roof Drainage		4					
		G.	Gutters / Downspouts			3				
		H.	Roof Vents		4					
	N O T E S		2.1: Exterior walls contain faded paint and rusted screws. 2.3.C: Exterior doors contain chipping paint around handles as well as deteriorated hinges.							
3	**Structure**									**3.0**
	3.1		Foundation/ Footing							3.0
	3.2		Columns							3.0
	3.3		Framing System							3.0
	3.4		Walls							3.0
	3.5		Lateral Force Resistance System							3.0
	3.6		Covered Walkway/Canopy							N/A
	3.7		Chimney							N/A
	N O T E S									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**2.8**
	4.1	Ceilings								2.0
		A.	Suspended Ceiling (ACT)				2			
		B.	Gypsum Board						N/A	
		C.	Plaster						N/A	
		D.	Wood						N/A	
		E.	Other						N/A	
		F.	Exposed							
	4.2	Flooring								2.0
		A.	Carpet						N/A	
		B.	Vinyl						N/A	
		C.	Tile						N/A	
		D.	Wood						N/A	
		E.	Concrete				2			
	4.3	Interior Wall/Partition Finishes								4.0
	4.4	Interior Doors								3.0
	4.5	Stairs Condition								N/A
		A.	Stairs/ Landing						N/A	
		B.	Handrails						N/A	
	4.6	Toilet Condition								N/A
		A.	Toilet Accessories						N/A	
		B.	Toilet Partitions						N/A	
		C.	Water Closets						N/A	
		D.	Urinals						N/A	
		E.	Lavatorie /Sinks						N/A	
		F.	Counter						N/A	
		G.	Shower Compartments						N/A	
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A

N O T E S

4.1.A: Suspended acoustic ceiling tile is stained in many places in Building C.

4.2.E: Concrete flooring is stained and cracked.

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**2.9**
	5.1	Mechanical Systems								2.5
		A.	HVAC				2			
		B.	Control System						N/A	
		C.	Chiller						N/A	
		D.	Cooling Towers						N/A	
		E.	Duct Work						N/A	
		F.	Ventilation\ Air Distribution			3				
		G.	Boilers						N/A	
	5.2	Electrical Systems								3.0
		A.	Transformer						N/A	
		B.	Switchgear						N/A	
		C.	Panelboards (Condition & Capacity)			3				
		D.	Devices (Switches & Receptacles)			3				
		E.	Interior Lighting Fixtures			3				
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System						N/A	
	5.3	Voice and Data Systems								3.0
	5.4	Plumbing Systems								3.0
		A.	Plumbing Fixtures			3				
		B.	Water Distribution System/ Pipes			3				
		C.	Water Heaters						N/A	
	5.5	Gas Distribution Systems								N/A
	5.6	Fire Suppression System								N/A
	NOTES	5.1.A: Air Conditioning is provided by wall or window mounted units.								

System				Condition		
				Compliance	Non-compliance	N/A
6	**ADA Compliance**					
	6.1	Site				
		A.	Accessible Parking Spaces			N/A
		B.	Passenger Loading Zones			N/A
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space		NC	
		B.	Doors/ Doorways/Gates	C		
		C.	Threshold	C		
		D.	Ramps			N/A
		E.	Stairways			N/A
		F.	Handrails			N/A
		G.	Elevators			N/A
	6.3	Toilet				
		A.	Clearances/Accessible Stall			N/A
		B.	Toilet Accessories			N/A
		C.	Water Closets			N/A
		D.	Urinals			N/A
		E.	Lavatories/ Sinks			N/A
		F.	Counters			N/A
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry		NC	
		B.	Furniture, Fixtures & Equipment - FF&E		NC	
		C.	Signage		NC	
	NOTES	6.2.A: Provide clear floor space in some shop areas. 6.4.A: Provide knee and toe clearance under working surfaces and front desk counters. 6.4.B: Provide ADA compliant furniture, fixtures and equipment with accessible height and knee and toe clearances. 6.4.C: Provide ADA compliant service center administration building directional and restroom signage with tactile text and Braille.				

Photo Documentation | Exterior Overall

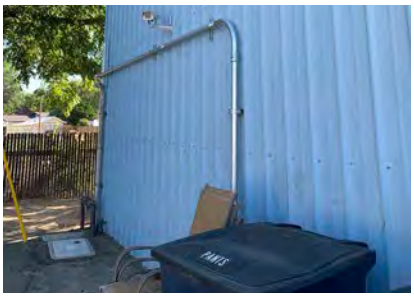





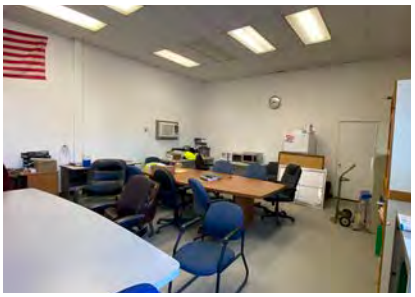
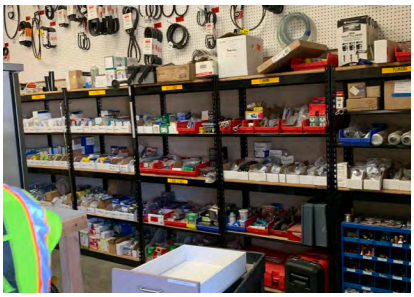


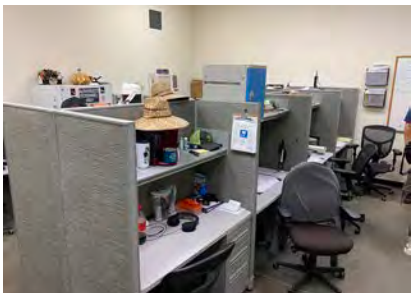
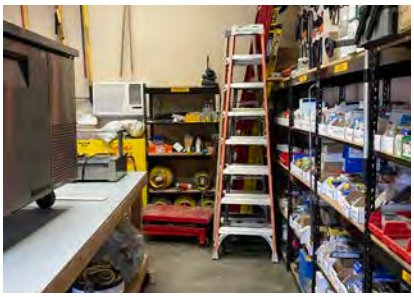


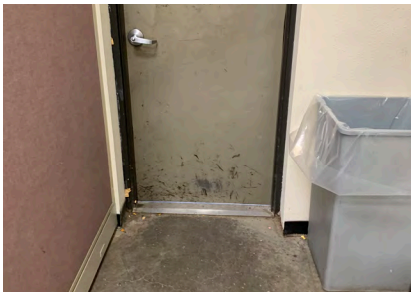
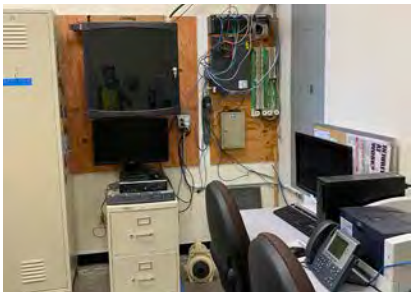


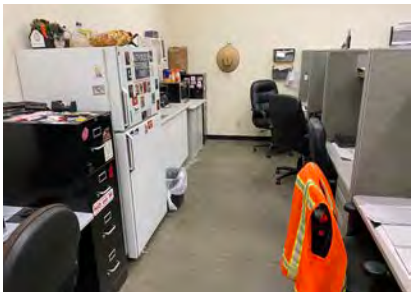



Photo Documentation | Interior Blow Ups




FACILITY CONDITION ASSESSMENT

BOYD SERVICE CENTER

BUILDING D - WAREHOUSE BUILDING



Condition Summary - Boyd Service Center

Building D - Warehouse Building

Overall Rating 3.5







Facility Condition

Site 3.6

Asphalt paving around the Warehouse Building is cracked in places. No landscaping exists around this building. Site lighting is lacking at this area.

Exterior Envelope 3.5

Exterior siding and doors at Building D contain faded paint and rusted screws. Roofing is in relatively good condition with no signs of rust but drainage would benefit from the addition of gutters and downspouts. Exterior lighting fixtures are present only above entrance to storage warehouse.

Structure 3.3

The structure of Building D is in visibly good condition.

Interior 3.2

Entrance door at interior is very scuffed and dented especially at interior base. The remainder of the interior is generally well-organized and in fair condition.

MEP Systems 3.4

No major MEP deficiencies were observed.

ADA Compliance Needs Compliance

Interior stairwells at the Warehouse Building are not compliant. Other elements of the interior are not compliant.

Recommendation Summary - Boyd Service Center

Building D - Warehouse Building


Exterior


Interior


Interior

Recommendations

Site: It is recommended to repaint site striping and eventually repave site.

Exterior Envelope: Add new LED exterior lighting fixtures and wiring.

Structure: No structural recommendations.

Interior: Replace entrance door.

MEP Systems: No MEP recommendations.

ADA Compliance: Provide ADA compliant interior stair handrails.

Impact of Recommended Works

Site: Site striping will cause major impact on the site and likely require vehicles and objects to be moved around during the process.

Exterior Envelope: No impact of recommended works.

Structure: No impact of recommended works.

Interior: No impact of recommended works.

MEP Systems: No impact of recommended works.

ADA Compliance: Providing ADA compliant stairs will have an impact on the facility and may require reorganization of stored items during reconfiguration of stairs.

Facility Description - Boyd Service Center

Building D - Warehouse Buildings


MEP


Interior



Storage

Service Center Description

The Service Center complex contains several structures including the administration building, mechanical shops, welding shops, various sheds and storage structures. Although they were all built separately, this complex has been located in the City of Tracy since 1973 with major updates throughout the years including a Public Works administration facility built on the edge of the site in 2011. Parking and exterior storage throughout the compound provides for a variety of vehicles and other items to be stored and worked on.

The Boyd Service Center houses offices and workspaces for city maintenance employees as well as lockers, shower rooms, break rooms and meeting areas.

Building D is used as a large storage warehouse building for the Boyd Service Center.

Age

The Boyd Service Center is 49 years old and was constructed in 1973.

Use of Building

The building is used in the following ways:

- Provides maintenance services to vehicles and other mechanical systems
- Houses spaces for offices
- Provides storage for various items
- Provides a fueling station

			System	Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
	Boyd Services Center - Warehouse Buildings - D									**3.1**
1	**Site/ Civil/ Landscape**									**2.7**
	1.1		Fences/ Walls/ Gates							N/A
		A.	Perimeter Fencing						N/A	
		B.	Equipment Fencing						N/A	
		C.	Landscape Walls/ Piers / Structures						N/A	
		D.	Gates						N/A	
	1.2		Paving							2.0
		A.	Sidewalks/ Walkways/ Crosswalks						N/A	
		B.	Curbing						N/A	
		C.	Driveways/ Parking Pavement				2			
		D.	Striping/ Marking/ Speed Bumps				2			
		E.	Patios						N/A	
	1.3		Landscape							N/A
		A.	Ground Cover						N/A	
		B.	Trees						N/A	
		C.	Irrigation System						N/A	
	1.4		Site Features/ Fixtures/ Furniture/ Signage							3.0
		A.	Landscape Features/ Play Equipment						N/A	
		B.	Exterior Lighting Fixtures				2			
		C.	Water Fixtures						N/A	
		D.	Exterior Site Furniture						N/A	
		E.	Site Utility		4					
	1.5		Stormwater Management							3.0
	N O T E S		1.2.C: Pavement surrounding the storage warehouse is deteriorating and cracked in places. 1.2.D: Vac-Con parking only area requires re-striping. 1.3.A-C: No landscaping exists directly adjacent to the storage warehouse. 1.4.B: Exterior lighting fixtures are present only above entrance to storage warehouse.							

	System			Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**2.6**
	2.1	Exterior Wall Finish								2.0
	2.2	Eaves and Fascias								N/A
	2.3	Doors/ Windows/ Louvers								2.5
		A.	Windows							N/A
		B.	Louvers and Vents			3				
		C.	Exterior Doors & Hardware				2			
	2.4	Roofing								3.3
		A.	Roof Surface			3				
		B.	Roof Opening/ Skylight/ Penetrations		4					
		C.	Roof Equipment Curbing						N/A	
		D.	Leakage						N/A	
		E.	Ponding Water						N/A	
		F.	Roof Drainage				2			
		G.	Gutters / Downspouts						N/A	
		H.	Roof Vents		4					
	NOTES	2.1: Exterior walls contain faded paint and rusted screws. 2.3.C: Exterior entrance door is very scuffed and dented especially at base. 2.4.F: Roof drainage would benefit from the addition of gutters and downspouts.								
3	**Structure**									**3.6**
	3.1	Foundation/ Footing								4.0
	3.2	Columns								3.0
	3.3	Framing System								4.0
	3.4	Walls								3.0
	3.5	Lateral Force Resistance System								4.0
	3.6	Covered Walkway/Canopy								N/A
	3.7	Chimney								N/A
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**3.0**
	4.1	Ceilings								3.0
		A.	Suspended Ceiling (ACT)						N/A	
		B.	Gypsum Board						N/A	
		C.	Plaster						N/A	
		D.	Wood						N/A	
		E.	Other						N/A	
		F.	Exposed			3				
	4.2	Flooring								3.0
		A.	Carpet						N/A	
		B.	Vinyl						N/A	
		C.	Tile						N/A	
		D.	Wood						N/A	
		E.	Concrete			3				
	4.3	Interior Wall/Partition Finishes								4.0
	4.4	Interior Doors								2.0
	4.5	Stairs Condition								3.0
		A.	Stairs/ Landing			3				
		B.	Handrails			3				
	4.6	Toilet Condition								N/A
		A.	Toilet Accessories						N/A	
		B.	Toilet Partitions						N/A	
		C.	Water Closets						N/A	
		D.	Urinals						N/A	
		E.	Lavatorie /Sinks						N/A	
		F.	Counter						N/A	
		G.	Shower Compartments						N/A	
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	N O T E S	4.4: Entrance door is very scuffed and dented especially at interior base.								

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**3.4**
	5.1	Mechanical Systems								4.0
		A.	HVAC						N/A	
		B.	Control System						N/A	
		C.	Chiller						N/A	
		D.	Cooling Towers						N/A	
		E.	Duct Work						N/A	
		F.	Ventilation\ Air Distribution		4					
		G.	Boilers						N/A	
	5.2	Electrical Systems								3.7
		A.	Transformer						N/A	
		B.	Switchgear						N/A	
		C.	Panelboards (Condition & Capacity)			3				
		D.	Devices (Switches & Receptacles)		4					
		E.	Interior Lighting Fixtures		4					
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System						N/A	
	5.3	Voice and Data Systems								3.0
	5.4	Plumbing Systems								3.0
		A.	Plumbing Fixtures			3				
		B.	Water Distribution System/ Pipes			3				
		C.	Water Heaters						N/A	
	5.5	Gas Distribution Systems								N/A
	5.6	Fire Suppression System								N/A
	NOTES									

System				Condition		
				Compliance	Non-compliance	N/A
6	ADA Compliance					
	6.1	Site				
		A.	Accessible Parking Spaces	C		
		B.	Passenger Loading Zones	C		
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space	C		
		B.	Doors/ Doorways/Gates	C		
		C.	Threshold	C		
		D.	Ramps			N/A
		E.	Stairways		NC	
		F.	Handrails		NC	
		G.	Elevators			N/A
	6.3	Toilet				
		A.	Clearances/Accessible Stall			N/A
		B.	Toilet Accessories			N/A
		C.	Water Closets			N/A
		D.	Urinals			N/A
		E.	Lavatories/ Sinks			N/A
		F.	Counters			N/A
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry			N/A
		B.	Furniture, Fixtures & Equipment - FF&E		NC	
		C.	Signage		NC	
	NOTES	6.2.E-F: Stairways and associated handrails at shop storage areas is not compliant. 6.4.B: Provide ADA compliant furniture, fixtures and equipment with accessible height and knee and toe clearances. 6.4.C: Provide ADA compliant storage warehouse directional signage with tactile text and Braille.				

Photo Documentation | Exterior Overall



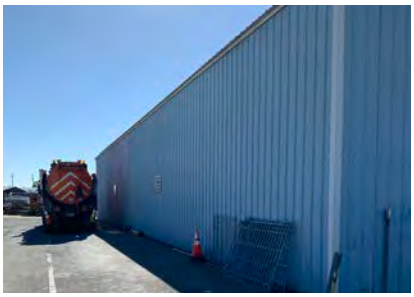






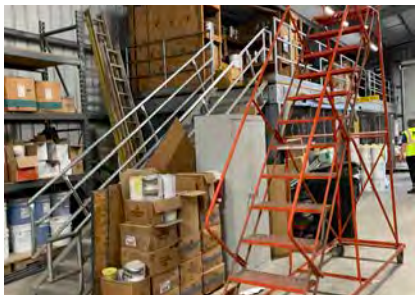
Photo Documentation | Interior Blow Ups

























FACILITY CONDITION ASSESSMENT

BOYD SERVICE CENTER

BUILDING E - FLEET SHOP



Condition Summary - Boyd Service Center

Building E - Fleet Shop

Overall Rating 3.5







Facility Condition

Site 3.6

Asphalt paving around the Vehicle Fleet Shop is cracked in places. No landscaping exists around this building. Site lighting is lacking at this area.

Exterior Envelope 3.5

Exterior siding of Building E contains faded paint and rusted bolts in areas. Overhead vehicle doors require replacement. Roofing is in fair condition. Exterior lighting is lacking

Structure 3.3

Exterior overhang area contains rusted structural elements.

Interior 3.4

The interior of Building E contains concrete flooring in fair condition with signs of wear and deterioration. Interior equipment related to vehicle maintenance is generally in good condition but undersized. Restroom flooring inside Building E is stained with tiles in various states of deterioration.

MEP Systems 3.4

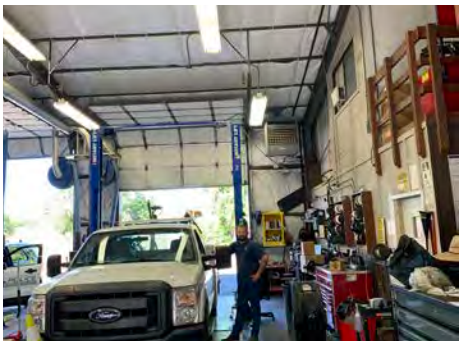
Exhaust and ventilation system requires improvement for operations. Interior lighting is lacking in places.

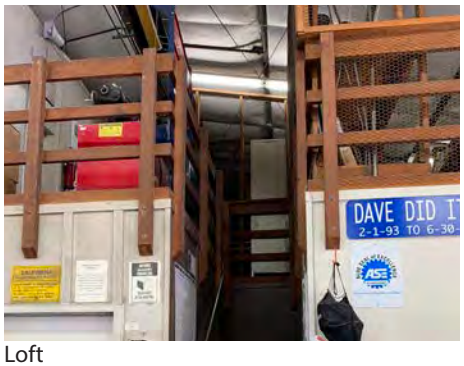
ADA Compliance Needs Compliance

Building E contains a non-compliant second story loft area used for offices. Restroom in Building E is also non-compliant.

Recommendation Summary - Boyd Service Center

Building E - Fleet Shop


Interior



Loft


Ceiling

Recommendations

Site: It is recommended to repaint site striping and eventually repave site. Provide additional landscaping at rear of fleet shop.

Exterior Envelope: Add new LED exterior lighting fixtures and wiring. Replace exterior roll up doors and man entrance door.

Structure: Replace rusted structural components of exterior exposed bay.

Interior: Repair concrete flooring and replace interior stair system with ADA compliant second story access.

MEP Systems: Replace rooftop mounted exhaust vents. Design new exhaust and ventilation system for building.

ADA Compliance: Provide ADA compliant restroom and interior stair handrails.

Impact of Recommended Works

Site: Site striping will cause major impact on the site and likely require vehicles and objects to be moved around during the process. Landscaping should be considered during CIP expansion project.

Exterior Envelope: Vehicles may not be able to access maintenance bay during day of door installation.

Structure: Exterior exposed bay may be required to be completely disassembled and reconstructed with new structural components.

Interior: Any interior modifications will impact vehicle maintenance work for an estimated 3 months. A temporary maintenance location may be required.

MEP Systems: Modifications to MEP systems will require similar impact as interior modifications.

ADA Compliance: Providing ADA compliant restroom will have a significant impact on the facility and may not be possible without expansion.

Facility Description - Boyd Service Center

Building E - Fleet Shop


Overhang


Interior


Ceiling System

Service Center Description

The Service Center complex contains several structures including the administration building, mechanical shops, welding shops, various sheds and storage structures. Although they were all built separately, this complex has been located in the City of Tracy since 1973 with major updates throughout the years including a Public Works administration facility built on the edge of the site in 2011. Parking and exterior storage throughout the compound provides for a variety of vehicles and other items to be stored and worked on.

The Boyd Service Center houses offices and workspaces for city maintenance employees as well as lockers, shower rooms, break rooms and meeting areas.

Building E acts as a Vehicle Fleet Shop where City of Tracy vehicles are maintained and serviced.

Age

The Boyd Service Center is 49 years old and was constructed in 1973.

Use of Building

The building is used in the following ways:

- Provides maintenance services to vehicles and other mechanical systems
- Houses spaces for offices
- Provides storage for various items
- Provides a fueling station

			System	Condition						Rank
				Excellent	Good	Fair	Poor	Critical	N/A	
				5	4	3	2	1		
	Boyd Services Center - Fleet Shop - E									**2.7**
1	**Site/ Civil/ Landscape**									**2.6**
	1.1		Fences/ Walls/ Gates							2.5
		A.	Perimeter Fencing			3				
		B.	Equipment Fencing				2			
		C.	Landscape Walls/ Piers / Structures						N/A	
		D.	Gates						N/A	
	1.2		Paving							2.0
		A.	Sidewalks/ Walkways/ Crosswalks						N/A	
		B.	Curbing						N/A	
		C.	Driveways/ Parking Pavement				2			
		D.	Striping/ Marking/ Speed Bumps				2			
		E.	Patios						N/A	
	1.3		Landscape							2.7
		A.	Ground Cover				2			
		B.	Trees			3				
		C.	Irrigation System			3				
	1.4		Site Features/ Fixtures/ Furniture/ Signage							2.7
		A.	Landscape Features/ Play Equipment						N/A	
		B.	Exterior Lighting Fixtures					1		
		C.	Water Fixtures			3				
		D.	Exterior Site Furniture						N/A	
		E.	Site Utility		4					
	1.5		Stormwater Management							3.0

N O T E S

1.1.B: Equipment structure contains rusted elements.
1.2.C: Pavement surrounding the vehicle maintenance shop is deteriorating and cracked in places.
1.2.D: Markings surrounding the vehicle maintenance shop require re-striping.
1.3.A: Ground cover behind the shop adjacent to site fence is lacking.
1.4.B: Exterior lighting fixtures are lacking at vehicle maintenance shop.

			System	Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**2.8**
	2.1		Exterior Wall Finish							3.0
	2.2		Eaves and Fascias							N/A
	2.3		Doors/ Windows/ Louvers							2.5
		A.	Windows						N/A	
		B.	Louvers and Vents			3				
		C.	Exterior Doors & Hardware				2			
	2.4		Roofing							3.0
		A.	Roof Surface			3				
		B.	Roof Opening/ Skylight/ Penetrations						N/A	
		C.	Roof Equipment Curbing						N/A	
		D.	Leakage						N/A	
		E.	Ponding Water						N/A	
		F.	Roof Drainage		4					
		G.	Gutters / Downspouts			3				
		H.	Roof Vents				2			
	N O T E S		2.3.C: Exterior roll up vehicle access doors are dirty and dented. Entrance doors contain light scuffing but are in better condition than other shop doors. 2.4.H: Roof vents including exhaust stacks are deteriorated and rusted.							
3	**Structure**									**2.6**
	3.1		Foundation/ Footing							3.0
	3.2		Columns							3.0
	3.3		Framing System							1.0
	3.4		Walls							3.0
	3.5		Lateral Force Resistance System							3.0
	3.6		Covered Walkway/Canopy							N/A
	3.7		Chimney							N/A
	N O T E S		3.3: Large amount of surface rust is present at exposed framing system in covered equipment storage area.							

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**2.2**
	4.1	Ceilings								2.7
		A.	Suspended Ceiling (ACT)							
		B.	Gypsum Board						N/A	
		C.	Plaster							
		D.	Wood				2			
		E.	Other			3				
		F.	Exposed			3				
	4.2	Flooring								2.0
		A.	Carpet						N/A	
		B.	Vinyl						N/A	
		C.	Tile						N/A	
		D.	Wood						N/A	
		E.	Concrete				2			
	4.3	Interior Wall/Partition Finishes								2.0
	4.4	Interior Doors								2.0
	4.5	Stairs Condition								1.5
		A.	Stairs/ Landing					1		
		B.	Handrails				2			
	4.6	Toilet Condition								3.0
		A.	Toilet Accessories			3				
		B.	Toilet Partitions						N/A	
		C.	Water Closets			3				
		D.	Urinals							
		E.	Lavatorie /Sinks			3			N/A	
		F.	Counter						N/A	
		G.	Shower Compartments						N/A	
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A

N O T E S

4.1.D: Exposed wood ceiling in lubrication storage area is covered in paint and not flush with walls.
4.2.E: Concrete flooring at shop contains major cracking and faded striping.
4.3: Interior walls are covered in grease and grime with areas of chipping or faded paint.
4.4: Interior doors are stuffed with fading paint.
4.5.A: Interior stairs are exposed wood with signs of rot and other deficiencies.
4.5.B: Interior stair handrails consist of an undersized metal pipe.

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**3.1**
	5.1	Mechanical Systems								2.3
		A.	HVAC				2			
		B.	Control System						N/A	
		C.	Chiller						N/A	
		D.	Cooling Towers						N/A	
		E.	Duct Work			3				
		F.	Ventilation\ Air Distribution				2			
		G.	Boilers						N/A	
	5.2	Electrical Systems								3.0
		A.	Transformer						N/A	
		B.	Switchgear			3				
		C.	Panelboards (Condition & Capacity)						N/A	
		D.	Devices (Switches & Receptacles)			3				
		E.	Interior Lighting Fixtures			3				
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System						N/A	
	5.3	Voice and Data Systems								3.0
	5.4	Plumbing Systems								3.0
		A.	Plumbing Fixtures			3				
		B.	Water Distribution System/ Pipes			3				
		C.	Water Heaters			3				
	5.5	Gas Distribution Systems								4.0
	5.6	Fire Suppression System								N/A
	N O T E S	5.1.A: Air Conditioning is provided by ceiling or wall-mounted units. Wall-mounted unit for upper level office is a typical window-mounted A/C unit. 5.1.F: Ventilation is lacking and floor fans must be used to maintain ventilation throughout.								

System				Condition		
				Compliance	Non-compliance	N/A
6	**ADA Compliance**					
	6.1	Site				
		A.	Accessible Parking Spaces	C		
		B.	Passenger Loading Zones	C		
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space		NC	
		B.	Doors/ Doorways/Gates	C		
		C.	Threshold	C		
		D.	Ramps			N/A
		E.	Stairways		NC	
		F.	Handrails		NC	
		G.	Elevators			N/A
	6.3	Toilet				
		A.	Clearances/Accessible Stall		NC	
		B.	Toilet Accessories		NC	
		C.	Water Closets		NC	
		D.	Urinals			N/A
		E.	Lavatories/ Sinks		NC	
		F.	Counters			N/A
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry			N/A
		B.	Furniture, Fixtures & Equipment - FF&E		NC	
		C.	Signage		NC	
	NOTES	6.2.A: Clear floor space is not present throughout. 6.2.E-F: Stairways and associated handrails at shop storage areas is not compliant. 6.3.A, B, C, E: No aspects of restroom are compliant due to lack of space. 6.4.B: Provide ADA compliant furniture, fixtures and equipment with accessible height and knee and toe clearances. 6.4.C: Provide ADA compliant service center administration building directional and restroom signage with tactile text and Braille.				

Photo Documentation | Exterior Overall







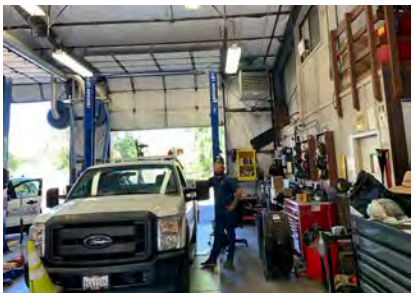








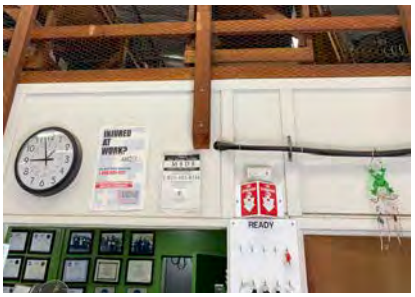

Photo Documentation | Interior Blow Ups





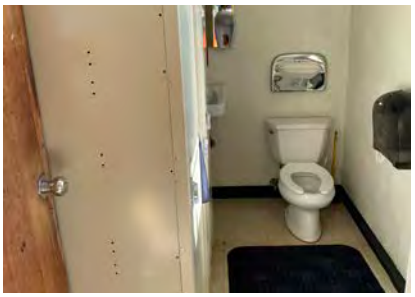




















FACILITY CONDITION ASSESSMENT

BOYD SERVICE CENTER

BUILDING H - OLD TRANSIT CENTER STATION



Condition Summary - Boyd Service Center

Building H - Old Transit Center Station

Overall Rating 3.5







Facility Condition

Site 3.6

Asphalt paving for the administration parking area is cracked in places especially around central drainage. Parking lot painting and staining in this area has been recently redone. Curbing around sidewalk and landscape elements contains light cracking and discoloration. Landscaping around the administration building is minimal but healthy.

Portable facilities near the Administration Building are surrounded by crushed rock with exposed dirt in areas. Rear fencing near portable trailers used for storage is dirty and determined in areas. Much debris is stored haphazardly on site near portable storage trailers.

Much of the site's surface is dirt and water ponding/mud accumulation is an issue during rainy months. Large LED lighting fixtures similar in specification to street lights provide illumination to a portion of the Boyd Service Center. Site striping and marking on paved areas is difficult to view because of both fading paint and dirt encroaching paved areas.

Exterior Envelope 3.5

In general, exterior envelopes of buildings at Boyd Service Center are painted metal buildings with metal roofs and interior steel structures. Siding at some buildings is in good condition while others show signs of faded paint and rust.

Steel ship containers used for storage for various City of Tracy departments contain surfaces in various states of condition with some major rusting and deterioration occurring at some.

Painted wood siding and eaves of old Transit Facility located at Boyd site are flaking in places but roof structure is in visibly good condition. Painted metal siding of Building D is faded with scratching and siding attachment screws are rusted. Building B has been recently renovated with painted metal siding and a new metal roof.

Structure 3.3

Interior light fixtures and ceiling grid systems freely hung from the administration building ceiling may require additional non-structural seismic lateral and longitudinal support. Cracking exists at various concrete floors throughout facility buildings.

Interior 3.4

The interior of the administration building restroom facilities contain flooring, fixtures, wall tile and paint all in good condition. A minor issue in the main restroom is that the paper towel dispenser is separating from the painted wall surface and the paint surface is cracking at separation.

Concrete flooring of Building C is cracked and stained in places. Acoustic ceiling tile of this same building contains many stains from leaking plumbing. Storage inside Building D is well-arranged. Building E is used for vehicle maintenance and is slightly undersized for the City of Tracy with some equipment beyond its useful service life. Restroom flooring inside Building E is stained with tiles in various states of deterioration.

Condition Summary - Boyd Service Center

Building H - Old Transit Center Station

MEP Systems 3.4

Items are stored in front of fire alarm panels and circuit breakers in Electric/IT room. Some light scuffing is present at wood door surfaces to office suites.

A fueling station sits adjacent to the mechanizes shops and main Boyd entrance and is in operable condition. Pumps are out of date and fairly slow to operate with paint fading from pumps and fueling station. A GreenField NGV natural gas fueling system is also present on site. 800 A main electrical service is located on-site.

ADA Compliance Needs Compliance

Braille is not provided at interior signage of administration building. Vehicle maintenance, Building E, contains a non-compliant second story loft area used for offices. Restroom in Building E is also non-compliant.

Recommendation Summary - Boyd Service Center

Building H - Old Transit Center Station



Break Room



Break Room


Break Room Floor

Recommendations

Site: It is recommended to repaint site striping and eventually repave site. Clear unnecessary items from site and rearrange storage areas.

Exterior Envelope: Paint exterior of shop and maintenance buildings that have faded or scratched paint surfaces.

Structure: Investigate cause of cracking and refinish flooring if desired. Install additional non-structural seismic supports to hanging lighting elements.

Interior: Refinish wall elements necessary in administration building restroom. Consider new shop space for vehicle maintenance.

MEP Systems: Investigate cause of leakage at acoustic ceiling tile at Building C interior. Remove items stored in front of fire alarm panels and circuit breakers.

ADA Compliance: Provide ADA compliant restroom location for vehicle maintenance shops as renovating restroom at vehicle maintenance shops is not feasible. Provide ADA compliant directional and room signage throughout administration building.

Impact of Recommended Works

Site: Site striping will cause major impact on the site and likely require vehicles and objects to be moved around during the process. Clearing unnecessary items from storage areas will require additional coordination with other City of Tracy Departments.

Exterior Envelope: Minor impact of recommended works to shop operations. Two weeks will be required to paint facilities.

Structure: Investigation as to cause of cracking may require an outside design consultant. Installation of non-structural seismic supports to hung lighting elements can be completed within a week with minimal impact to the facility.

Interior: Administration restrooms will likely be closed for one day for wall surface refinishing.

MEP Systems: Repair of issue causing leakage may require some impact to Building C operations.

ADA Compliance: Providing ADA compliant signage will have a minimal impact on the facility. Renovating restroom at vehicle maintenance shops is not feasible.

Facility Description - Boyd Service Center

Building H - Old Transit Center Station


Gutter


Interior



Exterior

Service Center Description

The Service Center complex contains several structures including the administration building, mechanical shops, welding shops, various sheds and storage structures. Although they were all built separately, this complex has been located in the City of Tracy since 1973 with major updates throughout the years including a Public Works administration facility built on the edge of the site in 2011. Parking and exterior storage throughout the compound provides for a variety of vehicles and other items to be stored and worked on.

The Boyd Service Center houses offices and workspaces for city maintenance employees as well as lockers, shower rooms, break rooms and meeting areas.

The Old Transit Center Station is used as meeting and break space.

Age

The Boyd Service Center is 49 years old and was constructed in 1973.

Use of Building

The building is used in the following ways:

- Provides maintenance services to vehicles and other mechanical systems
- Houses spaces for offices
- Provides storage for various items
- Provides a fueling station

			System	Condition						Rank
				Excellent	Good	Fair	Poor	Critical	N/A	
				5	4	3	2	1		
	Boyd Services Center - Old Transit Center - H									**3.5**
1	**Site/ Civil/ Landscape**									**3.6**
	1.1	Fences/ Walls/ Gates								3.0
		A.	Perimeter Fencing			3				
		B.	Equipment Fencing			3				
		C.	Landscape Walls/ Piers / Structures			3				
		D.	Gates			3				
	1.2	Paving								3.8
		A.	Sidewalks/ Walkways/ Crosswalks		4					
		B.	Curbing		4					
		C.	Driveways/ Parking Pavement			3				
		D.	Striping/ Marking/ Speed Bumps		4					
		E.	Patios						N/A	
	1.3	Landscape								4.0
		A.	Ground Cover		4					
		B.	Trees		4					
		C.	Irrigation System		4					
	1.4	Site Features/ Fixtures/ Furniture/ Signage								3.2
		A.	Landscape Features/ Play Equipment			3				
		B.	Exterior Lighting Fixtures			3				
		C.	Water Fixtures			3				
		D.	Exterior Site Furniture			3				
		E.	Site Utility		4					
	1.5	Stormwater Management								4.0
	N O T E S									

	System			Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**3.5**
	2.1	Exterior Wall Finish								4.0
	2.2	Eaves and Fascias								3.0
	2.3	Doors/ Windows/ Louvers								3.3
		A.	Windows		4					
		B.	Louvers and Vents			3				
		C.	Exterior Doors & Hardware			3				
	2.4	Roofing								3.8
		A.	Roof Surface			3				
		B.	Roof Opening/ Skylight/ Penetrations		4					
		C.	Roof Equipment Curbing		4					
		D.	Leakage						N/A	
		E.	Ponding Water						N/A	
		F.	Roof Drainage		4					
		G.	Gutters / Downspouts		4					
		H.	Roof Vents		4					
	N O T E S									
3	**Structure**									**3.3**
	3.1	Foundation/ Footing								4.0
	3.2	Columns								3.0
	3.3	Framing System								3.0
	3.4	Walls								3.0
	3.5	Lateral Force Resistance System								3.0
	3.6	Covered Walkway/Canopy								4.0
	3.7	Chimney								N/A
	N O T E S									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**3.5**
	4.1	Ceilings								4.0
		A.	Suspended Ceiling (ACT)						N/A	
		B.	Gypsum Board						N/A	
		C.	Plaster		4					
		D.	Wood						N/A	
		E.	Other						N/A	
		F.	Exposed						N/A	
	4.2	Flooring								3.0
		A.	Carpet							
		B.	Vinyl			3				
		C.	Tile						N/A	
		D.	Wood						N/A	
		E.	Concrete						N/A	
	4.3	Interior Wall/Partition Finishes								4.0
	4.4	Interior Doors								3.0
	4.5	Stairs Condition								N/A
		A.	Stairs/ Landing		4				N/A	
		B.	Handrails		4				N/A	
	4.6	Toilet Condition								N/A
		A.	Toilet Accessories						N/A	
		B.	Toilet Partitions						N/A	
		C.	Water Closets						N/A	
		D.	Urinals						N/A	
		E.	Lavatorie /Sinks						N/A	
		F.	Counter						N/A	
		G.	Shower Compartments						N/A	
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**3.4**
	5.1	Mechanical Systems								3.8
		A.	HVAC		4					
		B.	Control System		4					
		C.	Chiller			3				
		D.	Cooling Towers						N/A	
		E.	Duct Work		4					
		F.	Ventilation\ Air Distribution		4					
		G.	Boilers						N/A	
	5.2	Electrical Systems								3.6
		A.	Transformer						N/A	
		B.	Switchgear		4					
		C.	Panelboards (Condition & Capacity)			3				
		D.	Devices (Switches & Receptacles)		4					
		E.	Interior Lighting Fixtures		4					
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System			3				
	5.3	Voice and Data Systems								3.0
	5.4	Plumbing Systems								3.0
		A.	Plumbing Fixtures			3				
		B.	Water Distribution System/ Pipes			3				
		C.	Water Heaters						N/A	
	5.5	Gas Distribution Systems								4.0
	5.6	Fire Suppression System								3.0
	N O T E S									

System				Condition		
				Compliance	Non-compliance	N/A
6	ADA Compliance					
	6.1	Site				
		A.	Accessible Parking Spaces	C		
		B.	Passenger Loading Zones	C		
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space	C		
		B.	Doors/ Doorways/Gates	C		
		C.	Threshold	C		
		D.	Ramps			N/A
		E.	Stairways			N/A
		F.	Handrails			N/A
		G.	Elevators			N/A
	6.3	Toilet				
		A.	Clearances/Accessible Stall			N/A
		B.	Toilet Accessories			N/A
		C.	Water Closets			N/A
		D.	Urinals			N/A
		E.	Lavatories/ Sinks			N/A
		F.	Counters			N/A
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry		NC	
		B.	Furniture, Fixtures & Equipment - FF&E		NC	
		C.	Signage		NC	
	NOTES	6.4.A: Provide knee and toe clearance under working surfaces and front desk counters. 6.4.B: Provide ADA compliant furniture, fixtures and equipment with accessible height and knee and toe clearances. 6.4.C: Provide ADA compliant service center administration building directional and restroom signage with tactile text and Braille.				

FACILITY CONDITION ASSESSMENT

3 SERIES HANGARS



Condition Summary - 3 Series Hangars

Overall Rating **3.4**







Facility Condition

Site 3.4

The 3 series hangars are located on site at the Tracy Municipal Airport. The Airport Operations office is located adjacent to the 3 series hangars and houses three airport employees.

Exterior Envelope 3.1

Light rusting is present a metal exterior panel edges. Gate tracks are rusted and often bent out of plumb. Waterproofing elements at bases of doors differ among hangars. Single pane windows are present at the Airport Operations office. The office paint is in good condition overall with no signs of chipping. Door frames are exposed wood with splitting and discoloration. Single plane window frames contain splitting wood frames and chipping paint throughout. Wood window sills are similarly deteriorating. Roof surface is rusted and out of plumb.

Structure 3.3

Exposed wood structure and trimming exists throughout with some signs of water damage. Foundation is in visibly sound condition. Some metal beams are slightly rusted and would benefit from a reapplication of protective coating.

Interior 3.3

Interior of the 3 series hangars largely consists of exposed redwood structure. Concrete flooring contains minimal cracking. Airport operations office has worn carpeting and contains an acoustic tile ceiling.

MEP Systems 3.9

Lighting controls are present at hangars. Vents have been created in the ceiling of Airport Operations office to reduce the popping noises due to wind. Electrical junction boxes containing circuit breakers are mounted to hangar exterior with exposed conduit in fair condition. Minimal rusting and deterioration is present at exposed conduit joints.

ADA Compliance Needs Compliance

The 3 series hangars are non-ADA compliant due to threshold concerns, locations of light switches and other elements. The Airport Operations office has non-compliant elements including furniture and counter items.

Recommendation Summary - 3 Series Hangars


Exterior


Office


Storage

Recommendations

Site: Perform site drainage improvements when repavement takes place.

Exterior Envelope: Repaint exterior envelope and signage identifying individual hangars.

Structure: Repair or replace rusted structural elements.

Interior: Finish drywall ceiling in office storage area.

MEP Systems: Install water line for use at 3 and 4 series hangars. Replace rusted conduit at exterior.

ADA Compliance: Perform a thorough ADA compliance study for Pilot's lounge and consider renovations at same time as interior renovations.

Impact of Recommended Works

Site: Hangars will require vacancy during site repavement process. This task may require outside design consultants when ready to be completed.

Exterior Envelope: Minor impact of recommended works may include hangars not accessible during painting. Two weeks will be required to repaint the facility and signage.

Structure: Moderate impact of recommended works. Components may have to be sourced or fabricated with portions of the facility closed during renovations.

Interior: Moderate impact will require closure of the office storage area during renovations. One month will be required to finish drywall ceiling renovations.

MEP Systems: Water line should be installed during site repavement to minimize cost and disruptions. Rusted conduit components can be replaced in a couple of days.

ADA Compliance: ADA improvements may take an additional amount of time from standard interior renovations depending on scope and severity of work.

Facility Description - 3 Series Hangars


Exterior


Interior


MEP

Building Description

The 3 Series Hangars are metal buildings used to provide space to pilots from the Tracy Municipal Airport. The exterior siding and roof construction is metal with steel interior structural supports and a concrete foundation. The 4 Series Hangars are also used to house maintenance offices and storage space for the airport. Rental rates for the 3 Series hangars are in line with costs for the 4 Series hangars and are slightly lower than G-Series in pricing. Square footage of individual hangar spaces is approximately 820 SF.

Age

The 3-Series hangars are 47 years old and were constructed in 1975.

Use of Building

The building is used in the following ways:

- Houses storage space for airplanes and other aviation related items
- Houses maintenance storage and office space
- Houses some storage space for the Tracy Municipal Airport

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
3 Series Hangars - Overall										**3.4**
1	**Site/ Civil/ Landscape**									**3.5**
	1.1	Fences/ Walls/ Gates								4.0
		A.	Perimeter Fencing		4					
		B.	Equipment Fencing						N/A	
		C.	Landscape Walls/ Piers / Structures						N/A	
		D.	Gates		4					
	1.2	Paving								3.7
		A.	Sidewalks/ Walkways/ Crosswalks		4					
		B.	Curbing						N/A	
		C.	Driveways/ Parking Pavement			3				
		D.	Striping/ Marking/ Speed Bumps						N/A	
		E.	Patios		4					
	1.3	Landscape								N/A
		A.	Ground Cover						N/A	
		B.	Trees						N/A	
		C.	Irrigation System						N/A	
	1.4	Site Features/ Fixtures/ Furniture/ Signage								3.5
		A.	Landscape Features/ Play Equipment						N/A	
		B.	Exterior Lighting Fixtures			3				
		C.	Water Fixtures						N/A	
		D.	Exterior Site Furniture						N/A	
		E.	Site Utility		4					
	1.5	Stormwater Management								3.0
	N O T E S									

	System			Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**3.1**
	2.1	Exterior Wall Finish								3.0
	2.2	Eaves and Fascias								3.0
	2.3	Doors/ Windows/ Louvers								3.5
		A.	Windows			3				
		B.	Louvers and Vents						N/A	
		C.	Exterior Doors & Hardware		4					
	2.4	Roofing								3.0
		A.	Roof Surface				2			
		B.	Roof Opening/ Skylight/ Penetrations						N/A	
		C.	Roof Equipment Curbing						N/A	
		D.	Leakage						N/A	
		E.	Ponding Water						N/A	
		F.	Roof Drainage		4					
		G.	Gutters / Downspouts						N/A	
		H.	Roof Vents						N/A	
	NOTES	2.4.A: Roof surface is rusted and out of plumb, and in visually worse condition than 4 Series Hangar roof.								
3	**Structure**									**3.3**
	3.1	Foundation/ Footing								3.0
	3.2	Columns								4.0
	3.3	Framing System								3.0
	3.4	Walls								3.0
	3.5	Lateral Force Resistance System								3.0
	3.6	Covered Walkway/Canopy								4.0
	3.7	Chimney								N/A
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**3.3**
	4.1	Ceilings								3.3
		A.	Suspended Ceiling (ACT)		4					
		B.	Gypsum Board				2			
		C.	Plaster						N/A	
		D.	Wood						N/A	
		E.	Other						N/A	
		F.	Exposed		4					
	4.2	Flooring								3.5
		A.	Carpet						N/A	
		B.	Vinyl						N/A	
		C.	Tile		4					
		D.	Wood						N/A	
		E.	Concrete			3				
	4.3	Interior Wall/Partition Finishes								3.0
	4.4	Interior Doors								N/A
	4.5	Stairs Condition								N/A
		A.	Stairs/ Landing						N/A	
		B.	Handrails						N/A	
	4.6	Toilet Condition								N/A
		A.	Toilet Accessories						N/A	
		B.	Toilet Partitions						N/A	
		C.	Water Closets						N/A	
		D.	Urinals						N/A	
		E.	Lavatorie /Sinks						N/A	
		F.	Counter						N/A	
		G.	Shower Compartments						N/A	
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	NOTES	4.1.B: Gypsum board ceiling is only half finished in office storage area of 3 Series Hangars, with exposed wood structure present.								

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**3.9**
	5.1	Mechanical Systems								4.3
		A.	HVAC		4					
		B.	Control System	5						
		C.	Chiller						N/A	
		D.	Cooling Towers						N/A	
		E.	Duct Work						N/A	
		F.	Ventilation\ Air Distribution		4					
		G.	Boilers						N/A	
	5.2	Electrical Systems								3.5
		A.	Transformer			3				
		B.	Switchgear						N/A	
		C.	Panelboards (Condition & Capacity)			3				
		D.	Devices (Switches & Receptacles)		4					
		E.	Interior Lighting Fixtures		4					
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System						N/A	
	5.3	Voice and Data Systems								4.0
	5.4	Plumbing Systems								N/A
		A.	Plumbing Fixtures						N/A	
		B.	Water Distribution System/ Pipes						N/A	
		C.	Water Heaters						N/A	
	5.5	Gas Distribution Systems								N/A
	5.6	Fire Suppression System								N/A
	NOTES									

System				Condition		
				Compliance	Non-compliance	N/A
6	**ADA Compliance**					
	6.1	Site				
		A.	Accessible Parking Spaces	C		
		B.	Passenger Loading Zones		NC	
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space		NC	
		B.	Doors/ Doorways/Gates		NC	
		C.	Threshold		NC	
		D.	Ramps			N/A
		E.	Stairways			N/A
		F.	Handrails			N/A
		G.	Elevators			N/A
	6.3	Toilet				
		A.	Clearances/Accessible Stall			N/A
		B.	Toilet Accessories			N/A
		C.	Water Closets			N/A
		D.	Urinals			N/A
		E.	Lavatories/ Sinks			N/A
		F.	Counters			N/A
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry		NC	
		B.	Furniture, Fixtures & Equipment - FF&E		NC	
		C.	Signage		NC	
	NOTES	6.1.B: ADA compliant passenger loading zones do not exist for hangers. 6.2.A: Clear floor space is not provided at hangar interior. 6.2 B: Door operational controls are not ADA compliant. 6.2.C: Threshold at sliding door entrance to hangars is not ADA compliant. 6.4.A: Provide ADA compliant cabinetry. 6.4.B: Provide ADA compliant furniture, fixtures and equipment with accessible height and knee and toe clearances. 6.4.C: Provide ADA compliant hangar signage with tactile text and Braille.				

Photo Documentation | Exterior Overall



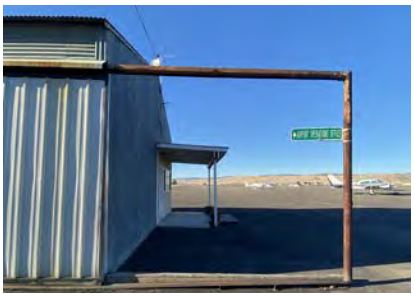




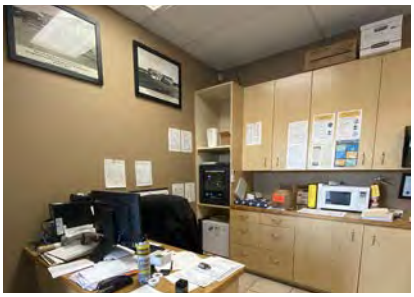
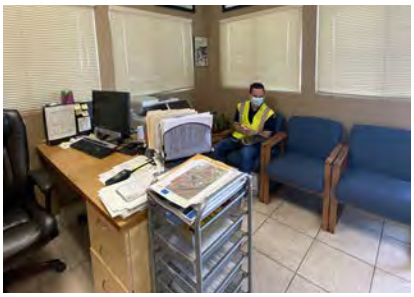
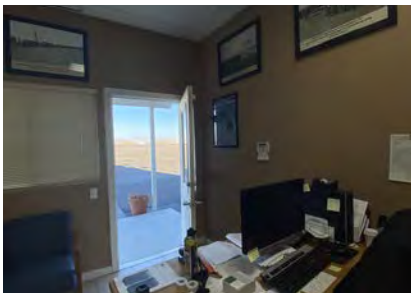








Photo Documentation | Interior Blow Ups









FACILITY CONDITION ASSESSMENT

4 SERIES HANGARS



Condition Summary - 4 Series Hangars

Overall Rating **3.6**





Facility Condition

Site 3.5

Stormwater management between the 4 Series Hangars and Skyview Aviation would be improved with site slopes and drains, but drainage for the airfield overall is adequate. Water drainage from 4 Series Hangars heads north toward Skyview Aviation and grass area in runoff pits near the edge of airport property. A short security fence with the gate is located near the 4 Series Hangars and is in operable condition with much service life remaining. Site pavement contains large and lengthy cracking but contains remaining service life before repavement is necessary.

Exterior Envelope 3.4

The exterior metal siding contains chipping and worn paint throughout. Metal roof is in fair condition with no reports of frequent leaks. Painted signage identifying individual hangar numbers is faded and scuffed.

Structure 3.8

Main metal structural elements are quite rusty including the siding of sliding hangar doors and at steel structural framing in interiors. Walls are visually plumb.

Interior 3.3

The Pilot's Lounge is located in the 4 Series Hangars. Flooring in Pilot's Lounge is in poor condition with many gaps in the finish. Patched drywall is present at multiple locations. Interior lighting is fluorescent lacking and would benefit from an upgrade. Doors at the interior contain various types of locking mechanisms.

MEP Systems 3.9

An exterior mounted transformer rated at 208 Y/120 is located adjacent to the 4 Series Hangars that serves both the 3 and 4 series hangars. There is no water line available for use to the 4 series hangars. Conduits with junction boxes are mounted to both the exterior and interior structures and are in fair condition with some rusting present.

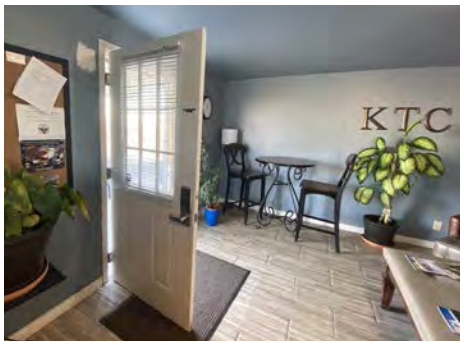
ADA Compliance Needs Compliance

The hangars are not ADA compliant for a number of reasons including threshold concerns and location of facility elements. The Pilot's Lounge is largely non-compliant due to various violations present in the small space.

Recommendation Summary - 4 Series Hangars



Exterior



Interior


Hangar

Recommendations

Site: Perform site drainage improvements when repavement takes place.

Exterior Envelope: Repaint exterior envelope and signage identifying individual hangars.

Structure: Repair or replace rusted structural elements.

Interior: Replace flooring in Pilot's lounge. Paint interior and repair drywall. Replace lighting fixtures in Pilot's lounge.

MEP Systems: Install water line for use at 3 and 4 Series Hangars. Replace rusted conduit at exterior.

ADA Compliance: Perform a thorough ADA compliance study for Pilot's lounge and consider renovations at same time as interior renovations.

Impact of Recommended Works

Site: Hangars will require vacancy during site repavement processes. This task may require outside design consultants when ready to be completed.

Exterior Envelope: Minor impact of recommended works may include hangars not accessible during painting. Two weeks will be required to repaint the facility and signage.

Structure: Moderate impact of recommended works. Components may have to be sourced or fabricated with portions of the facility closed during renovations.

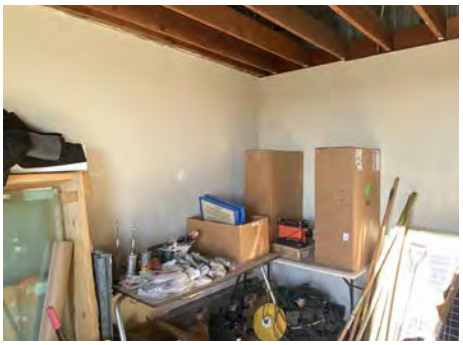
Interior: Moderate impact will require closure of the Pilot's lounge during renovations. Two weeks will be required for these renovations.

MEP Systems: Water line should be installed during site repavement to minimize cost and disruptions. Rusted conduit components can be replaced in a couple of days.

ADA Compliance: ADA improvements may take an additional amount of time from standard interior renovations depending on scope and severity of work.

Facility Description - 4 Series Hangars


Exterior


Interior


Electrical at Exterior

Building Description

The 4 Series Hangars are metal buildings used to rent out space to pilots from the Tracy Municipal Airport. The exterior siding and roof construction is metal with steel interior structural supports and a concrete foundation. The 4 Series Hangars are also used to house the Pilot's Lounge for the airport. Rental rates for the 4 Series hangars are in line with costs for the 3 Series hangars and are slightly lower than G-Series in pricing. Square footage of individual hangar spaces is approximately 820 SF.

Age

The 4-Series hangars are 47 years old and were constructed in 1975.

Use of Building

The building is used in the following ways:

- Houses storage space for airplanes and other aviation related items
- Houses Pilot's Lounge
- Houses some storage space for the Tracy Municipal Airport

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4 Series Hangers - Overall										**3.6**
1	**Site/ Civil/ Landscape**									**3.5**
	1.1	Fences/ Walls/ Gates								4.0
		A.	Perimeter Fencing		4					
		B.	Equipment Fencing						N/A	
		C.	Landscape Walls/ Piers / Structures						N/A	
		D.	Gates		4					
	1.2	Paving								3.7
		A.	Sidewalks/ Walkways/ Crosswalks		4					
		B.	Curbing						N/A	
		C.	Driveways/ Parking Pavement			3				
		D.	Striping/ Marking/ Speed Bumps						N/A	
		E.	Patios		4					
	1.3	Landscape								N/A
		A.	Ground Cover						N/A	
		B.	Trees						N/A	
		C.	Irrigation System						N/A	
	1.4	Site Features/ Fixtures/ Furniture/ Signage								3.5
		A.	Landscape Features/ Play Equipment						N/A	
		B.	Exterior Lighting Fixtures			3				
		C.	Water Fixtures						N/A	
		D.	Exterior Site Furniture						N/A	
		E.	Site Utility		4					
	1.5	Stormwater Management								3.0
	N O T E S									

	System			Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**3.4**
	2.1	Exterior Wall Finish								3.0
	2.2	Eaves and Fascias								3.0
	2.3	Doors/ Windows/ Louvers								4.0
		A.	Windows		4					
		B.	Louvers and Vents						N/A	
		C.	Exterior Doors & Hardware		4					
	2.4	Roofing								3.5
		A.	Roof Surface			3				
		B.	Roof Opening/ Skylight/ Penetrations						N/A	
		C.	Roof Equipment Curbing						N/A	
		D.	Leakage						N/A	
		E.	Ponding Water						N/A	
		F.	Roof Drainage		4					
		G.	Gutters / Downspouts						N/A	
		H.	Roof Vents						N/A	
	N O T E S									
3	**Structure**									**3.8**
	3.1	Foundation/ Footing								3.0
	3.2	Columns								4.0
	3.3	Framing System								4.0
	3.4	Walls								4.0
	3.5	Lateral Force Resistance System								4.0
	3.6	Covered Walkway/Canopy								4.0
	3.7	Chimney								N/A
	N O T E S									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**3.3**
	4.1	Ceilings								4.0
		A.	Suspended Ceiling (ACT)						N/A	
		B.	Gypsum Board		4					
		C.	Plaster						N/A	
		D.	Wood						N/A	
		E.	Other						N/A	
		F.	Exposed		4					
	4.2	Flooring								3.0
		A.	Carpet						N/A	
		B.	Vinyl			3				
		C.	Tile						N/A	
		D.	Wood						N/A	
		E.	Concrete			3				
	4.3	Interior Wall/Partition Finishes								3.0
	4.4	Interior Doors								N/A
	4.5	Stairs Condition								N/A
		A.	Stairs/ Landing						N/A	
		B.	Handrails						N/A	
	4.6	Toilet Condition								N/A
		A.	Toilet Accessories						N/A	
		B.	Toilet Partitions						N/A	
		C.	Water Closets						N/A	
		D.	Urinals						N/A	
		E.	Lavatorie /Sinks						N/A	
		F.	Counter						N/A	
		G.	Shower Compartments						N/A	
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**3.9**
	5.1	Mechanical Systems								4.3
		A.	HVAC		4					
		B.	Control System	5						
		C.	Chiller						N/A	
		D.	Cooling Towers						N/A	
		E.	Duct Work						N/A	
		F.	Ventilation\ Air Distribution		4					
		G.	Boilers						N/A	
	5.2	Electrical Systems								3.3
		A.	Transformer			3				
		B.	Switchgear						N/A	
		C.	Panelboards (Condition & Capacity)			3				
		D.	Devices (Switches & Receptacles)			3				
		E.	Interior Lighting Fixtures		4					
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System						N/A	
	5.3	Voice and Data Systems								4.0
	5.4	Plumbing Systems								N/A
		A.	Plumbing Fixtures						N/A	
		B.	Water Distribution System/ Pipes						N/A	
		C.	Water Heaters						N/A	
	5.5	Gas Distribution Systems								N/A
	5.6	Fire Suppression System								N/A
	NOTES									

System				Condition		
				Compliance	Non-compliance	N/A
6	**ADA Compliance**					
	6.1	Site				
		A.	Accessible Parking Spaces	C		
		B.	Passenger Loading Zones		NC	
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space		NC	
		B.	Doors/ Doorways/Gates		NC	
		C.	Threshold		NC	
		D.	Ramps			N/A
		E.	Stairways			N/A
		F.	Handrails			N/A
		G.	Elevators			N/A
	6.3	Toilet				
		A.	Clearances/Accessible Stall			N/A
		B.	Toilet Accessories			N/A
		C.	Water Closets			N/A
		D.	Urinals			N/A
		E.	Lavatories/ Sinks			N/A
		F.	Counters			N/A
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry		NC	
		B.	Furniture, Fixtures & Equipment - FF&E		NC	
		C.	Signage		NC	
	NOTES	6.1.B: ADA compliant passenger loading zones do not exist for hangers. 6.2.A: Clear floor space is not provided at hangar interior. 6.2 B: Door operational controls are not ADA compliant. 6.2.C: Threshold at sliding door entrance to hangars is not ADA compliant. 6.4.A: Provide ADA compliant cabinetry. 6.4.B: Provide ADA compliant furniture, fixtures and equipment with accessible height and knee and toe clearances. 6.4.C: Provide ADA compliant hangar signage with tactile text and Braille.				

Photo Documentation | Exterior Overall



















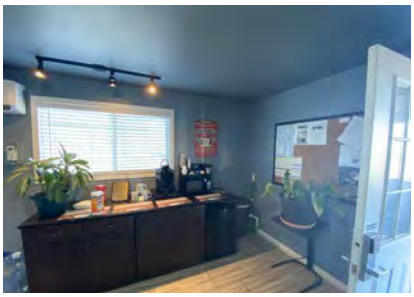






Photo Documentation | Interior Blow Ups



















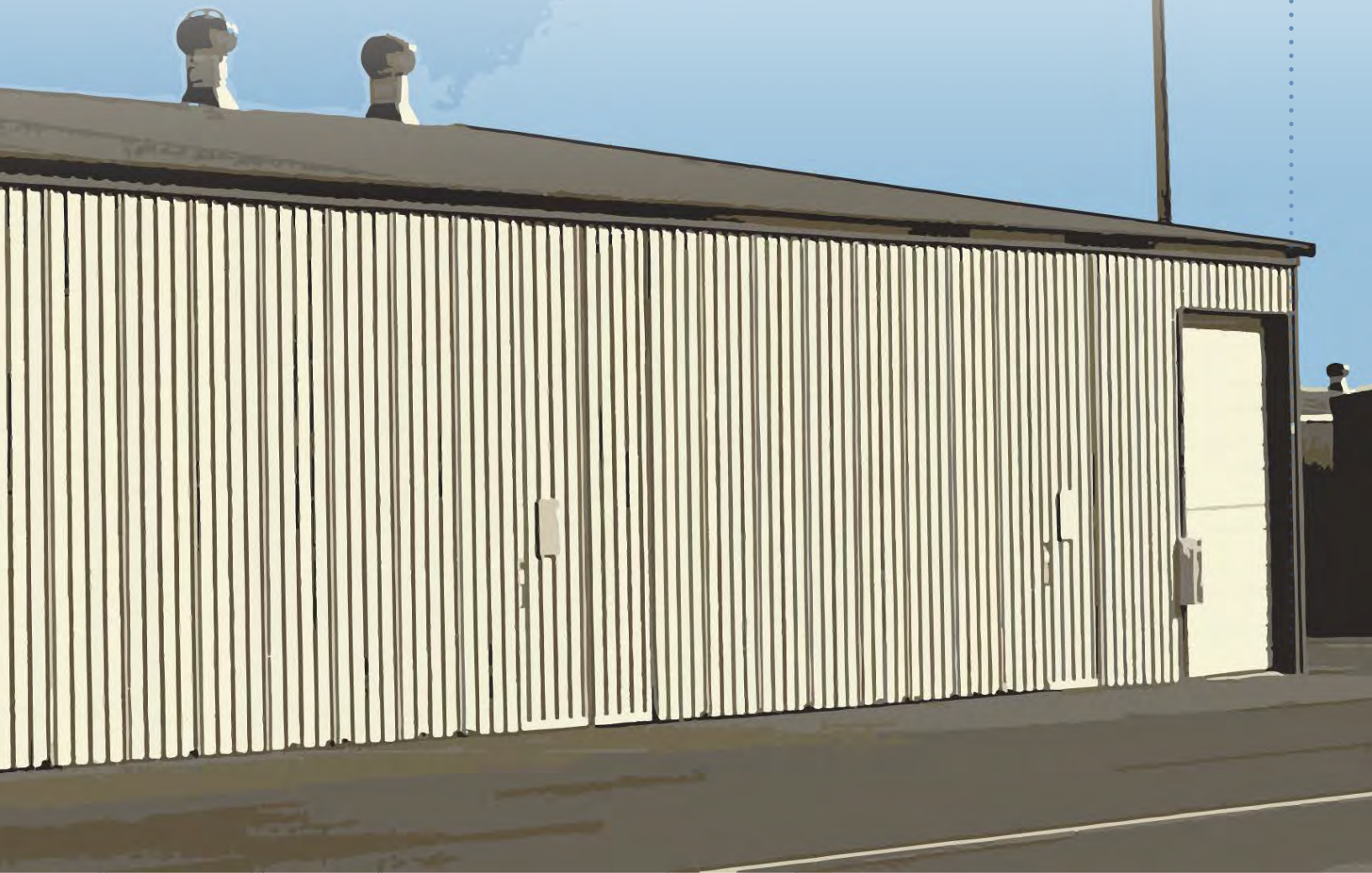






FACILITY CONDITION ASSESSMENT

B SERIES HANGARS



Condition Summary - B Series Hangars

Overall Rating **3.7**





Facility Condition

Site 3.7
Location of B-Series hangars is not ideal for airport maintenance staff as water drains toward the building that often causes tenants to construct makeshift elements to prevent water intrusion. The City must remove these elements at a later date.

Exterior Envelope 4.1
Exterior walls are in good condition and appear recently painted. Roof and mounted exhaust fans contain much remaining service life with no visual deficiencies observed or maintenance problems reported.

Structure 3.8
Steel framing and other interior structural elements appear to be structurally sound with much remaining service life. Some structural wood contains elements of rot, especially in shop area.

Interior 4.0
Staining from oil and other airplane engine fluids is present at interior concrete flooring.

MEP Systems 3.1
Housing for exterior ground-mounted 3-Ph transformer is rusted.

ADA Compliance Needs Compliance
Interior clear floor space is not present at many portions of the interior. Thresholds are present at sliding floor bottoms at entrances to individual hangars.

Recommendation Summary - B Series Hangars


Exterior


Hangar


MEP

Recommendations

Site: It is recommended to move sites for these hangars to be more accessible and useful.

Exterior Envelope: No recommended works necessary.

Structure: It is recommended to remove rot and replace structural elements in shop area.

Interior: Improvements should include cleaning stains on interior concrete flooring.

MEP Systems: Recommended actions include replacing rusted support elements from exterior ground-mounted 3-Phase transformer.

ADA Compliance: Recommendations include clearing floor space to increase accessibility.

Impact of Recommended Works

Site: Impact of site recommendations include temporarily closing of hangars to change sites.

Exterior Envelope: No impact of recommended works.

Structure: Performing structural recommendations will have minor impact on hangar operations. One week will be required to complete recommended actions.

Interior: Executing recommended improvements will have a minor impact on hangar usability; one week will be required to clean stains on flooring and some hangers may be required to be vacated.

MEP Systems: Electrical service to the hangers may require shutdown during replacement of supports.

ADA Compliance: Impact of recommendations will result in increased accessibility within hangars and will require one week to clear out floor space.

Facility Description - B Series Hangars


Exterior


Interior


MEP

Building Description

The B Series Hangars are metal buildings used to rent out space to pilots from the Tracy Municipal Airport. The exterior siding and roof construction is metal with steel interior structural supports and a concrete foundation. The B Series Hangars are the most costly hangars offered by the Airport as they are the largest in size and most up-to-date. The interior square footage of the B series hangars is approximately 1,310 SF.

Age

The B Series Hangars are 28 years old and were constructed in 1993.

Use of Building

The building is used in the following ways:

- Houses storage space for airplanes and other aviation related items
- Houses some storage space for the Tracy Municipal Airport

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
B Series Hangars - Overall										**3.7**
1	**Site/ Civil/ Landscape**									**3.7**
	1.1	Fences/ Walls/ Gates								N/A
		A.	Perimeter Fencing						N/A	
		B.	Equipment Fencing						N/A	
		C.	Landscape Walls/ Piers / Structures						N/A	
		D.	Gates						N/A	
	1.2	Paving								4.0
		A.	Sidewalks/ Walkways/ Crosswalks						N/A	
		B.	Curbing						N/A	
		C.	Driveways/ Parking Pavement		4					
		D.	Striping/ Marking/ Speed Bumps		4					
		E.	Patios						N/A	
	1.3	Landscape								N/A
		A.	Ground Cover						N/A	
		B.	Trees						N/A	
		C.	Irrigation System						N/A	
	1.4	Site Features/ Fixtures/ Furniture/ Signage								3.0
		A.	Landscape Features/ Play Equipment						N/A	
		B.	Exterior Lighting Fixtures			3				
		C.	Water Fixtures						N/A	
		D.	Exterior Site Furniture						N/A	
		E.	Site Utility			3				
	1.5	Stormwater Management								4.0
	NOTES									

	System			Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**4.1**
	2.1	Exterior Wall Finish								4.0
	2.2	Eaves and Fascias								4.0
	2.3	Doors/ Windows/ Louvers								4.0
		A.	Windows						N/A	
		B.	Louvers and Vents						N/A	
		C.	Exterior Doors & Hardware		4					
	2.4	Roofing								4.3
		A.	Roof Surface		4					
		B.	Roof Opening/ Skylight/ Penetrations						N/A	
		C.	Roof Equipment Curbing						N/A	
		D.	Leakage						N/A	
		E.	Ponding Water						N/A	
		F.	Roof Drainage	5						
		G.	Gutters / Downspouts						N/A	
		H.	Roof Vents		4					
	NOTES									
3	**Structure**									**3.8**
	3.1	Foundation/ Footing								3.0
	3.2	Columns								4.0
	3.3	Framing System								4.0
	3.4	Walls								4.0
	3.5	Lateral Force Resistance System								4.0
	3.6	Covered Walkway/Canopy								N/A
	3.7	Chimney								N/A
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**4.0**
	4.1	Ceilings								5.0
		A.	Suspended Ceiling (ACT)						N/A	
		B.	Gypsum Board						N/A	
		C.	Plaster						N/A	
		D.	Wood						N/A	
		E.	Other						N/A	
		F.	Exposed	5						
	4.2	Flooring								3.0
		A.	Carpet						N/A	
		B.	Vinyl						N/A	
		C.	Tile						N/A	
		D.	Wood						N/A	
		E.	Concrete			3				
	4.3	Interior Wall/Partition Finishes								4.0
	4.4	Interior Doors								N/A
	4.5	Stairs Condition								N/A
		A.	Stairs/ Landing						N/A	
		B.	Handrails						N/A	
	4.6	Toilet Condition								N/A
		A.	Toilet Accessories						N/A	
		B.	Toilet Partitions						N/A	
		C.	Water Closets						N/A	
		D.	Urinals						N/A	
		E.	Lavatorie /Sinks						N/A	
		F.	Counter						N/A	
		G.	Shower Compartments						N/A	
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	NOTES									

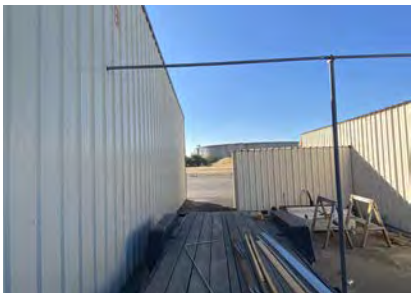
System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**3.1**
	5.1	Mechanical Systems								3.0
		A.	HVAC						N/A	
		B.	Control System						N/A	
		C.	Chiller						N/A	
		D.	Cooling Towers						N/A	
		E.	Duct Work						N/A	
		F.	Ventilation\ Air Distribution			3				
		G.	Boilers						N/A	
	5.2	Electrical Systems								3.2
		A.	Transformer			3				
		B.	Switchgear			3				
		C.	Panelboards (Condition & Capacity)			3				
		D.	Devices (Switches & Receptacles)			3				
		E.	Interior Lighting Fixtures		4					
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System						N/A	
	5.3	Voice and Data Systems								N/A
	5.4	Plumbing Systems								N/A
		A.	Plumbing Fixtures						N/A	
		B.	Water Distribution System/ Pipes						N/A	
		C.	Water Heaters						N/A	
	5.5	Gas Distribution Systems								N/A
	5.6	Fire Suppression System								N/A
	N O T E S									

System				Condition		
				Compliance	Non-compliance	N/A
6	**ADA Compliance**					
	6.1	Site				
		A.	Accessible Parking Spaces		NC	
		B.	Passenger Loading Zones		NC	
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space	C		
		B.	Doors/ Doorways/Gates	C		
		C.	Threshold	C		
		D.	Ramps			N/A
		E.	Stairways			N/A
		F.	Handrails			N/A
		G.	Elevators			N/A
	6.3	Toilet				
		A.	Clearances/Accessible Stall			N/A
		B.	Toilet Accessories			N/A
		C.	Water Closets			N/A
		D.	Urinals			N/A
		E.	Lavatories/ Sinks			N/A
		F.	Counters			N/A
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry			N/A
		B.	Furniture, Fixtures & Equipment - FF&E			N/A
		C.	Signage		NC	
	NOTES	6.1.A: ADA compliant parking spaces do not exist for hangers. 6.1.B: ADA compliant passenger loading zones do not exist for hangers. 6.4.C: Provide ADA compliant hangar signage with tactile text and Braille.				

Photo Documentation | Exterior Overall





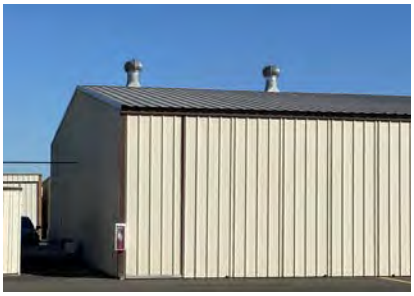
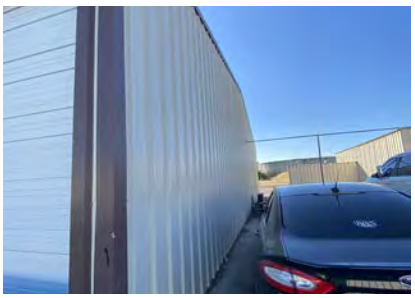
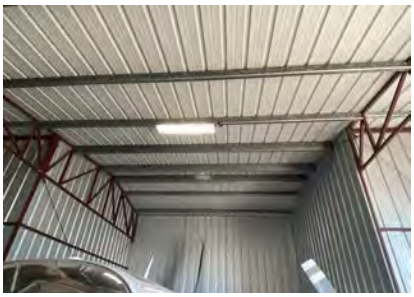




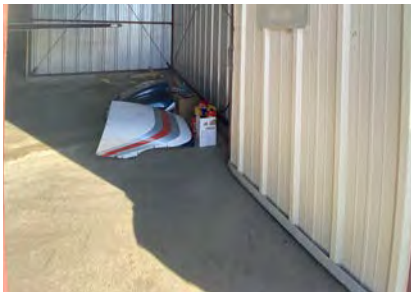


Photo Documentation | Interior Blow Ups














FACILITY CONDITION ASSESSMENT

F SERIES HANGARS



Condition Summary - F Series Hangars

Overall Rating **2.7**







Facility Condition

Site 3.0

Asphalt surrounding F-Series hangars is in good condition with minimal cracking and recent pavement striping. Site lighting is present but not directly adjacent to F-Series hangars. The transformer feeding all nearby hangars is located on the other side of the F-Series hangars adjacent to the G-Series hangars.

Exterior Envelope 2.7

Steel exterior of F-Series hangars is rusted in places especially at entrance thresholds and door components. Paint has chipped which has allowed rusting. Paint is faded and hangars are not uniform in color. Flat roofs are discolored and rusting at edges. Tow hitches used for transport of hangars appear rusted and should be further investigated prior to transport. Door latching system is worn and had to utilize at many doors.

Structure 2.8

Structure is rusting away at various locations, especially at door components. Replacement parts are unavailable and must be fabricated.

Interior 3.0

Some staining is present at interior asphalt floors. Minimal cracking is present in flooring. Interior lighting lenses are discolored.

MEP Systems 2.1

Interior lighting fixtures are present. Underground leaks are reported at all F-series hangars.

ADA Compliance Needs Compliance

Significant thresholds exist at entrances and throughout interiors of hangars which are part of door system.

Recommendation Summary - F Series Hangars


Exterior


Interior


Rubber Washer

Recommendations

Site: It is recommended to add photocell lighting fixtures directly adjacent to the hangar.

Exterior Envelope: Recommended actions include cleaning rusted areas of the hangar include entrance thresholds and door components, repainting the facade and making sure all hangars are painted in the same color, cleaning and painting flat roofs, potentially replacing tow hitches and replacing rusted door latching system.

Structure: It is recommended to order fabricated parts for rusted components throughout the hangar.

Interior: Recommendations include cleaning interior asphalt floors and interior lighting lenses.

MEP Systems: Improvements should include further investigation and repair to all underground leaks.

ADA Compliance: Recommendations include clearing floor space to increase accessibility and modifying door operations and threshold to be ADA compliant.

Impact of Recommended Works

Site: Impact of site recommendations are minor. One week will be required for the addition of lighting fixtures.

Exterior Envelope: Impacts of recommendations are moderate and may require hangars to be vacated. One month will be required after components are ordered.

Structure: Performing structural recommendations will require eight to twelve weeks to fabricate and apply to the hangars.

Interior: Performing the interior recommended improvements should have minor effects on the hangars operations. One week will be required to clean asphalt floors and lighting lenses.

MEP Systems: Impacts of leak investigation will vary upon findings and may be significant.

ADA Compliance: Impact of recommendations will result in increased accessibility within hangars and will require one week to clear out floor space. Changes to threshold will likely require more significant design and may be applied to a smaller number of hangers designated as accessible.

Facility Description - F Series Hangars


Exterior


Interior


Tow Hitch

Building Description

The F Series Hangars are metal buildings used to rent out space to pilots from the Tracy Municipal Airport. The exterior siding and roof construction is metal with steel interior structural supports and a concrete foundation. The F Series Hangars are the lowest priced hangars offered by the airport with interior square footage of approximately 690 SF.

Age

The F-Series hangars are 67 years old and were constructed in 1955.

Use of Building

The building is used in the following ways:

- Houses storage space for airplanes and other aviation related items
- Houses some storage space for the Tracy Municipal Airport

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
F Series Hangars - Overall										**2.7**
1	**Site/ Civil/ Landscape**									**3.0**
	1.1	Fences/ Walls/ Gates								N/A
		A.	Perimeter Fencing						N/A	
		B.	Equipment Fencing						N/A	
		C.	Landscape Walls/ Piers / Structures						N/A	
		D.	Gates						N/A	
	1.2	Paving								3.0
		A.	Sidewalks/ Walkways/ Crosswalks						N/A	
		B.	Curbing						N/A	
		C.	Driveways/ Parking Pavement			3				
		D.	Striping/ Marking/ Speed Bumps			3				
		E.	Patios						N/A	
	1.3	Landscape								N/A
		A.	Ground Cover						N/A	
		B.	Trees						N/A	
		C.	Irrigation System						N/A	
	1.4	Site Features/ Fixtures/ Furniture/ Signage								3.0
		A.	Landscape Features/ Play Equipment						N/A	
		B.	Exterior Lighting Fixtures			3				
		C.	Water Fixtures						N/A	
		D.	Exterior Site Furniture						N/A	
		E.	Site Utility			3				
	1.5	Stormwater Management								3.0
	NOTES									

	System			Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**2.7**
	2.1	Exterior Wall Finish								3.0
	2.2	Eaves and Fascias								2.0
	2.3	Doors/ Windows/ Louvers								3.0
		A.	Windows						N/A	
		B.	Louvers and Vents						N/A	
		C.	Exterior Doors & Hardware			3				
	2.4	Roofing								2.7
		A.	Roof Surface			3				
		B.	Roof Opening/ Skylight/ Penetrations						N/A	
		C.	Roof Equipment Curbing						N/A	
		D.	Leakage				2			
		E.	Ponding Water						N/A	
		F.	Roof Drainage			3				
		G.	Gutters / Downspouts						N/A	
		H.	Roof Vents						N/A	
	NOTES	2.4.D: Roofing leaks at various F series hangars during the rainy season.								
3	**Structure**									**2.8**
	3.1	Foundation/ Footing								2.0
	3.2	Columns								3.0
	3.3	Framing System								3.0
	3.4	Walls								3.0
	3.5	Lateral Force Resistance System								3.0
	3.6	Covered Walkway/Canopy								N/A
	3.7	Chimney								N/A
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**3.0**
	4.1	Ceilings								3.0
		A.	Suspended Ceiling (ACT)						N/A	
		B.	Gypsum Board						N/A	
		C.	Plaster						N/A	
		D.	Wood						N/A	
		E.	Other						N/A	
		F.	Exposed			3				
	4.2	Flooring								3.0
		A.	Carpet						N/A	
		B.	Vinyl						N/A	
		C.	Tile						N/A	
		D.	Wood						N/A	
		E.	Concrete			3				
	4.3	Interior Wall/Partition Finishes								3.0
	4.4	Interior Doors								N/A
	4.5	Stairs Condition								N/A
		A.	Stairs/ Landing						N/A	
		B.	Handrails						N/A	
	4.6	Toilet Condition								N/A
		A.	Toilet Accessories						N/A	
		B.	Toilet Partitions						N/A	
		C.	Water Closets						N/A	
		D.	Urinals						N/A	
		E.	Lavatorie /Sinks						N/A	
		F.	Counter						N/A	
		G.	Shower Compartments						N/A	
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**2.1**
	5.1	Mechanical Systems								N/A
		A.	HVAC						N/A	
		B.	Control System						N/A	
		C.	Chiller						N/A	
		D.	Cooling Towers						N/A	
		E.	Duct Work						N/A	
		F.	Ventilation\ Air Distribution						N/A	
		G.	Boilers						N/A	
	5.2	Electrical Systems								3.2
		A.	Transformer			3				
		B.	Switchgear			3				
		C.	Panelboards (Condition & Capacity)			3				
		D.	Devices (Switches & Receptacles)			3				
		E.	Interior Lighting Fixtures		4					
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System						N/A	
	5.3	Voice and Data Systems								N/A
	5.4	Plumbing Systems								1.0
		A.	Plumbing Fixtures						N/A	
		B.	Water Distribution System/ Pipes					1		
		C.	Water Heaters						N/A	
	5.5	Gas Distribution Systems								N/A
	5.6	Fire Suppression System								N/A
	N O T E S	5.4.B: Water leakage has been reported underground and may allude to cracked or broken utility piping.								

System				Condition		
				Compliance	Non-compliance	N/A
6	**ADA Compliance**					
	6.1	Site				
		A.	Accessible Parking Spaces		NC	
		B.	Passenger Loading Zones		NC	
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space		NC	
		B.	Doors/ Doorways/Gates		NC	
		C.	Threshold		NC	
		D.	Ramps			N/A
		E.	Stairways			N/A
		F.	Handrails			N/A
		G.	Elevators			N/A
	6.3	Toilet				
		A.	Clearances/Accessible Stall			N/A
		B.	Toilet Accessories			N/A
		C.	Water Closets			N/A
		D.	Urinals			N/A
		E.	Lavatories/ Sinks			N/A
		F.	Counters			N/A
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry			N/A
		B.	Furniture, Fixtures & Equipment - FF&E			N/A
		C.	Signage		NC	
	NOTES	6.1.A: ADA compliant parking spaces do not exist for hangers. 6.1.B: ADA compliant passenger loading zones do not exist for hangers. 6.2.A: Clear floor space is not provided at hangar interior. 6.2 B: Door operational controls are not ADA compliant. 6.2.C: Threshold at sliding door entrance to hangars is not ADA compliant. 6.4.C: Provide ADA compliant hangar signage with tactile text and Braille.				

Photo Documentation | Exterior Overall















Photo Documentation | Interior Blow Ups







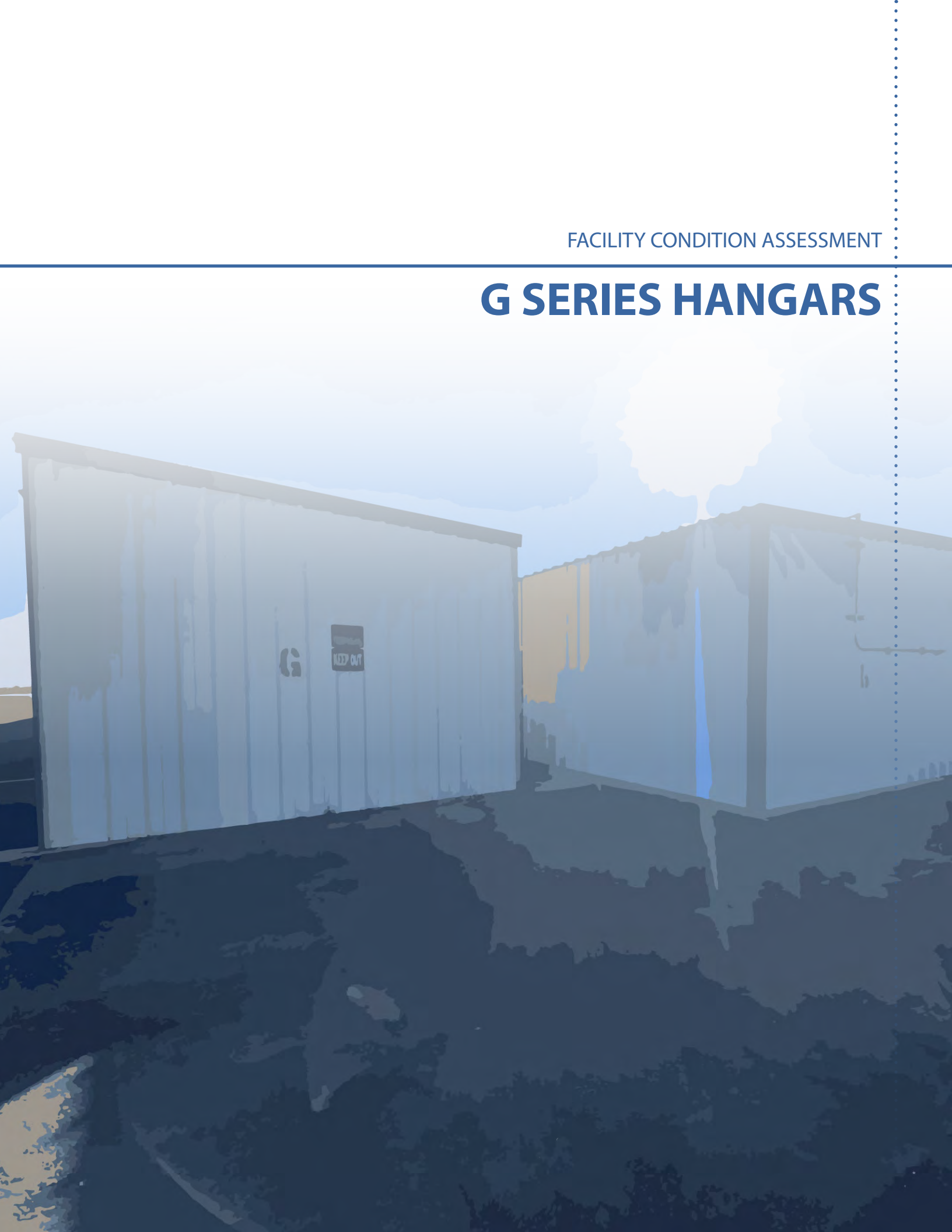







FACILITY CONDITION ASSESSMENT

G SERIES HANGARS



Condition Summary - G Series Hangars

Overall Rating **3.6**







Facility Condition

Site 3.8

Main electrical service for the 4 adjacent hangars (B, F, D and E Series) and the G series hangars is located on site and runs adjacent to the hangars. Fire extinguishers are provided at approximately every third hangar. Large exterior lighting poles are present each containing a trio of lights with remaining service life. Site pavement is in good condition overall with minimal cracking or wear. Drainage grates are rusted.

Exterior Envelope 3.3

Mechanical issues are present at exterior sliding door tracks. Sheet metal is weakening and lots of play is required for doors to release friction and begin moving. These doors generally move about due to wind and temperature changes. Some weatherproofing at door bases is bent out of plumb.

Structure 3.8

Exterior structure is visibly worn and maintenance staff and tenants report many problems with door operation which alludes to structural deterioration.

Interior 4.0

Interior is painted and not yet faded. Much staining is present from airplane fluid leakage or overspill at concrete flooring.

MEP Systems 3.2

An adjacent electrical and mechanical pump area contains mostly PG&E owned components. One small transformer belongs to the airport that is located in this area.

ADA Compliance Needs Compliance

Door tracks act as thresholds that are not ADA compliant.

Recommendation Summary - G Series Hangars


Exterior



Hangar


Weather Protection

Recommendations

Site: No site recommendations.

Exterior Envelope: Recommendations include repairing mechanical issues within exterior sliding door tracks, reinforcing sheet metal, and repairing weatherproofing at door base to be in plumb.

Structure: No structural recommendations.

Interior: Improvements should include cleaning stains on interior concrete flooring.

MEP Systems: No MEP recommendations.

ADA Compliance: Recommendations include clearing floor space to increase accessibility and modifying door threshold to be ADA compliant.

Impact of Recommended Works

Site: No impact of recommended works.

Exterior Envelope: Impact of recommended actions include disturbed access to the hangar. One week will be required to complete recommendations.

Structure: No impact of recommended works.

Interior: Executing recommended improvements will have a minor impact on the hangars; one week will be required to clean stains on flooring and some hangers may be required to be vacated.

MEP Systems: No impact of recommended works.

ADA Compliance: Impact of recommendations will result in increased accessibility within hangars and will require one week to clear out floor space. Changes to threshold will likely require more significant design and may be applied to a smaller number of hangers designated as accessible.

Facility Description - G Series Hangars


Exterior


Interior


MEP

Building Description

The G Series Hangars are metal buildings used to rent out space to pilots from the Tracy Municipal Airport. The exterior siding and roof construction is metal with steel interior structural supports and a concrete foundation. The G Series Hangars are the moderately priced hangars with interior square footage of approximately 875 SF.

Age

The G Series Hangars are 29 years old and were constructed in 1993.

Use of Building

The building is used in the following ways:

- Houses storage space for airplanes and other aviation related items
- Houses some storage space for the Tracy Municipal Airport

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
G Series Hangars - Overall										**3.6**
1	**Site/ Civil/ Landscape**									**3.8**
	1.1	Fences/ Walls/ Gates								N/A
		A.	Perimeter Fencing						N/A	
		B.	Equipment Fencing						N/A	
		C.	Landscape Walls/ Piers / Structures						N/A	
		D.	Gates						N/A	
	1.2	Paving								4.0
		A.	Sidewalks/ Walkways/ Crosswalks						N/A	
		B.	Curbing						N/A	
		C.	Driveways/ Parking Pavement		4					
		D.	Striping/ Marking/ Speed Bumps		4					
		E.	Patios						N/A	
	1.3	Landscape								N/A
		A.	Ground Cover						N/A	
		B.	Trees						N/A	
		C.	Irrigation System						N/A	
	1.4	Site Features/ Fixtures/ Furniture/ Signage								3.5
		A.	Landscape Features/ Play Equipment						N/A	
		B.	Exterior Lighting Fixtures			3				
		C.	Water Fixtures						N/A	
		D.	Exterior Site Furniture						N/A	
		E.	Site Utility		4					
	1.5	Stormwater Management								4.0
	NOTES									

	System			Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**3.3**
	2.1	Exterior Wall Finish								3.0
	2.2	Eaves and Fascias								3.0
	2.3	Doors/ Windows/ Louvers								3.0
		A.	Windows						N/A	
		B.	Louvers and Vents						N/A	
		C.	Exterior Doors & Hardware			3				
	2.4	Roofing								4.0
		A.	Roof Surface		4					
		B.	Roof Opening/ Skylight/ Penetrations		4					
		C.	Roof Equipment Curbing						N/A	
		D.	Leakage						N/A	
		E.	Ponding Water						N/A	
		F.	Roof Drainage						N/A	
		G.	Gutters / Downspouts						N/A	
		H.	Roof Vents						N/A	
	NOTES									
3	**Structure**									**3.8**
	3.1	Foundation/ Footing								3.0
	3.2	Columns								4.0
	3.3	Framing System								4.0
	3.4	Walls								4.0
	3.5	Lateral Force Resistance System								4.0
	3.6	Covered Walkway/Canopy								N/A
	3.7	Chimney								N/A
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**4.0**
	4.1	Ceilings								5.0
		A.	Suspended Ceiling (ACT)						N/A	
		B.	Gypsum Board						N/A	
		C.	Plaster						N/A	
		D.	Wood						N/A	
		E.	Other						N/A	
		F.	Exposed	5						
	4.2	Flooring								3.0
		A.	Carpet						N/A	
		B.	Vinyl						N/A	
		C.	Tile						N/A	
		D.	Wood						N/A	
		E.	Concrete			3				
	4.3	Interior Wall/Partition Finishes								4.0
	4.4	Interior Doors								N/A
	4.5	Stairs Condition								N/A
		A.	Stairs/ Landing						N/A	
		B.	Handrails						N/A	
	4.6	Toilet Condition								N/A
		A.	Toilet Accessories						N/A	
		B.	Toilet Partitions						N/A	
		C.	Water Closets						N/A	
		D.	Urinals						N/A	
		E.	Lavatorie /Sinks						N/A	
		F.	Counter						N/A	
		G.	Shower Compartments						N/A	
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**3.2**
	5.1	Mechanical Systems								N/A
		A.	HVAC						N/A	
		B.	Control System						N/A	
		C.	Chiller						N/A	
		D.	Cooling Towers						N/A	
		E.	Duct Work						N/A	
		F.	Ventilation\ Air Distribution						N/A	
		G.	Boilers						N/A	
	5.2	Electrical Systems								3.2
		A.	Transformer			3				
		B.	Switchgear			3				
		C.	Panelboards (Condition & Capacity)			3				
		D.	Devices (Switches & Receptacles)			3				
		E.	Interior Lighting Fixtures		4					
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System						N/A	
	5.3	Voice and Data Systems								N/A
	5.4	Plumbing Systems								N/A
		A.	Plumbing Fixtures						N/A	
		B.	Water Distribution System/ Pipes						N/A	
		C.	Water Heaters						N/A	
	5.5	Gas Distribution Systems								N/A
	5.6	Fire Suppression System								N/A
	N O T E S									

System				Condition		
				Compliance	Non-compliance	N/A
6	**ADA Compliance**					
	6.1	Site				
		A.	Accessible Parking Spaces		NC	
		B.	Passenger Loading Zones		NC	
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space		NC	
		B.	Doors/ Doorways/Gates	C		
		C.	Threshold		NC	
		D.	Ramps			N/A
		E.	Stairways			N/A
		F.	Handrails			N/A
		G.	Elevators			N/A
	6.3	Toilet				
		A.	Clearances/Accessible Stall			N/A
		B.	Toilet Accessories			N/A
		C.	Water Closets			N/A
		D.	Urinals			N/A
		E.	Lavatories/ Sinks			N/A
		F.	Counters			N/A
		G.	Shower Compartments			N/A
	6.4	Building Elements				
		A.	Cabinetry			N/A
		B.	Furniture, Fixtures & Equipment - FF&E		NC	
		C.	Signage		NC	
	NOTES	6.1.A: ADA compliant parking spaces do not exist for hangers. 6.1.B: ADA compliant passenger loading zones do not exist for hangers. 6.2.A: Clear floor space is not provided at hangar interior. 6.2.C: Threshold at sliding door entrance to hangars is not ADA compliant. 6.4.C: Provide ADA compliant hangar signage with tactile text and Braille.				

Photo Documentation | Exterior Overall

















Photo Documentation | Interior Blow Ups















FACILITY CONDITION ASSESSMENT

SKYVIEW AVIATION



Condition Summary - Skyview Aviation

Overall Rating **3.3**







Facility Condition

Site 3.3

A drain located adjacent to the main aircraft entrance to the hangar attempts to lessen water intrusion to the interior. Site drainage is reported to be less than ideal. Lettering is flaking off from exterior signage. An exterior transformer dedicated to fuel monitoring is located on site. Parking lot striping is faded throughout.

Exterior Envelope 2.6

The exterior metal siding is in fair condition with some areas rusted through with paint required. The roof has had reports of leaks over the last decade. Skylight panels are discolored and worn. The large sliding doors allowing aircrafts access o the hangar are on overly sized tracks that require excessive force to open and utilize.

Structure 3.3

Structural connections are in visibly fair condition, as they are rusty but contain intact protective coatings. Straps holding arch of structure at exterior must be tightened occasionally. Wood framing system contains rot in places due to water intrusion from leaking roof.

Interior 3.6

Some evidence of wood rot is present at hangar structure. Interior lighting is just adequate and could be modernized. Current tubes are fluorescent with some units out of discolored. Asphalt flooring is pitted in areas but generally works well for the operations of the facility. Flooring in administration and office areas differs throughout but is largely rolled carpeting in fair condition. Green carpet is original to the building. Previous mold issues present at interior asphalt has led to mildew prevention efforts. Windows are in good condition as double-paned glass has recently been installed. Ceilings are plaster in office areas and painted white. Hangar area has exposed wood and metal roof structure as ceiling.

MEP Systems 3.7

Heating and air conditioning equipment is largely located adjacent to the building in the parking lot. These units were intended to serve the office and administration areas but systems are no longer operational. Portable evaporative coolers are used in summer months.

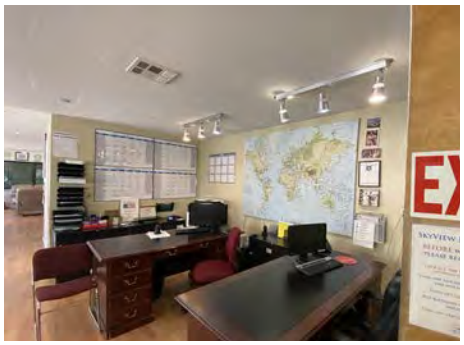
ADA Compliance **Needs Compliance**

Interior restrooms are not ADA compliant due to a multitude of violations related to dimensions and other items. Accessible parking space requires re-striping.

Recommendation Summary - Skyview Aviation



Exterior


Interior


Hangar Door

Recommendations

Site: Recommendations include eventually altering site drainage so water flows away from the building and repainting parking lot stalls.

Exterior Envelope: Recommendations include repainting exterior metal siding, replacing roof, replaying skylight panels, and properly sizing tracks for large sliding doors.

Structure: It is recommended to tighten the straps holding arch of structure at exterior and perform additional structural investigation including gate tracks.

Interior: It is recommended to repair hangar structure, modernize interior lighting, and improving the flooring within the administration and office areas.

MEP Systems: It is recommended to replace out-of-service HVAC units located on-site near parking area.

ADA Compliance: It is recommended to replace and relocate many toilet accessories.

Impact of Recommended Works

Site: Impact of site recommendations will slightly disturb access to the facility. Drainage improvements will likely require significant expense and be part of future airport improvements.

Exterior Envelope: Impacts of recommendations are minor and will result in improved physical appearance. Two weeks will be required to complete all recommendations.

Structure: Performing structural investigation should have minor impact on the building's operations. Repair will likely require portions of the facility to close for up to six weeks.

Interior: Executing recommended improvements should have some impact on the building's operations; completion of improvements will take four weeks.

MEP Systems: Replacement of HVAC units should have minor impact on facility operations and take one week to complete.

ADA Compliance: Performing the recommended improvements will have a minor impact on the building's operations. Toilet rooms will be temporarily closed and one week will be required to make appropriate adjustments.

Facility Description - Skyview Aviation


Exterior


Interior


MEP

Building Description

Skyview Aviation is a single story building that was constructed in 1955. It is located off of South Tracy Boulevard and is surrounded by flat lands. This hangar is not located near other rented hangars offered by the airport.

Skyview Aviation houses appropriate space and equipment for the services the facility offers including flight school and aviation training programs. The machinery and tools that are required to successfully hold classes and provide other services are available. The center services all of Northern California and international customers.

Age

The Skyview Aviation building is 67 years old and was constructed in 1955.

Use of Building

The building is used in the following ways:

- Provides flight training classes for domestic and international students
- Provides maintenance services for aircrafts
- Assist with buying, selling, and advertising aircraft or parts
- Dismantle and containerize aircraft and ship worldwide

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
Skyview Aviation - Overall										**3.2**
1	**Site/ Civil/ Landscape**									**3.3**
	1.1	Fences/ Walls/ Gates								4.0
		A.	Perimeter Fencing		4					
		B.	Equipment Fencing						N/A	
		C.	Landscape Walls/ Piers / Structures						N/A	
		D.	Gates		4					
	1.2	Paving								3.3
		A.	Sidewalks/ Walkways/ Crosswalks			3				
		B.	Curbing						N/A	
		C.	Driveways/ Parking Pavement		4					
		D.	Striping/ Marking/ Speed Bumps			3				
		E.	Patios			3				
	1.3	Landscape								N/A
		A.	Ground Cover						N/A	
		B.	Trees						N/A	
		C.	Irrigation System						N/A	
	1.4	Site Features/ Fixtures/ Furniture/ Signage								3.8
		A.	Landscape Features/ Play Equipment						N/A	
		B.	Exterior Lighting Fixtures			3				
		C.	Water Fixtures		4					
		D.	Exterior Site Furniture			3				
		E.	Site Utility	5						
	1.5	Stormwater Management								2.0
	N O T E S									

	System			Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**2.6**
	2.1	Exterior Wall Finish								3.0
	2.2	Eaves and Fascias								2.0
	2.3	Doors/ Windows/ Louvers								2.5
		A.	Windows			3				
		B.	Louvers and Vents						N/A	
		C.	Exterior Doors & Hardware				2			
	2.4	Roofing								2.8
		A.	Roof Surface			3				
		B.	Roof Opening/ Skylight/ Penetrations			3				
		C.	Roof Equipment Curbing						N/A	
		D.	Leakage					1		
		E.	Ponding Water						N/A	
		F.	Roof Drainage			3				
		G.	Gutters / Downspouts						N/A	
		H.	Roof Vents		4					
	N O T E S	2.3.C: Entrance door surface is scratched and painted and requires paint. Hangar doors do not operate appropriately and require a surprising amount of excessive force to open or close. 2.4.D: Leaks are reported at various areas of the roof throughout the rainy season.								
3	**C**									**3.2**
	3.1	Foundation/ Footing								3.0
	3.2	Columns								3.0
	3.3	Framing System								2.0
	3.4	Walls								4.0
	3.5	Lateral Force Resistance System								3.0
	3.6	Covered Walkway/Canopy								4.0
	3.7	Chimney								N/A
	N O T E S	3.3: Aspects of wood framing system contain rot due to water intrusion from leaking roof.								

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**3.6**
	4.1	Ceilings								3.5
		A.	Suspended Ceiling (ACT)						N/A	
		B.	Gypsum Board		4					
		C.	Plaster						N/A	
		D.	Wood						N/A	
		E.	Other						N/A	
		F.	Exposed			3				
	4.2	Flooring								3.7
		A.	Carpet		4					
		B.	Vinyl		4					
		C.	Tile						N/A	
		D.	Wood						N/A	
		E.	Concrete			3				
	4.3	Interior Wall/Partition Finishes								4.0
	4.4	Interior Doors								3.0
	4.5	Stairs Condition								N/A
		A.	Stairs/ Landing						N/A	
		B.	Handrails						N/A	
	4.6	Toilet Condition								4.0
		A.	Toilet Accessories		4					
		B.	Toilet Partitions						N/A	
		C.	Water Closets		4					
		D.	Urinals						N/A	
		E.	Lavatorie /Sinks		4					
		F.	Counter						N/A	
		G.	Shower Compartments						N/A	
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A
	NOTES									

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**3.6**
	5.1	Mechanical Systems								3.3
		A.	HVAC				2			
		B.	Control System		4					
		C.	Chiller						N/A	
		D.	Cooling Towers						N/A	
		E.	Duct Work		4					
		F.	Ventilation\ Air Distribution			3				
		G.	Boilers							
	5.2	Electrical Systems								3.5
		A.	Transformer			3				
		B.	Switchgear						N/A	
		C.	Panelboards (Condition & Capacity)		4					
		D.	Devices (Switches & Receptacles)			3				
		E.	Interior Lighting Fixtures		4					
		F.	Conveying Systems						N/A	
		G.	Fire Alarm System						N/A	
	5.3	Voice and Data Systems								4.0
	5.4	Plumbing Systems								3.7
		A.	Plumbing Fixtures		4					
		B.	Water Distribution System/ Pipes		4					
		C.	Water Heaters			3				
	5.5	Gas Distribution Systems								N/A
	5.6	Fire Suppression System								N/A
	N O T E S	5.1.A: Exterior HVAC units located on-site near parking area are not in service. Office area contains HVAC service but other areas do not.								

System				Condition		
				Compliance	Non-compliance	N/A
6	**ADA Compliance**					
	6.1	Site				
		A.	Accessible Parking Spaces	C		
		B.	Passenger Loading Zones			N/A
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space		NC	
		B.	Doors/ Doorways/Gates		NC	
		C.	Threshold		NC	
		D.	Ramps			N/A
		E.	Stairways			N/A
		F.	Handrails			N/A
		G.	Elevators			N/A
	6.3	Toilet				
		A.	Clearances/Accessible Stall		NC	
		B.	Toilet Accessories		NC	
		C.	Water Closets		NC	
		D.	Urinals		NC	
		E.	Lavatories/ Sinks		NC	
		F.	Counters		NC	
		G.	Shower Compartments		NC	
	6.4	Building Elements				
		A.	Cabinetry		NC	
		B.	Furniture, Fixtures & Equipment - FF&E		NC	
		C.	Signage		NC	
	NOTES	6.2.A: Walking surfaces and clear floor space throughout the facility are blocked with items and contains various thresholds. 6.2.B: Doors and gates contain non-compliant thresholds and side strike clearances. 6.2.C: Non-compliant thresholds are present throughout the facility and from hangar to airside space. 6.3.A-G: Interior restroom is not compliant due to multiple violations under multiple categories. 6.4.A: Provide knee and toe clearance under working surface and counters. 6.4.B: Provide ADA compliant furniture, fixtures and equipment with accessible height and knee and toe clearance. 6.4.C: Provide ADA compliant facility signage with tactile text and Braille.				

Photo Documentation | Exterior Overall

























Photo Documentation | Interior Blow Ups







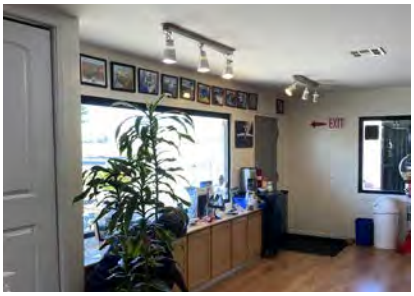


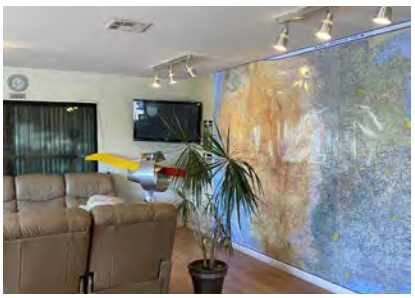
















FACILITY CONDITION ASSESSMENT

POLICE STATION



Condition Summary - Tracy Police Department

Overall Rating **3.3**







Facility Condition

Site 3.4

Site elements include multiple parking lots, landscaping, HVAC system components and cellular communications antennae. Curbing and walkways around entrance contain tire markings and other stains and require cleaning. Parking pavement is in fair condition with striping deterioration and cracking in places. Solar panels in gated south police parking lot are in good condition with minimal wear. Gate to access south lot contains rust and worn track and motor housing. Site lighting poles are contain discolored lenses and require paint. Vegetation is mostly healthy but some areas of open dirt remain. Lawn is well-kept and appears healthy and green. Building signage is present but faded and undersized especially at parking lots and adjacent building areas.

Exterior Envelope 3.6

The metal roof has been recently replaced and is in very good condition. The roof does require cleaning due to dust buildup. Gutters and downspouts are in fair condition with some rusted elements and with paint in various states of fade depending on individual gutter orientation and amount of sun received. Flag poles mounted to the exterior structure are in good condition with light paint flaking at bases. Windows including applied tint coat contain much remaining service life. The facility has faded paint in areas and repainting should be considered.

Structure 3.8

Visual structural deficiencies include cracking present at concrete flooring throughout the building. No other visual structural deficiencies were observed.

Interior 3.1

Door seals don't exist at the bottoms of some exterior doors allowing water and dust to enter the building. Square carpet tile throughout the building has been recently replaced with no signs of wear or discoloration. Paint is scuffed on interior walls and doors throughout at various amounts. Acoustic ceiling tiles are mostly in good condition but some large stains exist and damage is present around some areas that required rework due to replacement of head pumps in ceiling system. Much scuffing exists at working surface counters throughout the facility. Wood doors and counters are especially scratched and scuffed. Elevator cab is dim and requires new lighting and has a dirty threshold. Paint is flaking at the ceiling of the large holding cell. Interior fire glass requires replacement.

MEP Systems 2.7

Electrical switchgear is in good condition with remaining useful service life. Issues with the closed loop water system include water-sourced heat pumps that are failing at a quick rate. In total, the facility has 38 units and 8 have already been replaced with all requiring replacement. A 1000-gallon emergency diesel generator allows power to the building for 7 to 10 days in the event of normal power loss. This generator may require servicing but has no reported issues. A new fire alarm system including fire panel, smoke detector heads and fire alarm lighting were

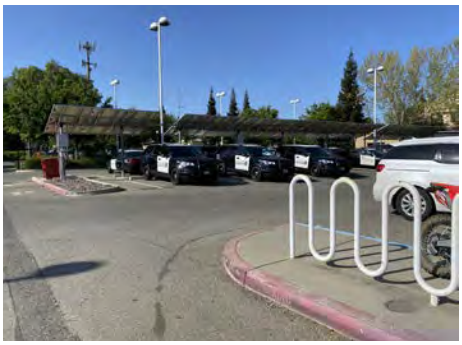
Condition Summary - Tracy Police Department

installed in 2021.

ADA Compliance **Needs Compliance**

Stairway handrails throughout the facility require 12" flat extensions at landings and at base. Drinking fountains are not ADA compliant due to protrusion. Locker room showers are not ADA compliant. Some compliance issues also exist related to ADA turnaround space at ADA stalls.

Recommendation Summary - Tracy Police Department


Exterior


Exterior


MEP

Recommendations

Site: Maintain solar panels as required. Pave and stripe parking lot areas. Maintain electronic locking gate at police lot accordingly. Provide new site lighting fixtures.

Exterior Envelope: Clean roof surface. Paint gutters and downspouts.

Structure: Continue to monitor state of building cracking and flooring cracking. Perform structural investigation if cracks continue to grow.

Interior: Provide door seals at bottoms of exterior doors that lack them, including in jail area. Paint interior walls throughout building. Replace stained ceiling tiles and investigate cause of staining.

MEP Systems: Investigate cause of ceiling tile stains, possibly from closed loop water system drainage pans located above ceiling. Provide new ceiling mounted heat pumps for same system. Maintain new fire alarm system as directed by manufacturer.

ADA Compliance: Provide ADA compliant stair handrails throughout the facility. Provide ADA compliant drinking fountains. Knee space is required below ADA counters. Break room modifications are required in areas. ADA parking stalls at police lot and public lots require revision including space for loading and new striping. ADA compliant showers are not provided in locker rooms.

Impact of Recommended Works

Site: Parking lot repavement will require relocation of police cars for the duration, estimated to be four weeks. New site lighting fixtures may require temporary barriers at entrance or around site areas with high foot traffic.

Exterior Envelope: Minimal impact to recommended works. Roof surface should be able to be cleaned in two days and gutters and downspouts painting will require a similar amount of time.

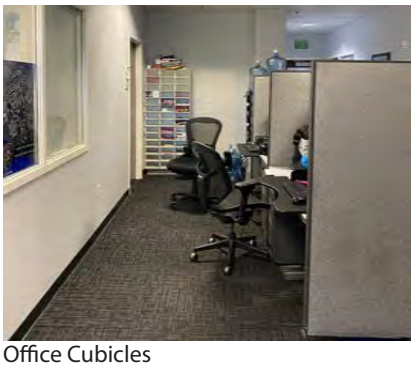
Structure: No impact of recommended works.

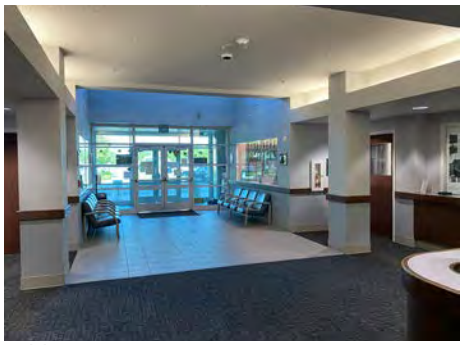
Interior: Some exterior doors including those at jail area may require additional security during installation of door seals. One week should be required to seal all doors lacking seals.

MEP Systems: Replacement of all ceiling mounted heat pumps is required to be completed in phases based on building location and staffing numbers. Some areas may be replaced more easily than others due to proximity around working areas, hallways, and other facility areas. Three months should be required to replace the 30 remaining heat pumps requiring replacement.

ADA Compliance: Facility stairways may require after-hours installation of new handrails. This should be completed in two to three days. Interior modifications related to ADA improvements require significant consideration and design and will take months to complete.

Facility Description - Tracy Police Department


Office Cubicles


Lobby


Locker Room

Building Description

The City of Tracy Police Department is a concrete and steel structured building located at the Civic Center Complex. The two-story facility is approximately 30,000 SF in area. There are multiple parking lots adjacent to the building including public parking lots on the north and south sides of the facility. A gated police lot separates the building from the public lot at the south side. Also housed in this facility is Tracy's Emergency Operations Center. The building is located at the Tracy Civic Center Complex and is directly across Civic Center Drive from City Hall.

Age

The Tracy Police Department is 28 years old and was constructed in 1994.

Use of Building

The building is used in the following ways:

- Main City of Tracy Police Station
- Houses storage space for evidence
- Houses emergency response communications center
- Houses City of Tracy Emergency Operations Center
- Houses Tracy Police radio communications equipment

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
Police Station - Overall										**3.3**
1	**Site/ Civil/ Landscape**									**3.4**
	1.1	Fences/ Walls/ Gates								3.3
		A.	Perimeter Fencing		4					
		B.	Equipment Fencing			3				
		C.	Landscape Walls/ Piers / Structures						N/A	
		D.	Gates			3				
	1.2	Paving								3.0
		A.	Sidewalks/ Walkways/ Crosswalks		4					
		B.	Curbing				2			
		C.	Driveways/ Parking Pavement			3				
		D.	Striping/ Marking/ Speed Bumps			3				
		E.	Patios						N/A	
	1.3	Landscape								3.7
		A.	Ground Cover			3				
		B.	Trees		4					
		C.	Irrigation System		4					
	1.4	Site Features/ Fixtures/ Furniture/ Signage								3.0
		A.	Landscape Features/ Play Equipment						N/A	
		B.	Exterior Lighting Fixtures				2			
		C.	Water Fixtures			3				
		D.	Exterior Site Furniture						N/A	
		E.	Site Utility		4					
	1.5	Stormwater Management								4.0
	N O T E S	1.2.B: Curbing adjacent to main entrance contains scuffing and tire marks. 1.4.B: Exterior lighting fixtures at the site are contain discolored lenses and are otherwise dirty.								

	System			Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
2	**Exterior Envelope**									**3.6**
	2.1	Exterior Wall Finish								3.0
	2.2	Eaves and Fascias								4.0
	2.3	Doors/ Windows/ Louvers								3.3
		A.	Windows		4					
		B.	Louvers and Vents			3				
		C.	Exterior Doors & Hardware			3				
	2.4	Roofing								4.0
		A.	Roof Surface		4					
		B.	Roof Opening/ Skylight/ Penetrations						N/A	
		C.	Roof Equipment Curbing						N/A	
		D.	Leakage	5						
		E.	Ponding Water						N/A	
		F.	Roof Drainage		4					
		G.	Gutters / Downspouts			3				
		H.	Roof Vents						N/A	
	N O T E S									
3	**Structure**									**3.8**
	3.1	Foundation/ Footing								3.0
	3.2	Columns								N/A
	3.3	Framing System								4.0
	3.4	Walls								4.0
	3.5	Lateral Force Resistance System								4.0
	3.6	Covered Walkway/Canopy								4.0
	3.7	Chimney								N/A
	N O T E S									

			System	Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
4	**Interior Elements**									**3.1**
	4.1	Ceilings								3.3
		A.	Suspended Ceiling (ACT)				2			
		B.	Gypsum Board		4					
		C.	Plaster		4					
		D.	Wood						N/A	
		E.	Other						N/A	
		F.	Exposed						N/A	
	4.2	Flooring								2.8
		A.	Carpet		4					
		B.	Vinyl				2			
		C.	Tile			3				
		D.	Wood						N/A	
		E.	Concrete				2			
	4.3	Interior Wall/Partition Finishes								3.0
	4.4	Interior Doors								2.0
	4.5	Stairs Condition								4.0
		A.	Stairs/ Landing		4					
		B.	Handrails		4					
	4.6	Toilet Condition								3.3
		A.	Toilet Accessories			3				
		B.	Toilet Partitions		4					
		C.	Water Closets		4					
		D.	Urinals		4					
		E.	Lavatorie /Sinks			3				
		F.	Counter			3				
		G.	Shower Compartments				2			
	4.7	Hazmat								N/A
	4.8	Room Capacity								N/A

N O T E S

4.1.A: A selection of suspended ceiling tiles contain signs of ceiling leakage.
4.2.B: Vinyl flooring throughout the facility is scuffed, scratched and misaligned in areas.
4.2.E: Concrete floors are cracked and deteriorating especially in jail area.
4.6.G: Shower compartments throughout the facility require updates.

System				Condition						
				Excellent	Good	Fair	Poor	Critical	N/A	Rank
				5	4	3	2	1		
5	**Mechanical, Electrical and Plumbing Systems**									**2.7**
	5.1	Mechanical Systems								2.2
		A.	HVAC					1		
		B.	Control System			3				
		C.	Chiller						N/A	
		D.	Cooling Towers						N/A	
		E.	Duct Work			3				
		F.	Ventilation\ Air Distribution				2			
		G.	Boilers				2			
	5.2	Electrical Systems								3.9
		A.	Transformer		4					
		B.	Switchgear		4					
		C.	Panelboards (Condition & Capacity)		4					
		D.	Devices (Switches & Receptacles)		4					
		E.	Interior Lighting Fixtures			3				
		F.	Conveying Systems			3				
		G.	Fire Alarm System	5						
	5.3	Voice and Data Systems								2.0
	5.4	Plumbing Systems								2.3
		A.	Plumbing Fixtures				2			
		B.	Water Distribution System/ Pipes				2			
		C.	Water Heaters			3				
	5.5	Gas Distribution Systems								N/A
	5.6	Fire Suppression System								3.0

N O T E S

5.1.A: HVAC system contains ceiling-mounted heat pumps that are failing and must be replaced frequently.
5.1.F: Air return vents are dirty and central vacuum system is unused.
5.1.G: Boiler is original to the building and requires occasional maintenance.
5.4.A-B: There is a reported issue with sludge buildup in the plumbing system from hand washing and showers that requires clean out of the piping system occasionally.

System				Condition		
				Compliance	Non-compliance	N/A
6	**ADA Compliance**					
	6.1	Site				
		A.	Accessible Parking Spaces		NC	
		B.	Passenger Loading Zones			N/A
	6.2	Accessible Routes				
		A.	Walking Surfaces/Clear Floor Space		NC	
		B.	Doors/ Doorways/Gates	C		
		C.	Threshold	C		
		D.	Ramps			N/A
		E.	Stairways		NC	
		F.	Handrails		NC	
		G.	Elevators	C		
	6.3	Toilet				
		A.	Clearances/Accessible Stall		NC	
		B.	Toilet Accessories	C		
		C.	Water Closets	C		
		D.	Urinals	C		
		E.	Lavatories/ Sinks	C		
		F.	Counters	C		
		G.	Shower Compartments		NC	
	6.4	Building Elements				
		A.	Cabinetry		NC	
		B.	Furniture, Fixtures & Equipment - FF&E		NC	
		C.	Signage		NC	

N O T E S

6.1.A: Accessible parking spaces require loading zones, striping and/or truncated domes.
6.2.A: Remove obstacles on accessible routes for enough open space clearance.
6.2.C: Some interior thresholds are not compliant.
6.2.E-F: Interior stairs do not contain flat handrail surfaces at landings.
6.3.A: Proper ADA turnaround space is not provided in some accessible stalls.
6.3.G: Shower compartments in locker rooms do not contain turnaround spaces and have other violations.
6.4.A: Provide knee and toe clearances under working surfaces, and front desk.
6.4.B: Provide ADA compliant furniture, fixtures and equipment with accessible height and knee and toe clearances.
6.4.C: Provide ADA compliant room signage with tactile text and Braille. Provide ADA compliant toilet room signage.

Photo Documentation | Exterior Overall











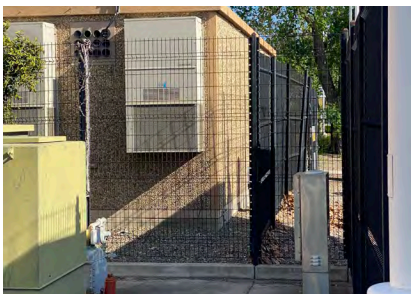
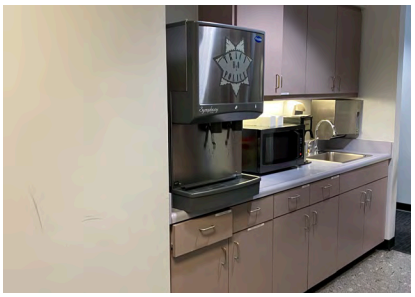
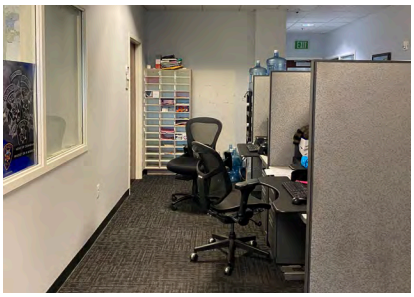
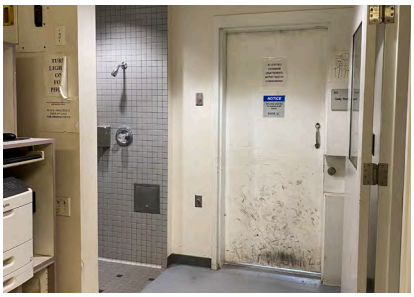
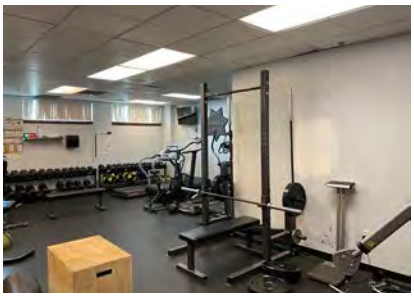
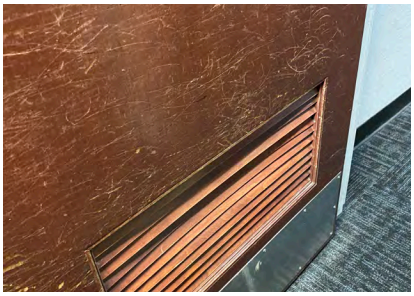
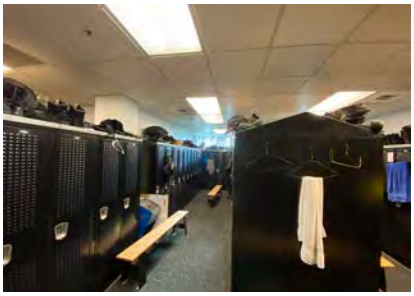
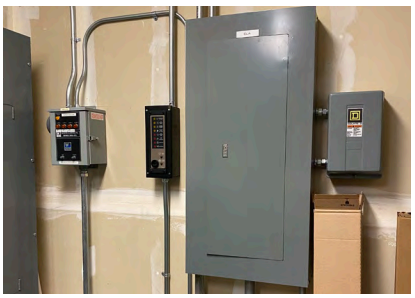
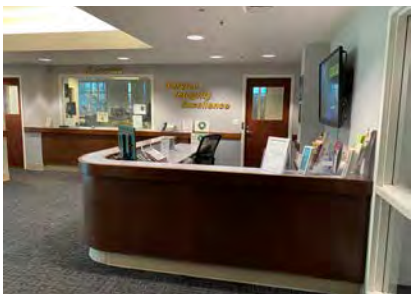



Photo Documentation | Interior Blow Ups




III. DEPARTMENTS - STAFF, SPACE ANALYSIS AND PROGRAMMING

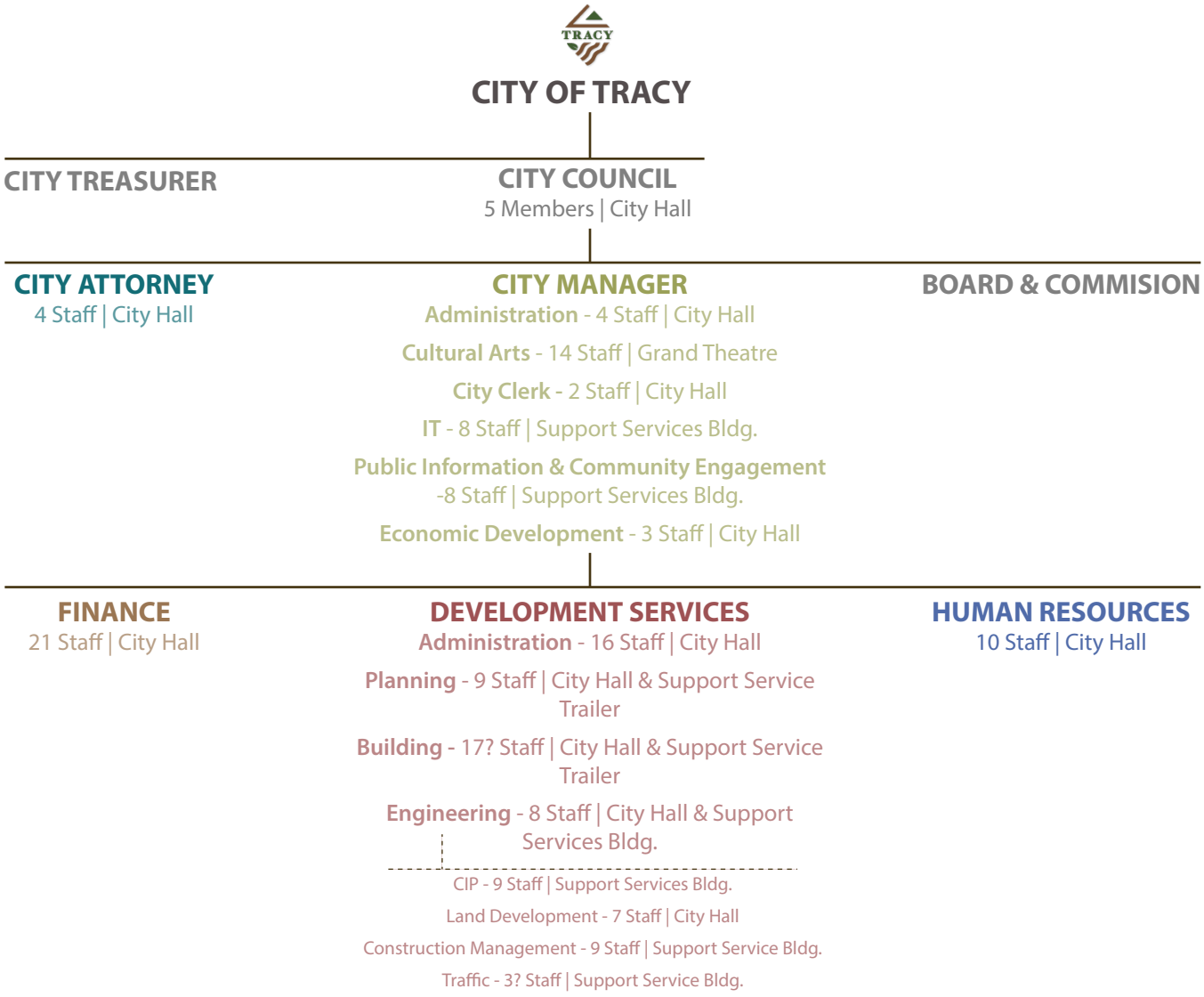
a. City of Tracy Organization Overview 354

b. Staff and Space Need Projections 357

c. Department Distribution by Facility 362

d. Department Information and Occupied Area 367

City Organizational Chart



Note: **Operations & Utilities** (Previously separate departments of Public Works Department & Utility Department - Effective July 2022

City Departments Overview

The chart below shows current and projected staffing and space allocations organized by City departments

Department	Staff		Current Facility			Planning	
Division	Existing Total	Future Total	Facility Name	Address	Space Size (SF)	Space Size (SF) Minimal	Comments / Location
City Attorney's Office	**4**	**4**			**2,075**	**2,075**	
	4	4	City Hall:	333 Civic Center Plaza	2,075	2,075	Maintain current space at City Hall
City Manger's Office	**51**	**57**			**7,494**	**7,308**	
Administration	14	14	City Hall	333 Civic Center Plaza	1,632	1,632	Remodel and rearrange existing space
Cultural Arts	14	15	The Grand Theatre	715 Central Ave.	1,206	1,400	Remodel existing space (especially Box Office)
Clerk	2	2	City Hall	333 Civic Center Plaza	373	373	Remodel and rearrange existing space
IT	8	10	Support Services Bldg.	325 Civic Center Plaza	1,748	1,800	Move to new Administration Building
Public Information & Community Engagement	10	12	City Hall & Police Annex	333 Civic Center Plaza	2,228	1,638	Maintain current locations at CMO's office and Police Annex
Economic Development	3	4	City Hall	333 Civic Center Plaza	307	465	Remodel and rearrange existing space
Development	**69**	**81**			**9,139**	**12,642**	
Administration	16	18	City Hall & Support Services Building	333 Civic Center Plaza	1,010	2,160	Remodel and rearrange existing space
Planning	9	10	City Hall & Support Service Trailer	333 Civic Center Plaza	1,657	1,875	Remodel and rearrange existing space. Move all to City Hall.
Building	16	17	City Hall & Support Service Trailer	333 Civic Center Plaza	1,984	1,932	Move to Administration Building
Engineering	28	36			4,488	6,675	
CIP	9	10	Support Services Bldg	325 Civic Center Plaza	1,651	2,500	Move to Administration Building
Land Development	7	9	City Hall	333 Civic Center Plaza	426	675	Move to Administration Building
Construction Mangement	9	14	Support Services Bldg	325 Civic Center Plaza	2,168	3,000	Move to Administration Building
Traffic	3	3	Support Services Bldg	325 Civic Center Plaza	243	500	Move to Administration Building

City Departments Overview (Continued)

Department	Staff		Current Facility			Planning	
Division	Existing Total	Future Total	Facility Name	Address	Space Size (SF)	Space Size (SF) Minimal	Comments / Location
Finance	**21**	**24**			**4,373**	**4,373**	
Finance	21	24	City Hall	333 Civic Center Plaza	4,373	4,373	Maintain current space at City Hall
Human Resources	**10**	**10**			**3,695**	**3,695**	
Human Resources	10	10	City Hall	333 Civic Center Plaza	3,695	3,695	Maintain current space at City Hall with light improvements
Operations & Utilities	**122**	**150**			**See Below**	**See Bleow**	
Operations & Utilities	122	150	Boyd Service Center & Water Operations Facilities	520 S Tracy Blvd; 3900 Holly Drive; 6649 S Tracy Blvd	Site: 331,200 sf Facilities: 29,900 sf	Site: 500,000 sf Facilities: 60,000 sf	Renovate Boyd Service Center. Build auxiliary facility to be shared with Transit. *Utilities Plan Not in Project
	11		Admin Office		6,000		
	4		Fleet Services		4,590		
	49		Maintenance Shop '1'		4,991		
	29		Maintenance Shop '2'		3,888		
Parks & Recreation	**18**	**22**			**3,116**	**7,350**	
Administration	2	2					
Airport	2	3	Tracy Airport	Durham Ferry Rd	800	0	Remodel existing space
Transit	3	4	Transit Station	50 E. 6th St	250	600	Transit Center Renovation Bus Maintenance & Storage Facility
Community & Recreation	10 (plus 46 part-time)	12 (plus 46 part-time)	City Hall, Senior Center & Community Center	333 Civic Center Plaza	2,066	6,750	Move all staff to new Admin Building
Parks Planning & Development	1	1					
Fire Department							**In a separate report**
Police Department							**In a separate report**

Staff and Space Need Projections

Staff projections provide an intermediate step in the development of an organization's space needs. There are a number of methods for projecting staffing at build out. The method used here is to project staffing based on the staffing of six other cities that are geographically and demographically similar to the community at Horizon Year 2040.

Growth Factors

The staff levels of the six cities, and current the City of Tracy are shown in chart below. As would be expected, increases in City staff generally correspond to increases in population, ranging from a low of 227 City staff in Hesperia to a high of 2,011 City staff in Santa Barbara. For Tracy, the proposed staffing from the FY 2020-21 draft budget and information gathered from staff survey were used as the baseline.

A line of best fit was calculated for the data (see figure below), and the slope and intercept of the line was used to project the overall number of staff at the build-out population:
Staff = 0.0013 X Population + 500

Tracy at Horizon Year 2040 population is projected to be 141,341. The formula projects a total of 683 staff at build-out. This projection will be used as reference only. The data gathered from each department overrules the number calculated by growth factor.

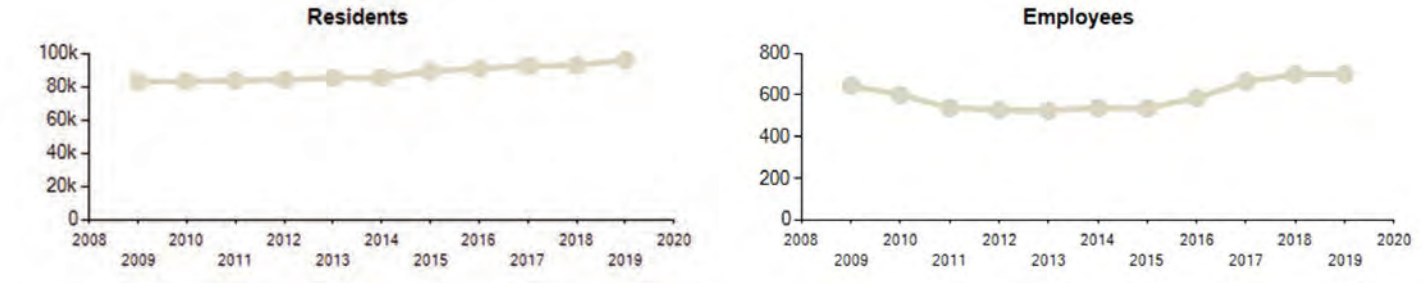


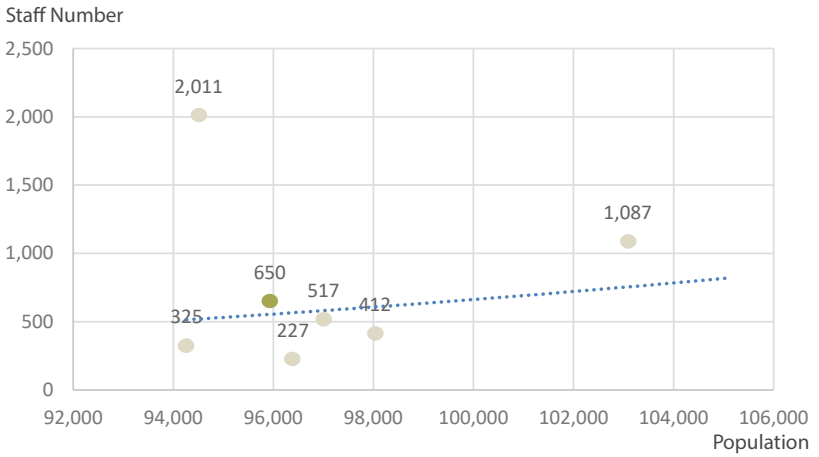
Figure 1 - Tracy Population and Staffing Trend - 2009 to 2019

City Staff Growth Projection

Space projections were developed on a line-item basis using the staffing projections, reviews of existing space and plans, and spaces that are normal and customary for public facilities. The need and space projections for library and aquatic facilities come from the results of other separately conducted studies.

Subtotals of gross space are provided for each department with estimates of "departmental" space, with allowances for internal circulation, columns, etc. Gross building area is provided by use of an efficiency factor that provides allowances for exterior building walls, vertical circulation elements, primary circulation, public toilets, and mechanical rooms. See section IV. Space Standards and Guideline, a. Space & Facility Standards for details.

City	Population	Staff Number
San Mateo	103,087	1,087
Compton	98,032	412
South Gate	97,003	517
Hesperia	96,393	227
Tracy	**95,931**	**650**
Mission Viejo	94,267	325
Santa Barbara	94,511	2,011



Department Staff and Space Needs Projection

A detailed comparison of each City department staffing in similar sized cities are provided next page. This figure is developed with reference to the organizational charts for each department. Each staff position was categorized as fixed or variable. Typically, upper management positions, such as the director, are fixed, in that a department would only have one director, regardless of the number of staff. Other positions, such as technicians, are variable in that the number of technicians would be likely to change over time as the population of the City increases. This estimate excludes police fire and utility departments, which were projected separately.

Department	Staff		Current Space Size (SF)	Planning Space Size (SF)
	Existing Total	Future Total		
City Attorney's Office	4	4	2,075	2,075
City Manager's Office	51	57	7,494	7,308
Development Services	69	81	9,139	12,642
Finance	21	24	4,373	4,373
Human Resources	10	10	3,695	3,695
Operations & Utilities	122	150	Site: 331,200 sf Facilities: 29,900 sf	Site: 500,000 sf Facilities: 60,000 sf
Parks & Recreation	18	22	3,116	7,350

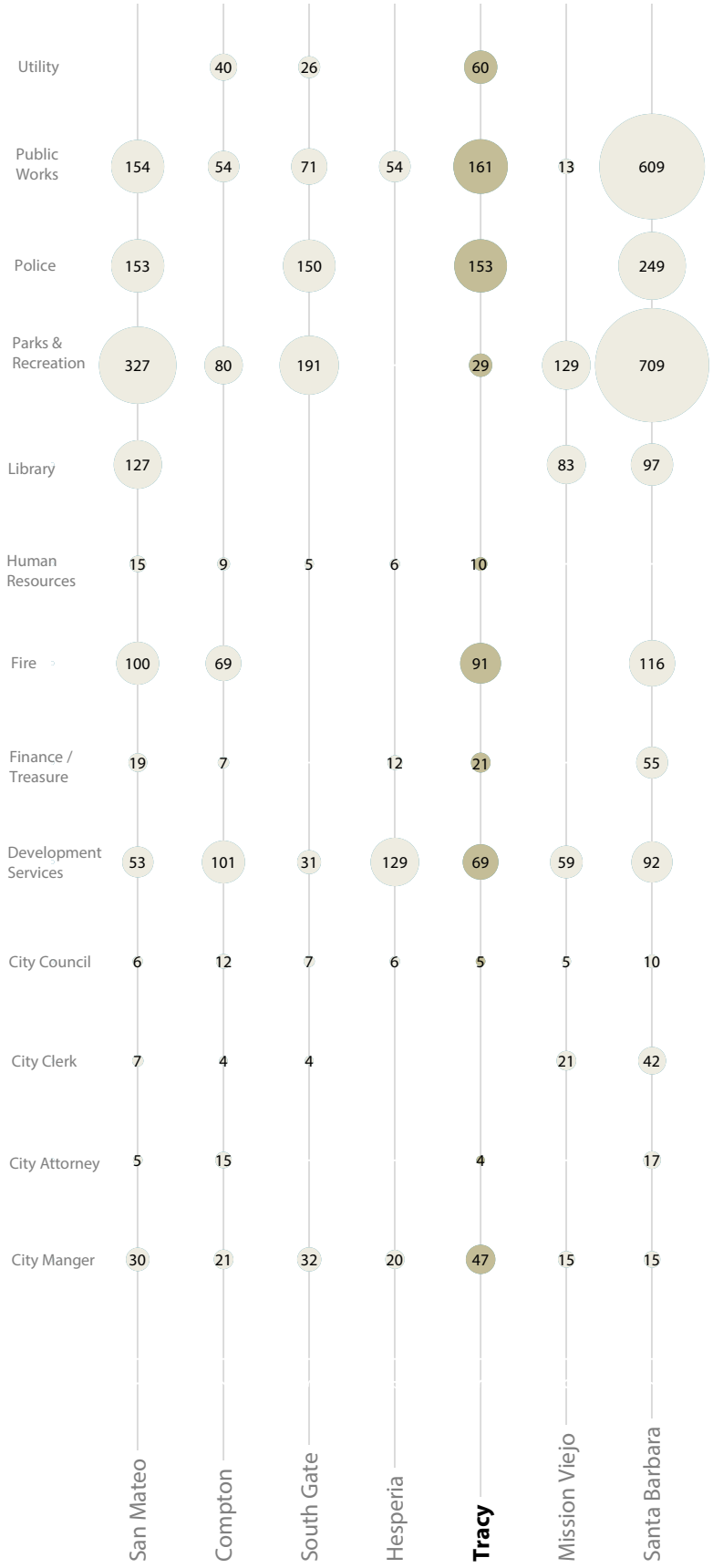
Figure 3 - Summary of Staff and Space Needs Projection

Finding from the "Similar Sized Cities Comparison - City Employees" and "Similar Sized Cities Comparison - Population and City Employees" are:

- Staffing in Tracy Park and Recreation department is relatively lacking in comparison with other similar sized cities.
- Tracy City Manger Department is larger than other similar sized cities.
- Tracy Development Service Department is relatively small comparing to other similar sized cities.

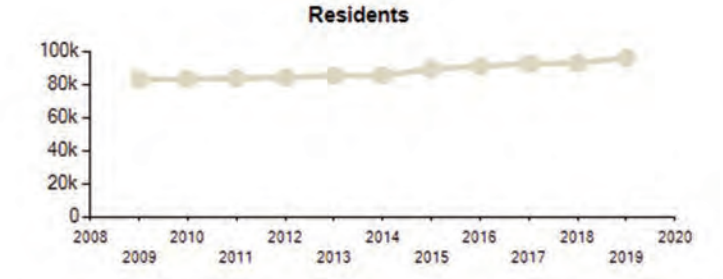
Similar Sized Cities Comparison - City Employees

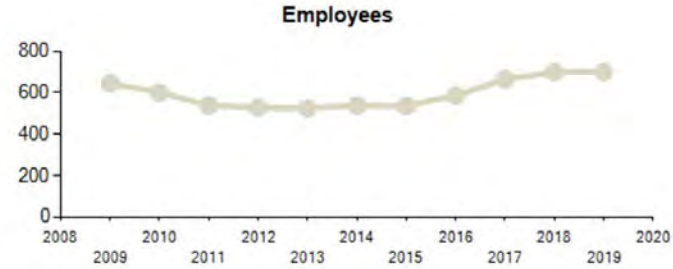
City	County	Pop.	City Employees by Department: Total	Utility	Public Works (Operations & Utilities)	Police	Parks & Recreation	Library	Human Resources	Fire	Finance / Treasure	Development Services	City Council	City Clerk	City Attorney	City Manger
San Mateo	San Mateo	103,087	1,087		154	244	327	127	15	100	19	53	6	7	5	30
Compton	Los Angeles	98,032	412	40	54		80		9	69	7	101	12	4	15	21
South Gate	Los Angeles	97,003	517	26	71	150	191		5			31	7	4		32
Hesperia	San Bernardino	96,393	227		54				6		12	129	6			20
Tracy	**San Joaquin**	**95,931**	**650**	**60**	**161**	**153**	**29**		**10**	**91**	**21**	**69**	**5**		**4**	**47**
Mission Viejo	Orange	94,267	325		13		129	83				59	5	21		15
Santa Barbara	Santa Barbara	94,511	2,011		609	249	709	97		116	55	92	10	42	17	15



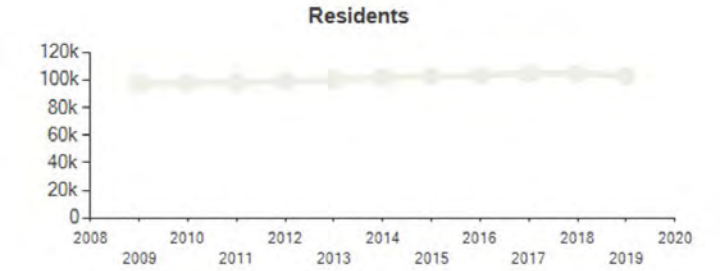
Similar Sized Cities Comparison - Population and City Employees

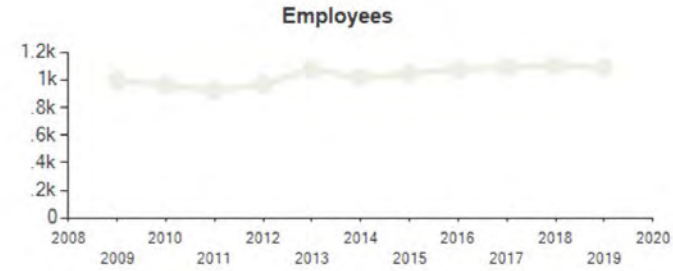
Tracy



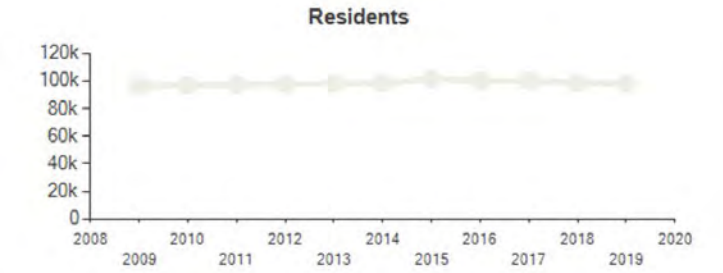


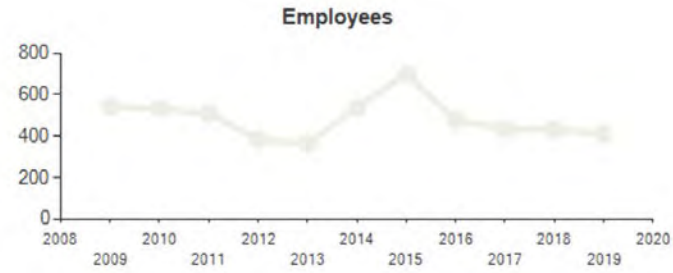
San Mateo



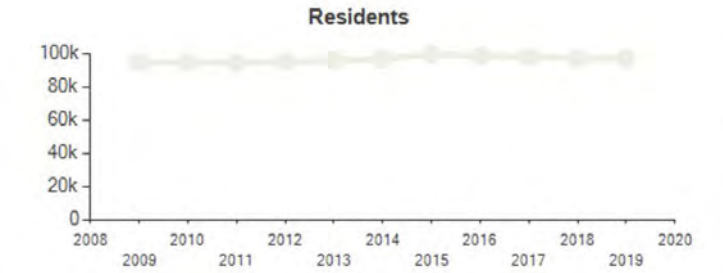


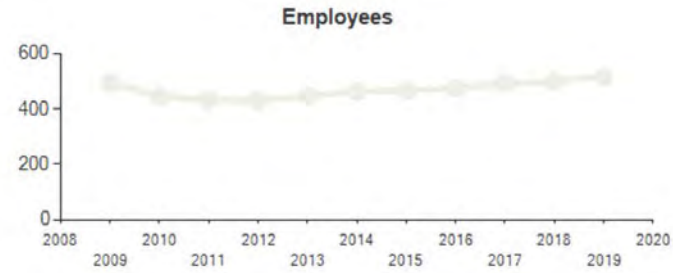
Compton





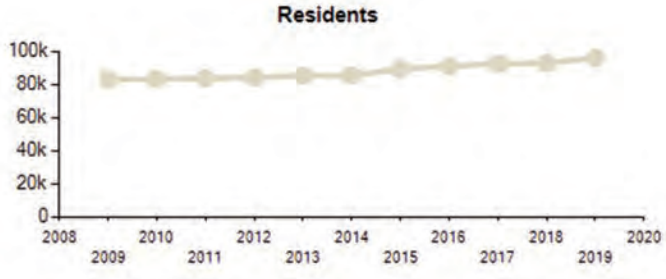
South Gate

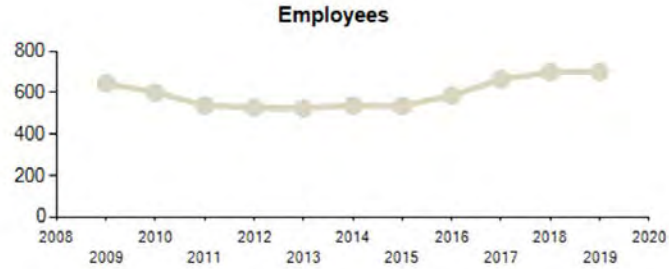




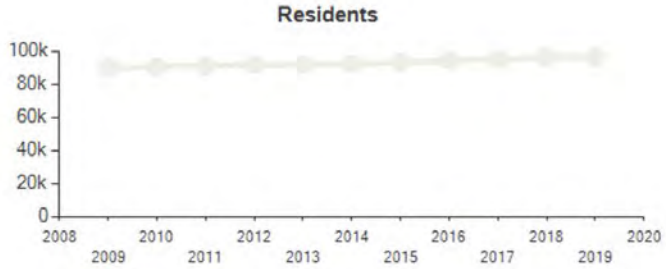
Similar Sized Cities Comparison - Population and City Employees (Continued)

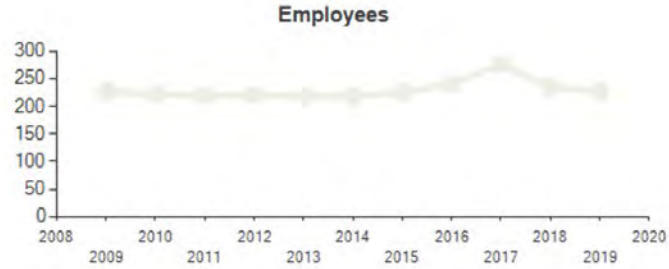
Tracy



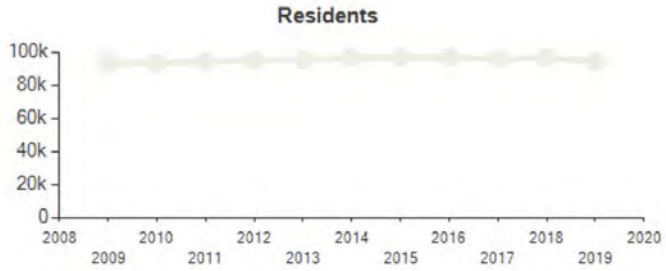


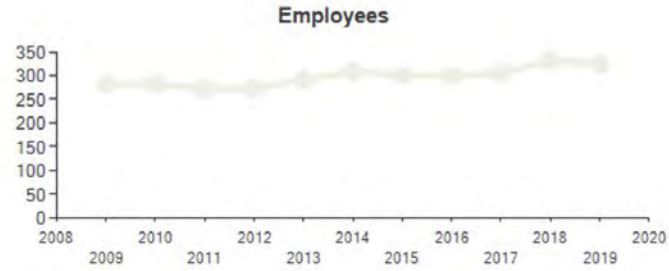
Hesperia



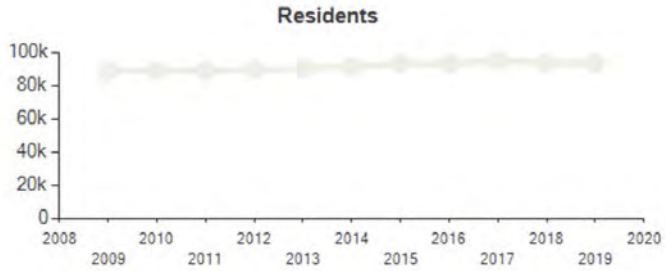


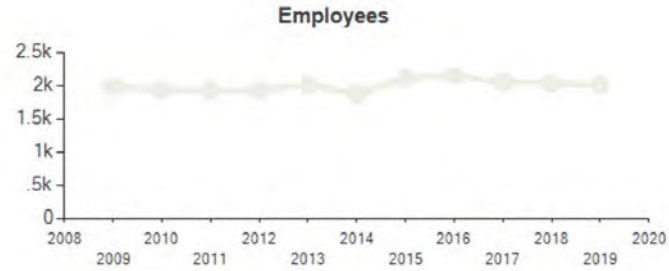
Mission Viejo





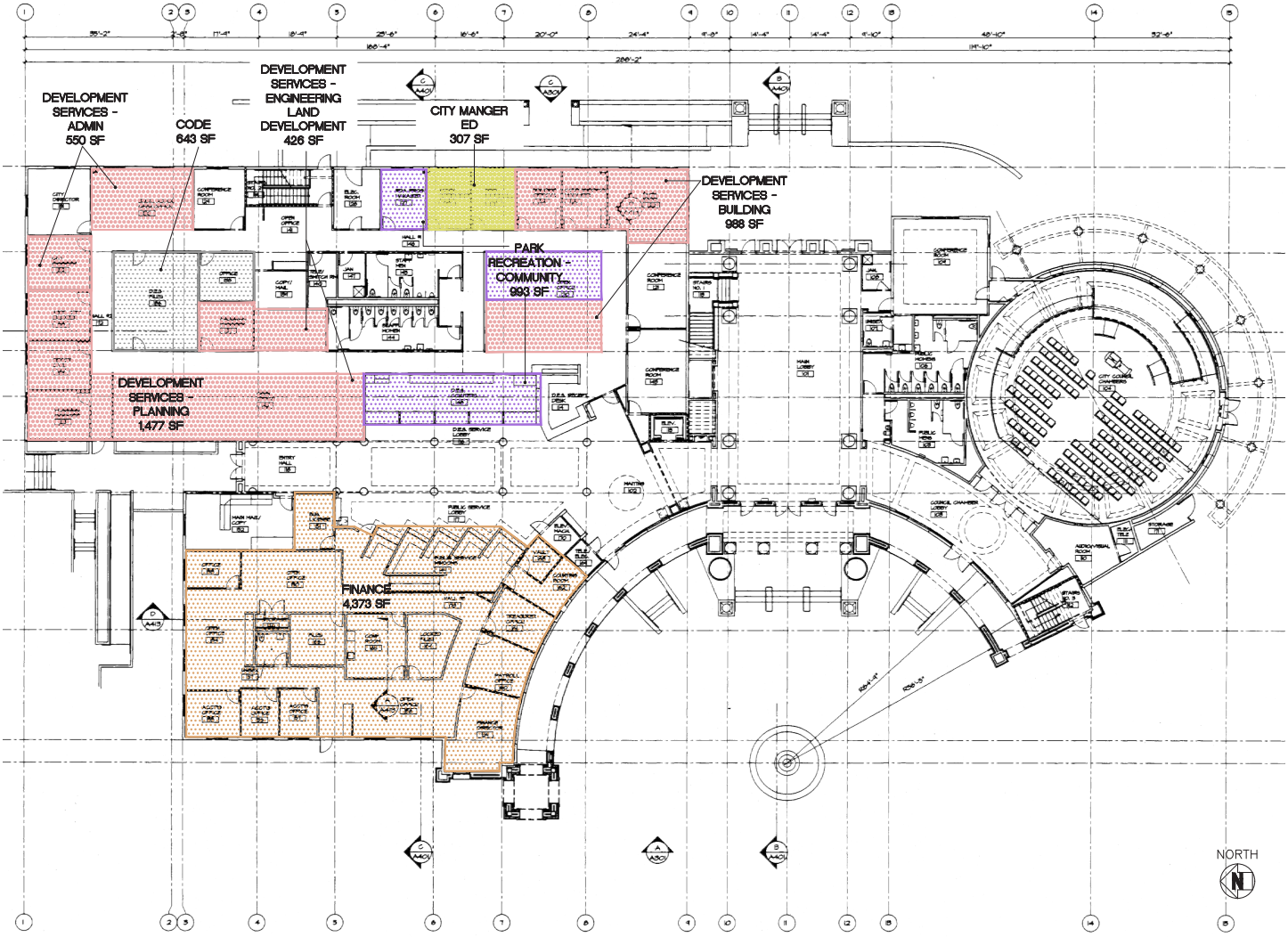
Santa Barbara





Summary of Existing Department Distribution by Facility

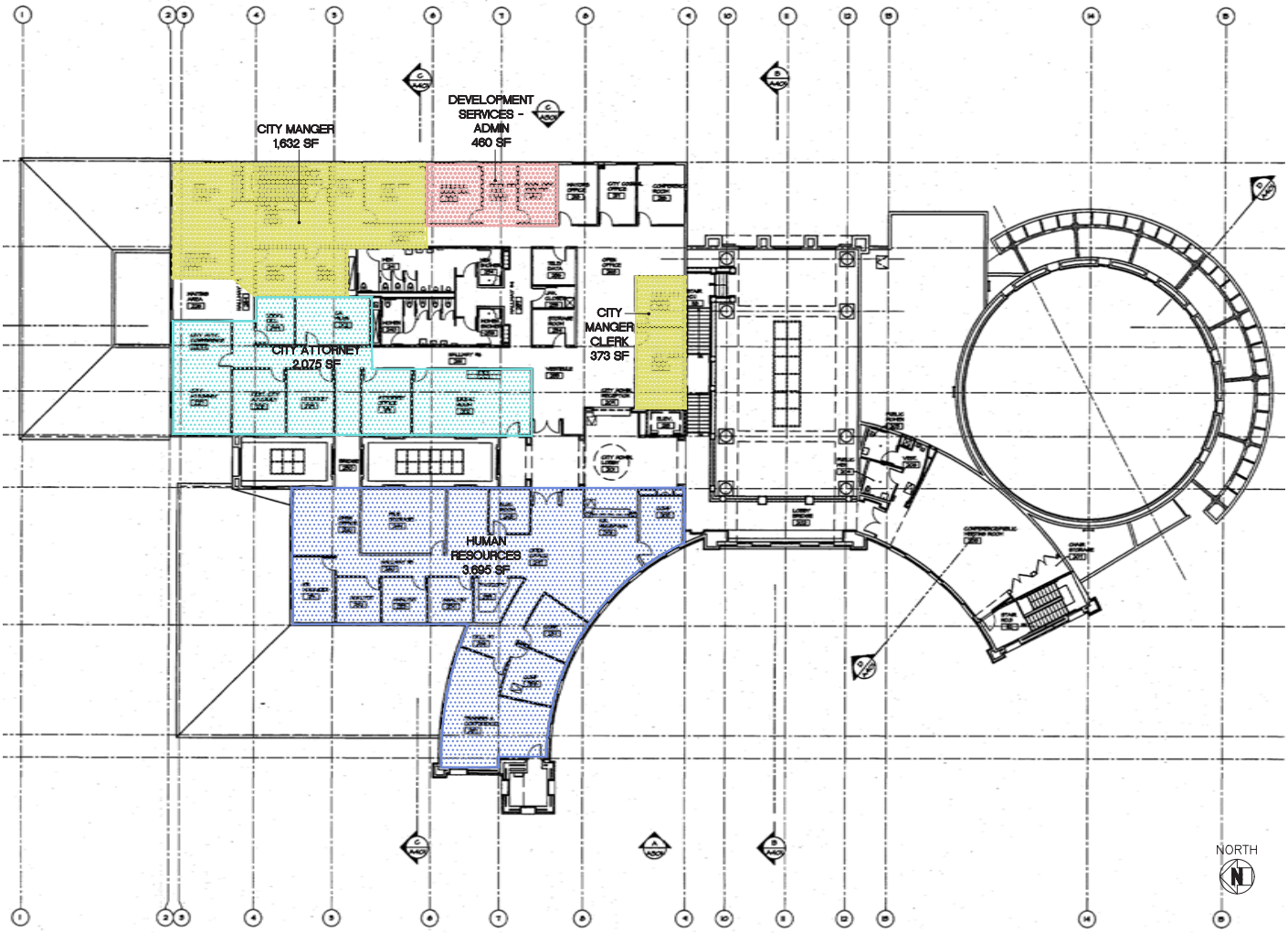
CITY HALL - LOWER FLOOR



Occupied Area by Development Services Department - Planning and Building Division	Gross Area: 3,015 sf
Occupied Area by City Manager Department - Economic Development Division	Gross Area: 307 sf
Occupied Area by Finance Department	Gross Area: 4,373 sf
Occupied Area by Parks and Recreation Department - Community and Recreation Division	Gross Area: 993 sf
Occupied Area by Police Department - Code Division	Gross Area: 643 sf

Summary of Existing Department Distribution

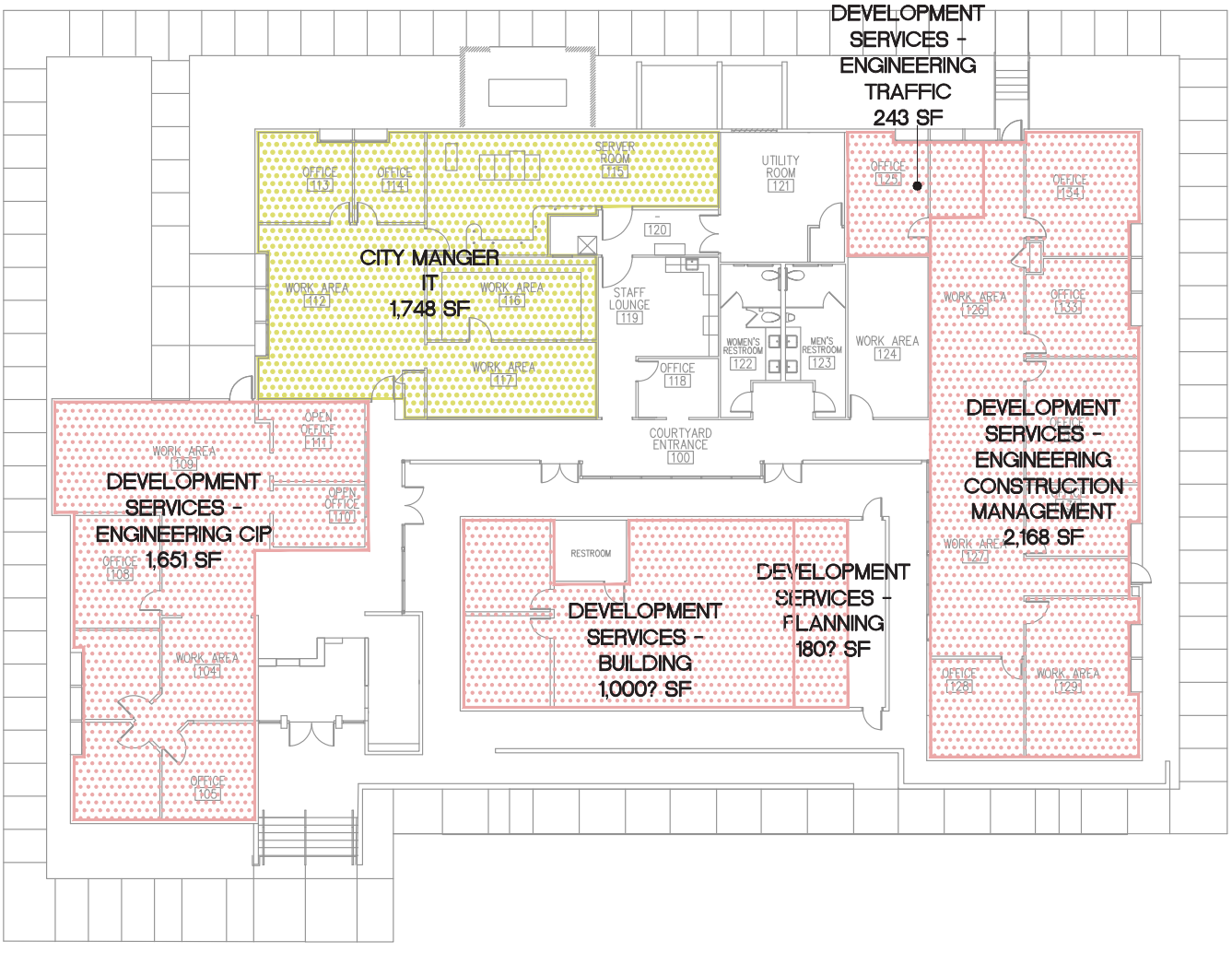
CITY HALL - UPPER FLOOR



Occupied Area by Development Department - Administration Division	Gross Area: 460 sf
Occupied Area by City Manager Department - Office and Clerk Division	Gross Area: 2,005 sf
Occupied Area by City Attorney Department	Gross Area: 2,075 sf
Occupied Area by Human Resources Department	Gross Area: 3,695 sf

Summary of Existing Department Distribution

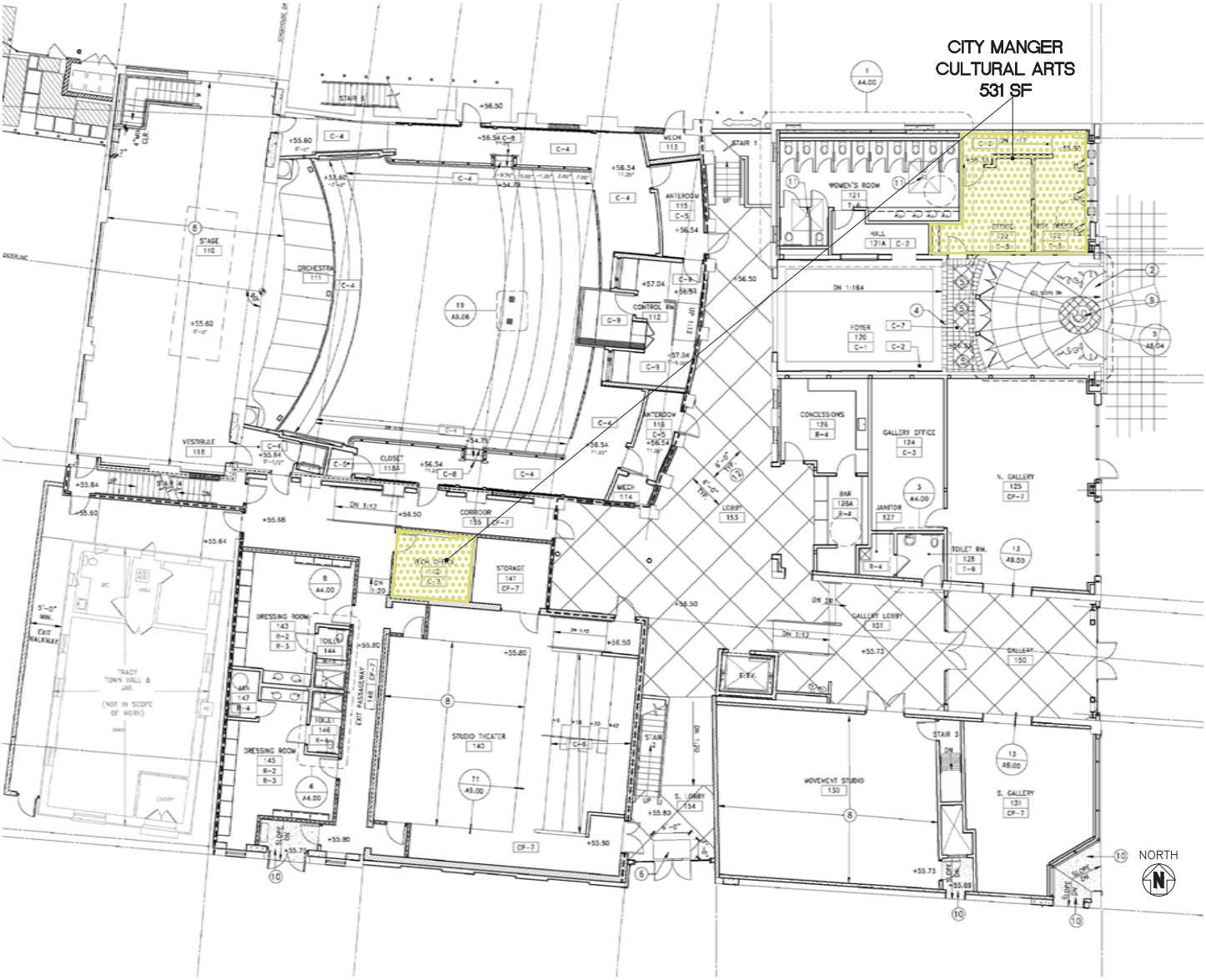
SUPPORT SERVICES BUILDING AND TRAILER



- Occupied Area by Development Services Department - CIP Engineering, Building, Planning, Traffic Engineering, and Construction Management Divisions — Gross Area: 5,246 sf
- Occupied Area by City Manager Department - IT Division — Gross Area: 1,748 sf

Summary of Existing Department Distribution

GRAND THEATRE - LOWER FLOOR

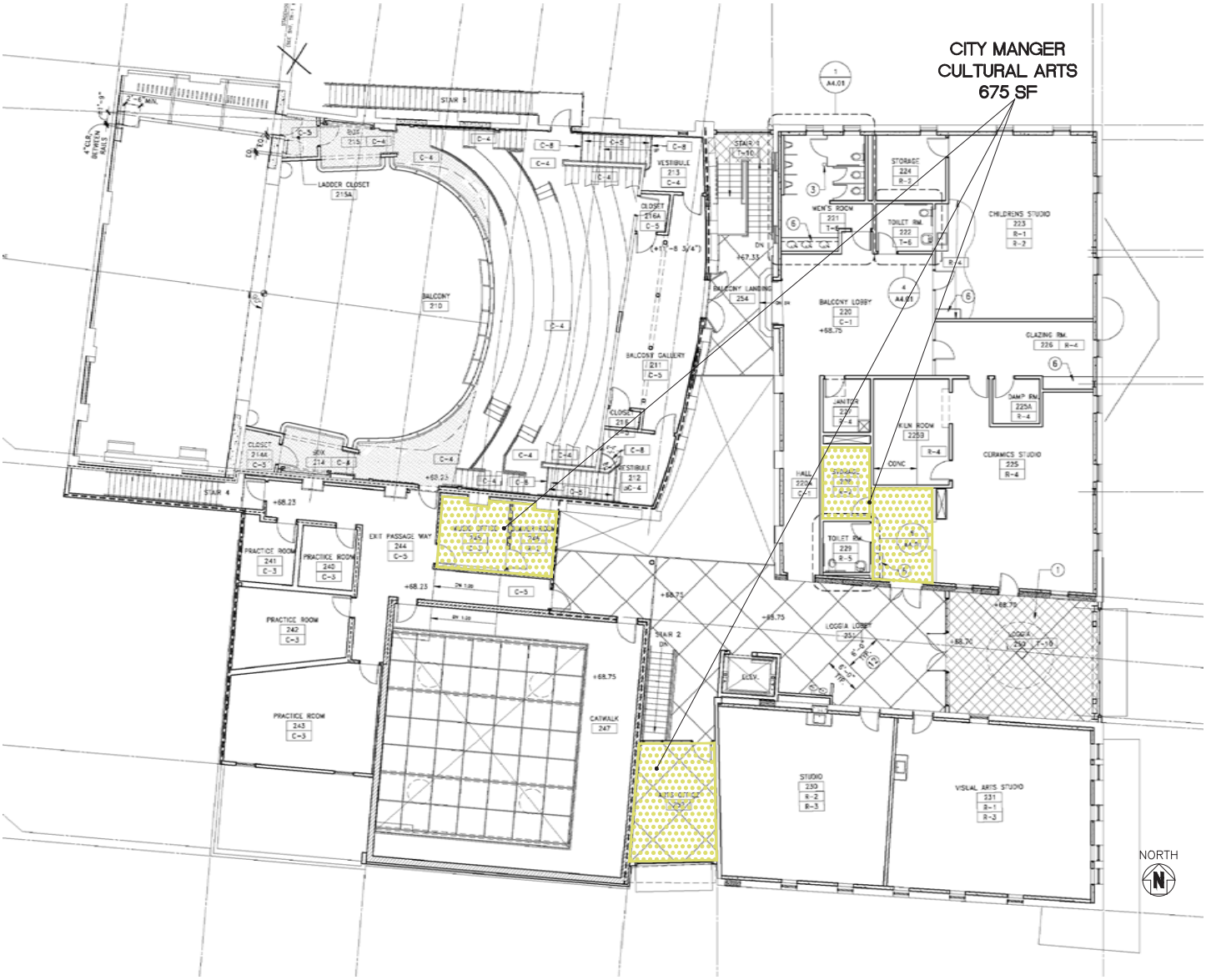


Occupied Area by City Manager Department - Cultural Arts Division

Gross Area: 531 sf

Summary of Existing Department Distribution

GRAND THEATRE - UPPER FLOOR



Occupied Area by City Manager Department - Cultural Arts Division

Gross Area: 675 sf

CITY ATTORNEY'S OFFICE

	Current			10 Year Plan		
Location	City Hall: 333 Civic Center Plaza			Maintain current space at City Hall		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	4	0	4	4	0	4
Area (SF)	2,075			2,075		
Public Interaction & Outreach:				No		

Major Needs

- Access to off-site storage areas would improve work efficiency
- Insufficient space for internal meetings

Department Description

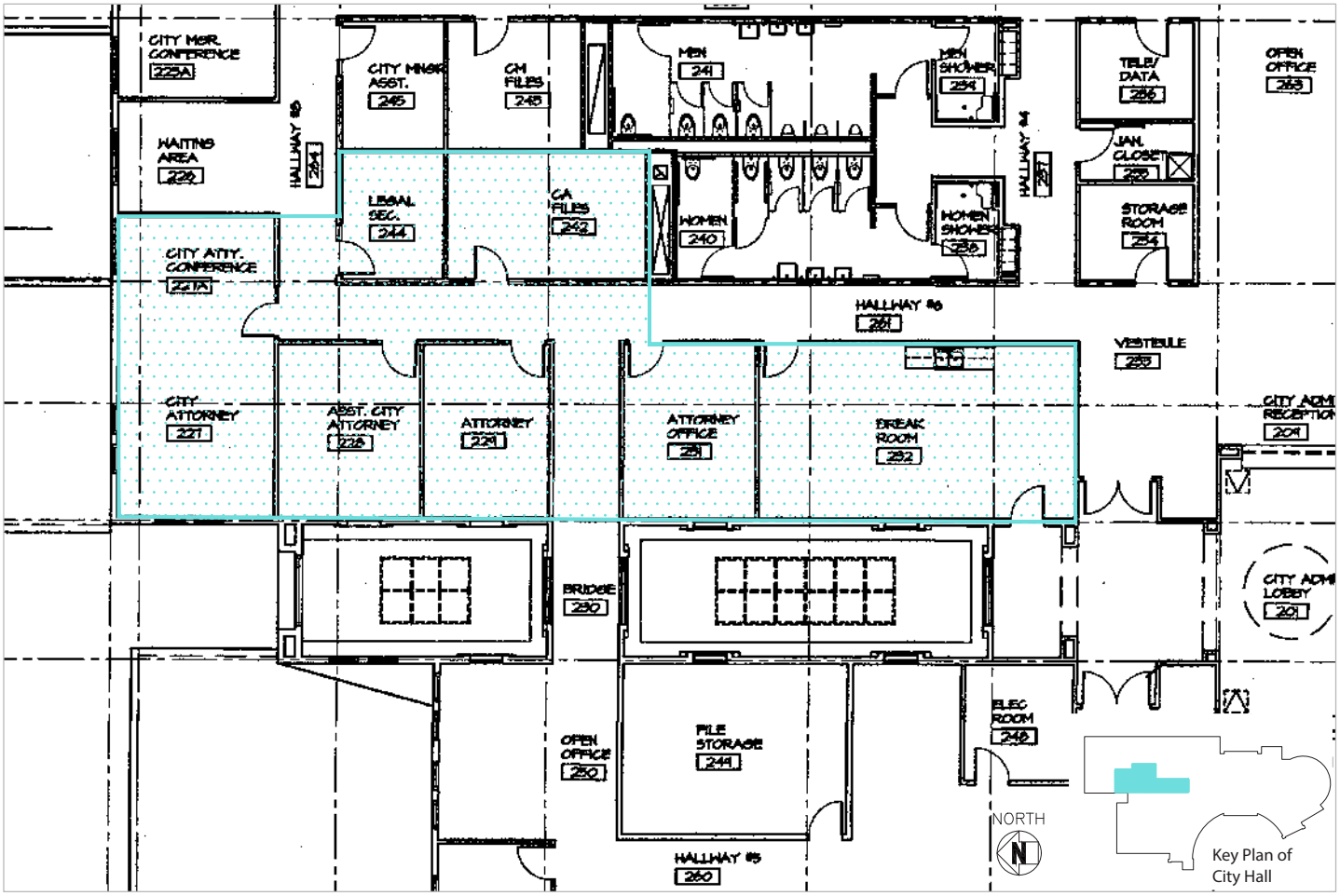
Provides legal advice to the City Council, Commissions, Boards and City staff. Prepares and assists in preparation of legal documents and legal document review.



Department Location City Facilities Other Buildings

Current Location of City Attorney's Office - CITY HALL (UPPER FLOOR)

Occupied Area by Department



CITY MANAGER'S OFFICE - ADMINISTRATION

	Current			10 Year Plan		
Location	City Hall 333 Civic Center Plaza			Remodel and rearrange existing space		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	14	0	14	14	0	14
Area (SF)	1,632			1,632		
Public Interaction & Outreach:				No		

Major Needs

- Some unused/dormant space that could be better utilized
- Conference space inefficient, as well as public meeting space
- Existing conference room 216 is small

Department Description

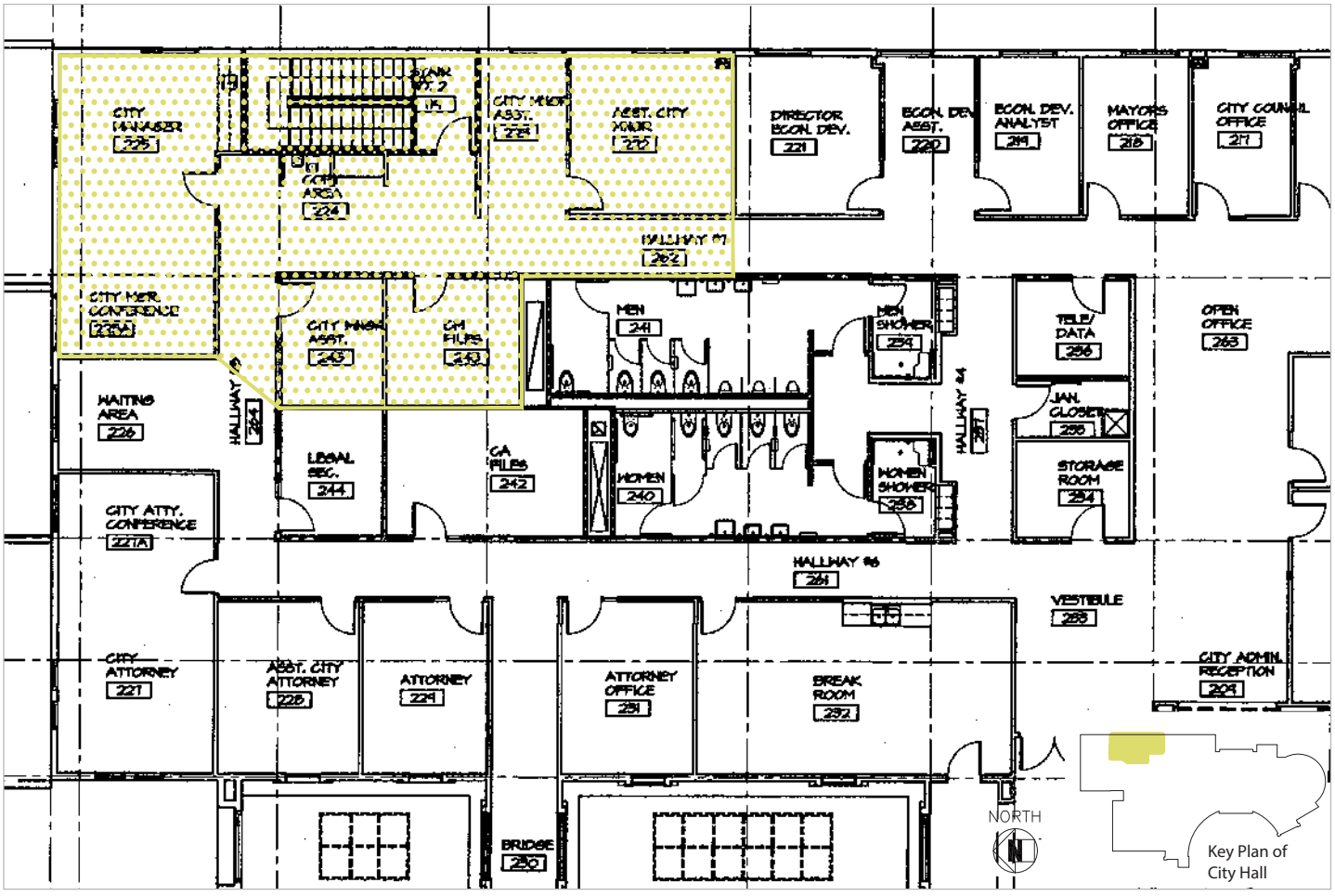
Acts as the chief administrative officer for the City and is accountable to Tracy City Council. Responsible for appointing department heads.



Department Location City Facilities Other Buildings

Current Location of City Manager's Office - CITY HALL (UPPER FLOOR)

Occupied Area by Department



CITY MANAGER'S OFFICE - CULTURAL ARTS

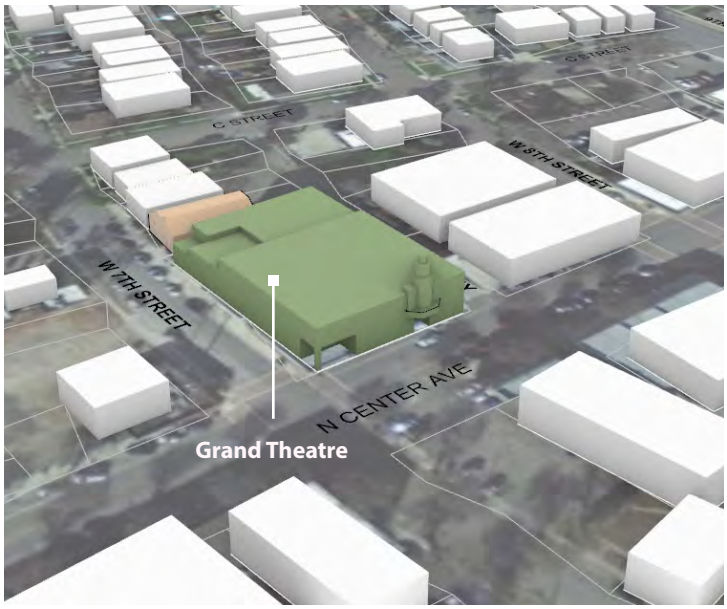
	Current			10 Year Plan		
Location	The Grand Theatre 715 Central Ave.			Remodel existing space (especially Box Office)		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	9	5	14	10	5	15
Area (SF)	1,206			1,400		
Public Interaction & Outreach:	Yes					

Major Needs

- Box Office remodel necessary
- Increased workspace area
- Office space for supervisor-level staff

Department Description

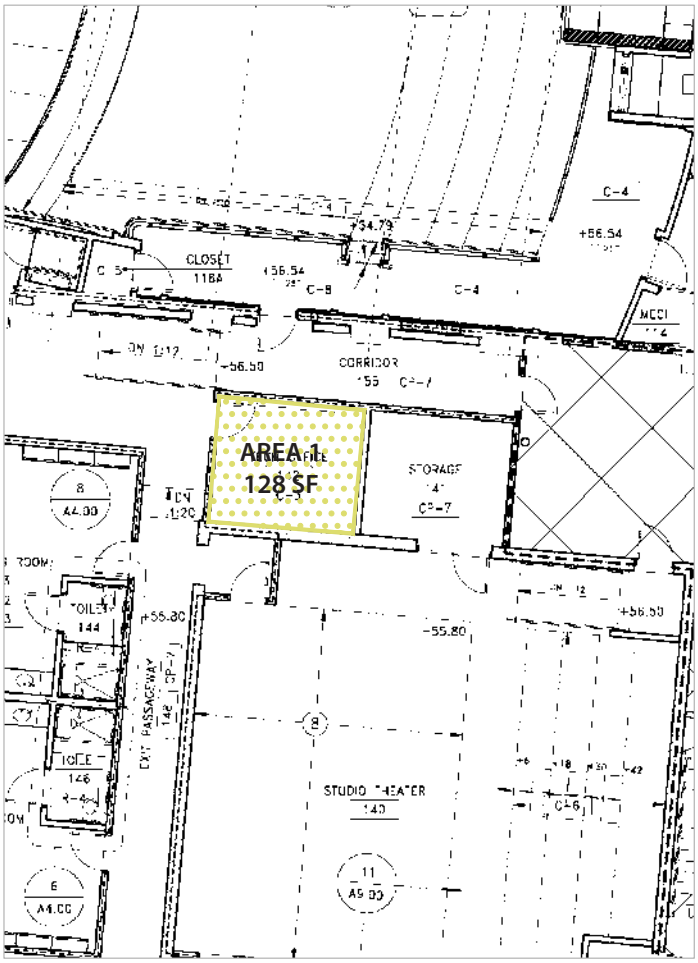
Responsible for preserving and cultivating the expression of the arts in Tracy. Represents all aspects of community arts including preservation. Maintains Civic Art Plan.

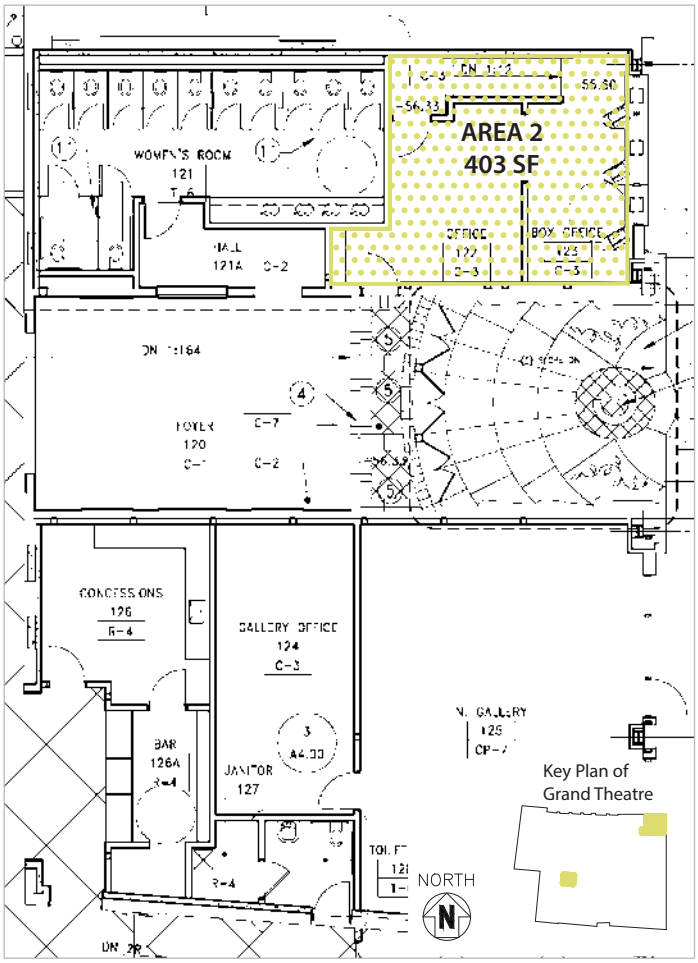


Department Location | City Facilities | Other Buildings

Current location of Cultural Arts Center - AREA 1 AND 2: GRAND THEATRE (FIRST FLOOR)

Occupied Area by Department





CITY MANAGER'S OFFICE - CULTURAL ARTS (CONTINUED)

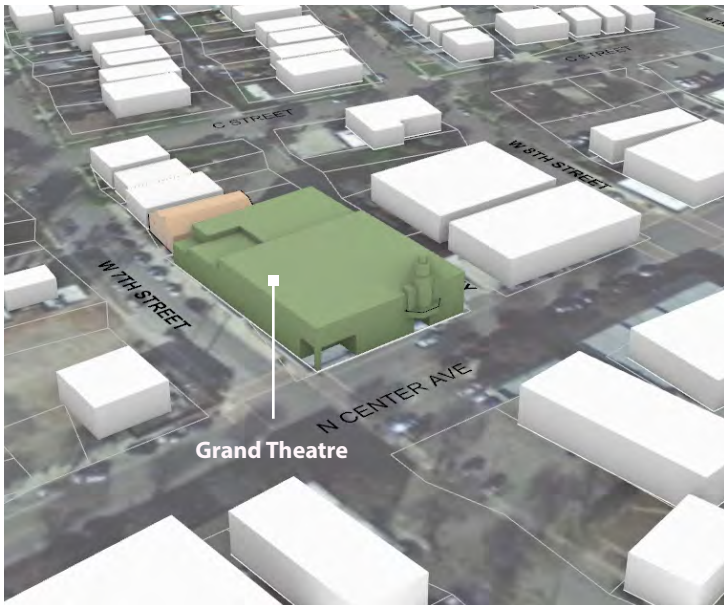
	Current			10 Year Plan		
Location	The Grand Theatre 715 Central Ave.			Remodel existing space (especially Box Office)		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	9	5	14	10	5	15
Area (SF)	1,206			1,400		
Public Interaction & Outreach:				Yes		

Major Needs

- Box Office remodel necessary
- Increased workspace area
- Office space for supervisor-level staff

Department Description

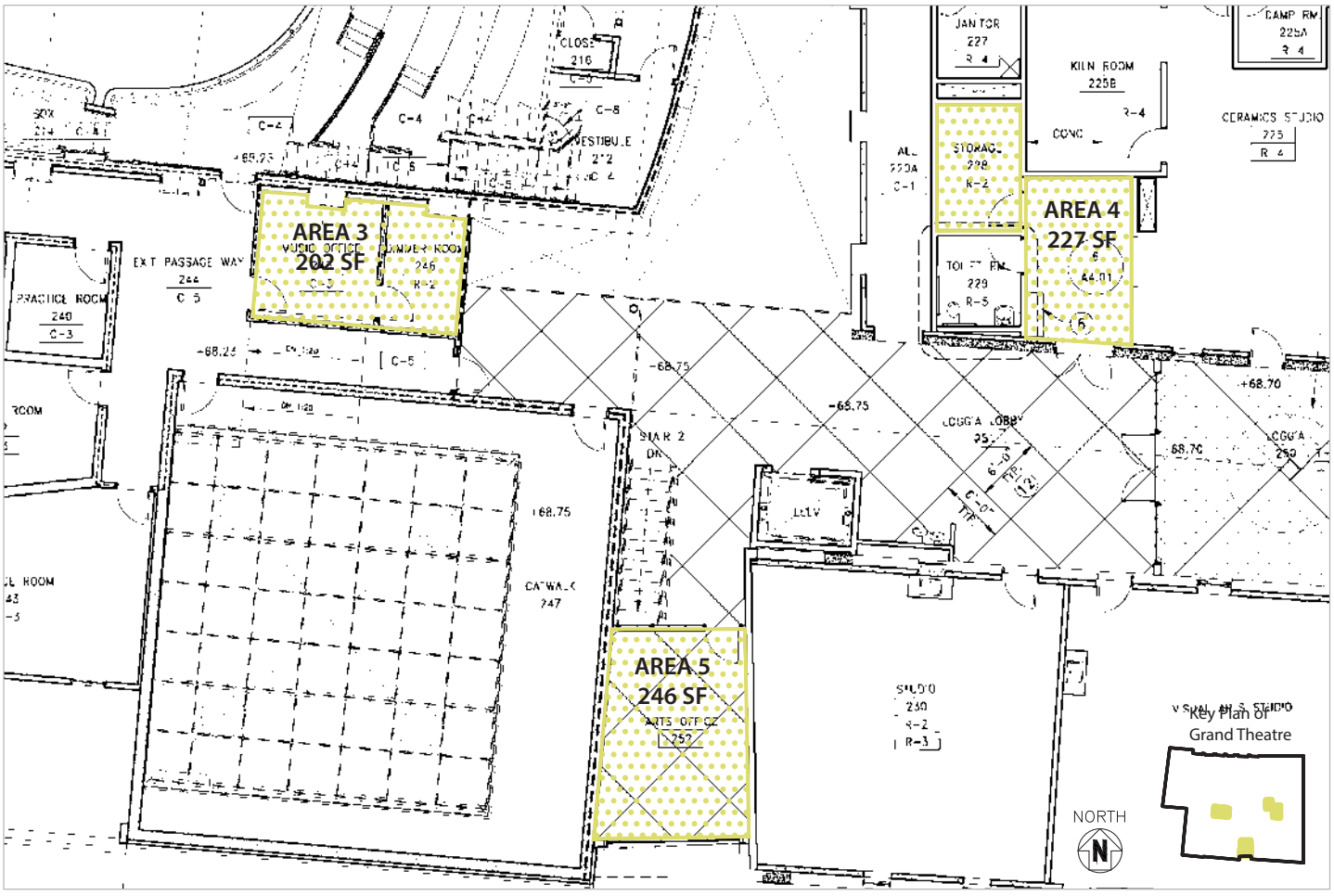
Responsible for preserving and cultivating the expression of the arts in Tracy. Represents all aspects of community arts including preservation. Maintains Civic Art Plan.



Department Location | City Facilities | Other Buildings

Current location of Cultural Arts Center - AREA 3, 4 & 5: GRAND THEATRE (SECOND FLOOR)

Occupied Area by Department



CITY MANAGER'S OFFICE - CLERK

	Current			10 Year Plan		
Location	City Hall 333 Civic Center Plaza			Remodel and rearrange existing space		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	2	0	2	2	0	2
Area (SF)	373			373		
Public Interaction & Outreach:	Rarely					

Major Needs

- Some unused/dormant space that could be better utilized
- Conference space inefficient, as well as public meeting space
- Existing conference room 216 is small

Department Description

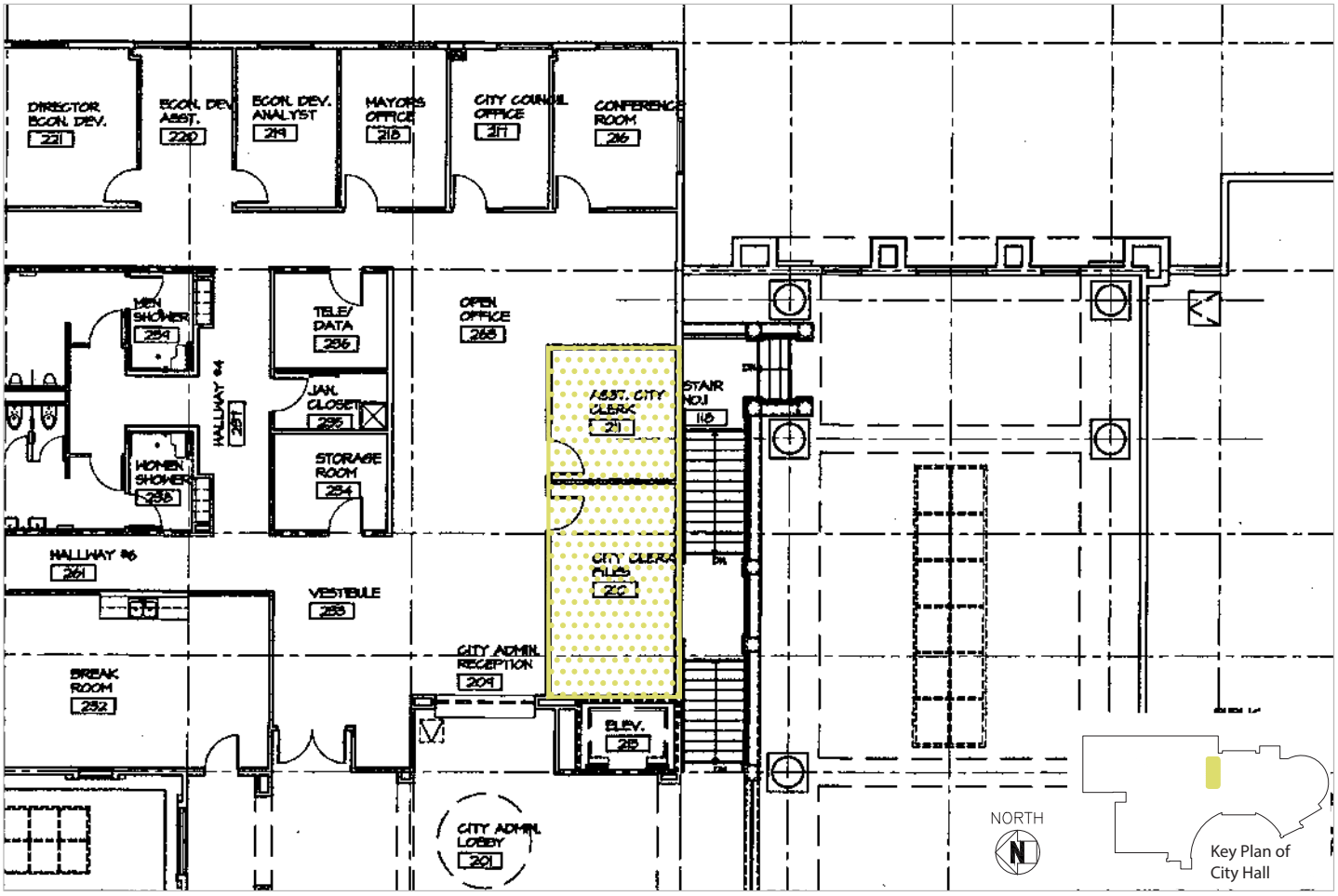
Prepares City Council and other agency agendas and meeting minutes. Maintains Tracy's official records and administers City elections.



Department Location City Facilities Other Buildings

Current location of Clerk Division - CITY HALL (UPPER FLOOR)

Occupied Area by Department



CITY MANAGER'S OFFICE - IT

	Current			10 Year Plan		
Location	Support Services Bldg. 325 Civic Center Plaza			Move to new Administration Building		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	8	0	8	10	0	10
Area (SF)	1,748			1,800		
Public Interaction & Outreach:	Rarely					

Major Needs

- Telecommunication preferred for hiring additional staff

Department Description

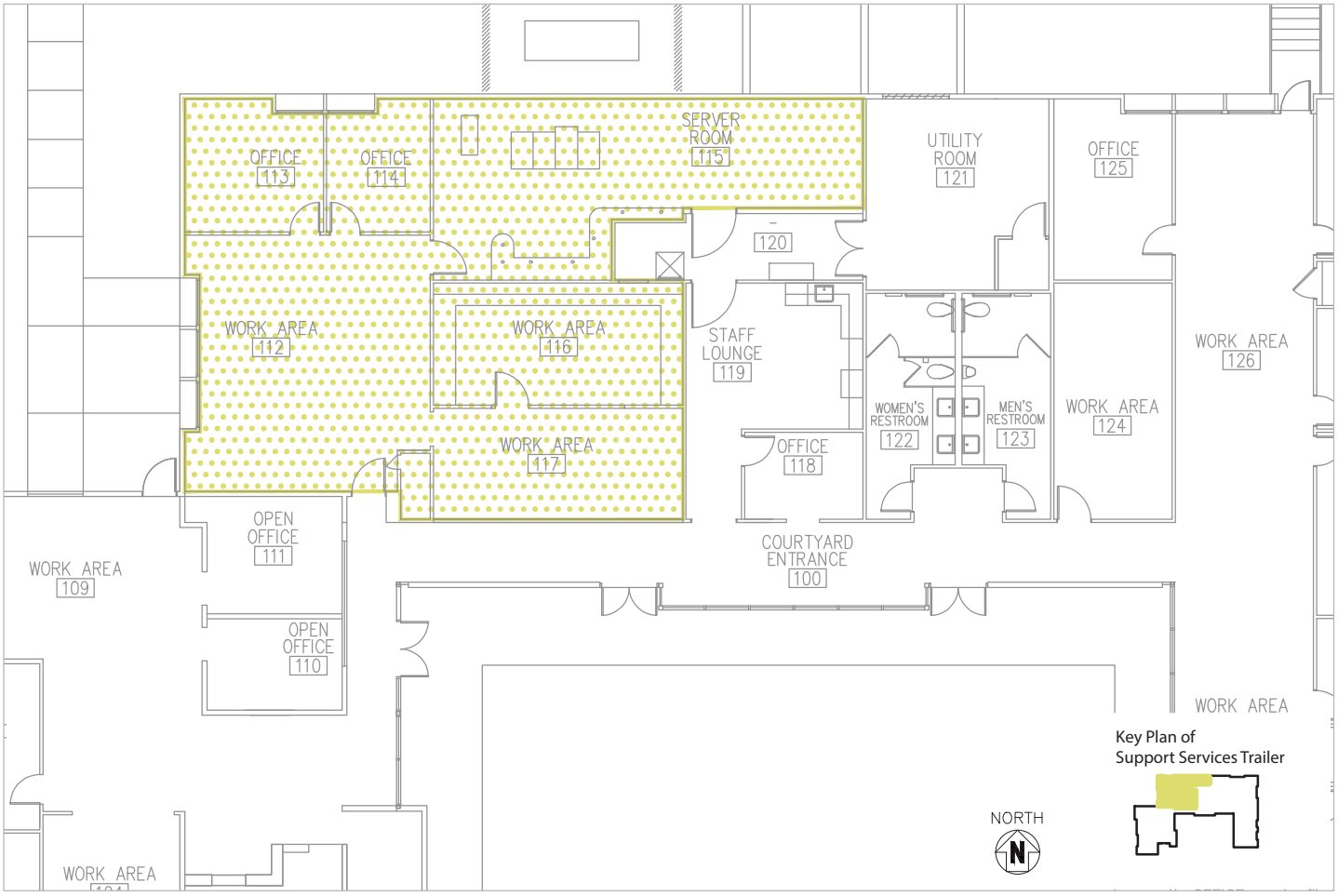
Oversees and manages the City's Information Technology infrastructure. Ensures continued service of City websites and ensures employee technical needs are met.



Department Location | City Facilities | Other Buildings

Current location of IT Division - SUPPORT SERVICES BUILDING (GROUND LEVEL)

Occupied Area by Department



CITY MANAGER'S OFFICE - PUBLIC INFORMATION & COMMUNITY ENGAGEMENT

	Current			10 Year Plan		
Location	City Hall & Police Annex 333 Civic Center Plaza			Maintain current locations at CMO's office and Police Annex		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	4	6	10	5	7	12
Area (SF)	2,228			1,638		
Public Interaction & Outreach:	Yes					

Major Needs

• Closer proximity of team employees without moving ATTCM (Assistant to the City Manager) & PIO (Public Information Officer) out of the CMO (City Manager's Office), and maintaining current CH 26 storage space.

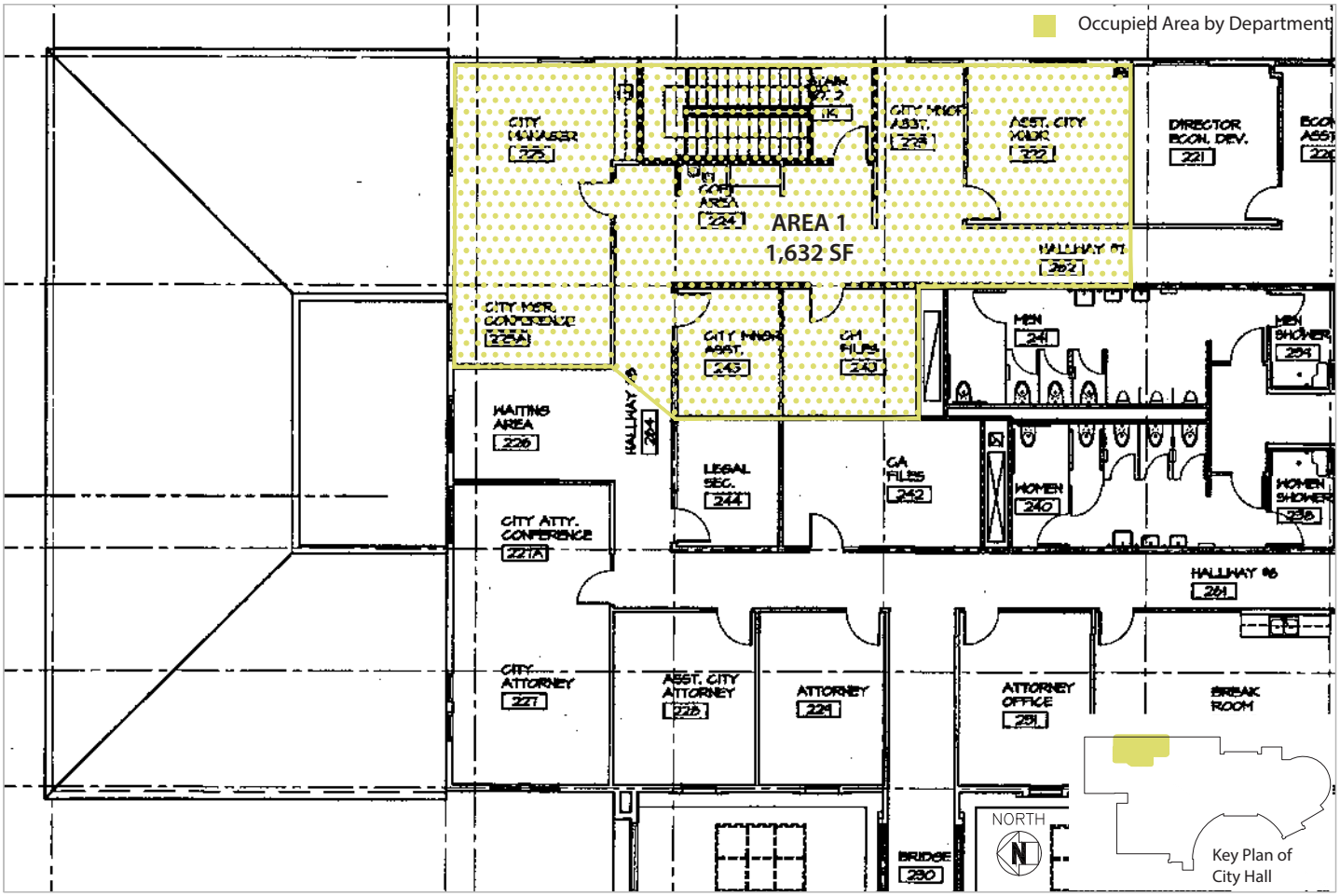
Department Description

Operates and maintains Tracy local television Channel 26. Responsible for informing the public about current City projects, activities and operations.



Department Location City Facilities Other Buildings

Current location of Public Information and Community Engagement Division - AREA 1: CITY HALL (UPPER FLOOR)



CITY MANAGER'S OFFICE - PUBLIC INFORMATION & COMMUNITY ENGAGEMENT (CONTINUED)

	Current			10 Year Plan		
Location	City Hall & Police Annex 333 Civic Center Plaza			Maintain current locations at CMO's office and Police Annex		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	4	6	10	5	7	12
Area (SF)	2,228			1,638		
Public Interaction & Outreach:	Yes					

Major Needs

• Closer proximity of team employees without moving ATTCM (Assistant to the City Manager) & PIO (Public Information Officer) out of the CMO (City Manager's Office), and maintaining current CH 26 storage space.

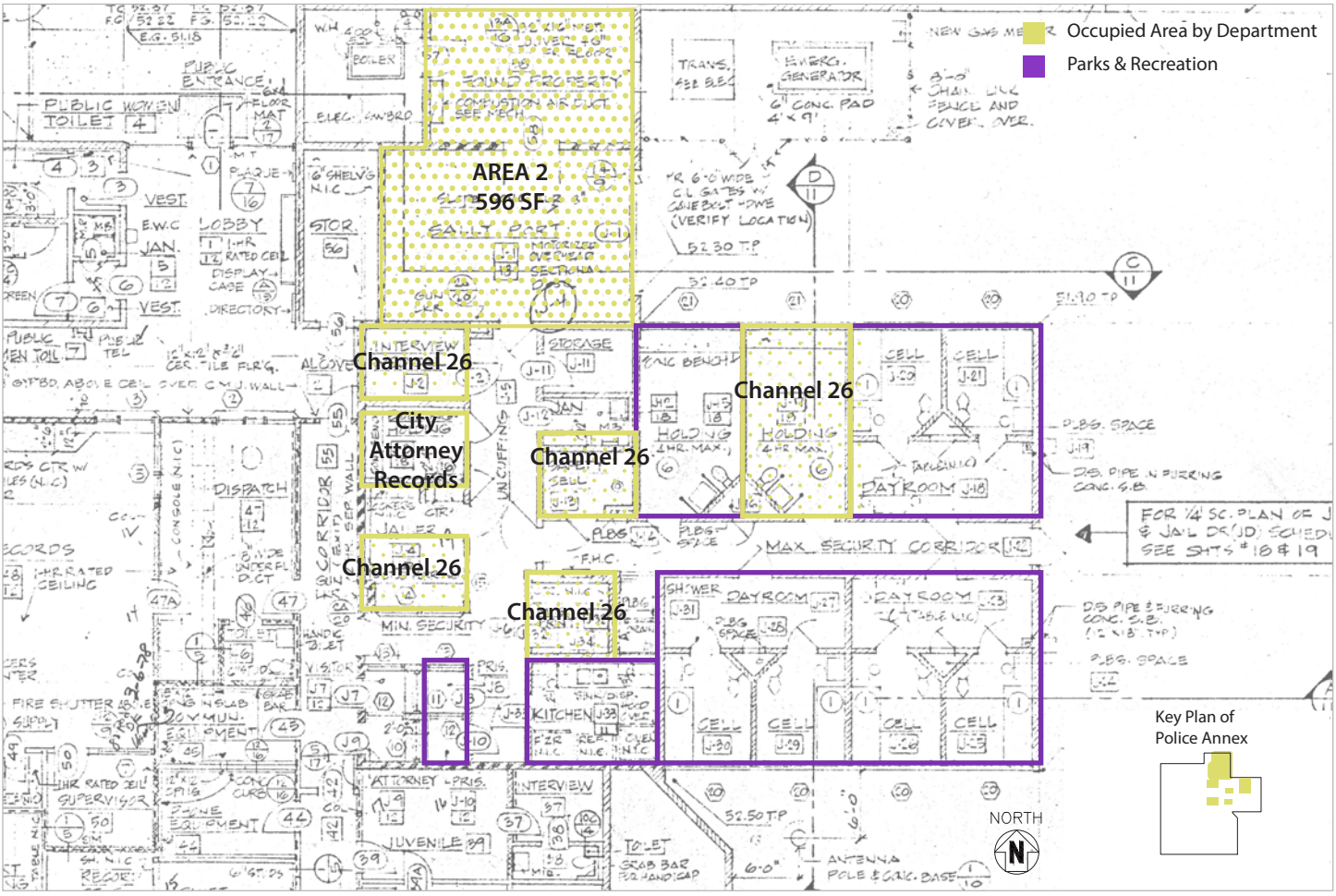
Department Description

Operates and maintains Tracy local television Channel 26. Responsible for informing the public about current City projects, activities and operations.



Department Location City Facilities Other Buildings

Current location of Public Information and Community Engagement Division - AREA 2: POLICE ANNEX FLOOR PLAN



CITY MANAGER'S OFFICE - ECONOMIC DEVELOPMENT

	Current			10 Year Plan		
Location	City Hall 333 Civic Center Plaza			Remodel and rearrange existing space		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	2	1	3	3	1	4
Area (SF)	307			465		
Public Interaction & Outreach:				Yes		

Major Needs

- Replace exsiting desks
- Conference spaces are inefficient
- One more private office is needed

Department Description

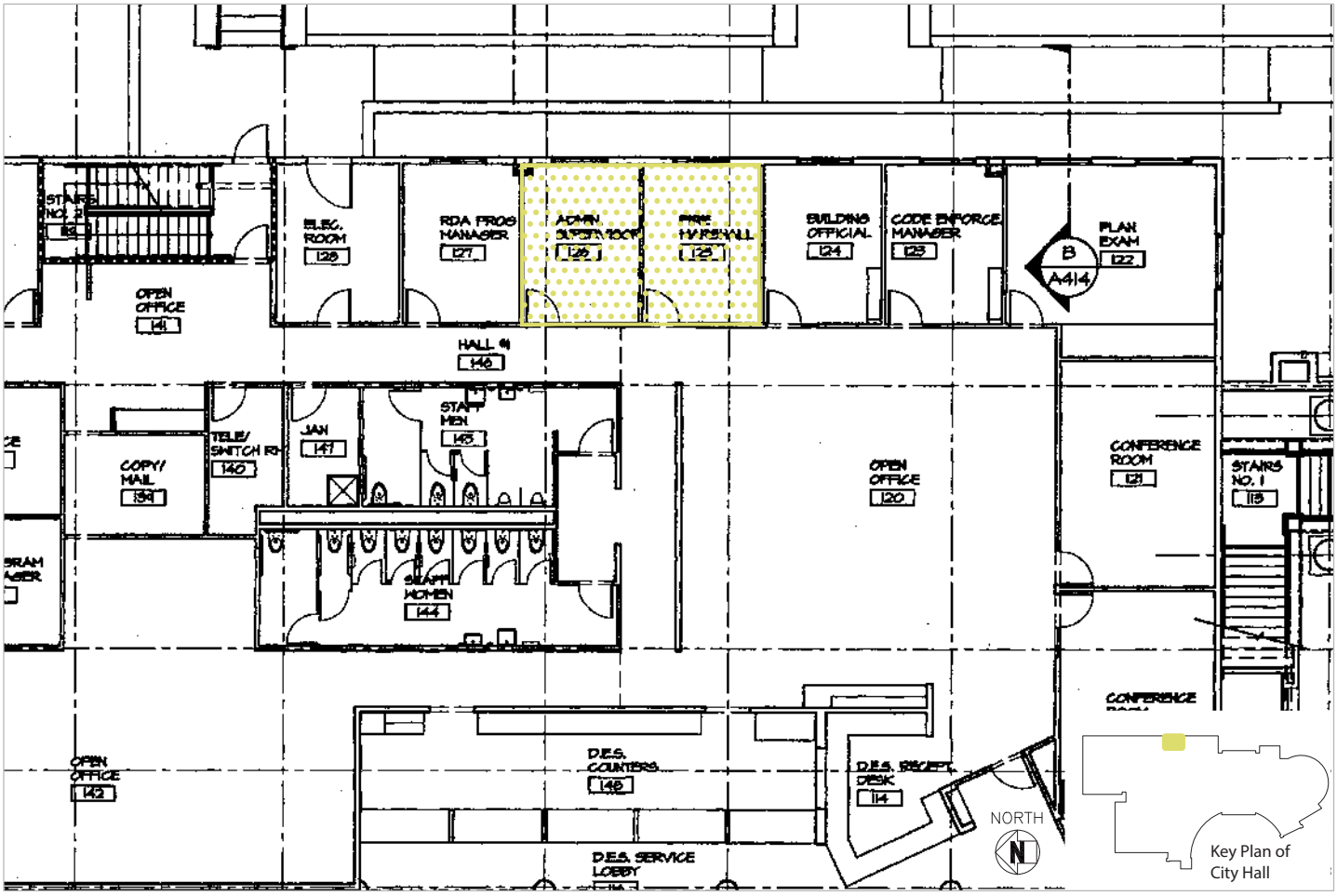
Promotes and pursures commercial, industrial and office development within Tracy in order to create a diverse and sustainable economic base for the City.



Department Location City Facilities Other Buildings

Current location of Economic Development Division - CITY HALL (LOWER FLOOR)

Occupied Area by Department



DEVELOPMENT SERVICES - ADMINISTRATION

	Current			10 Year Plan		
Location	City Hall & Support Services Building 333 Civic Center Plaza			Remodel and rearrange existing space		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	16	0	16	18	0	18
Area (SF)	1,010 (City Hall) (City Hall Annex)			2,160		
Public Interaction & Outreach:	Yes					

Major Needs

- Employees not efficient due to located in different buildings
- Inadequate meeting space for internal and public meetings
- Administrative support in City Hall has inadequate workspace

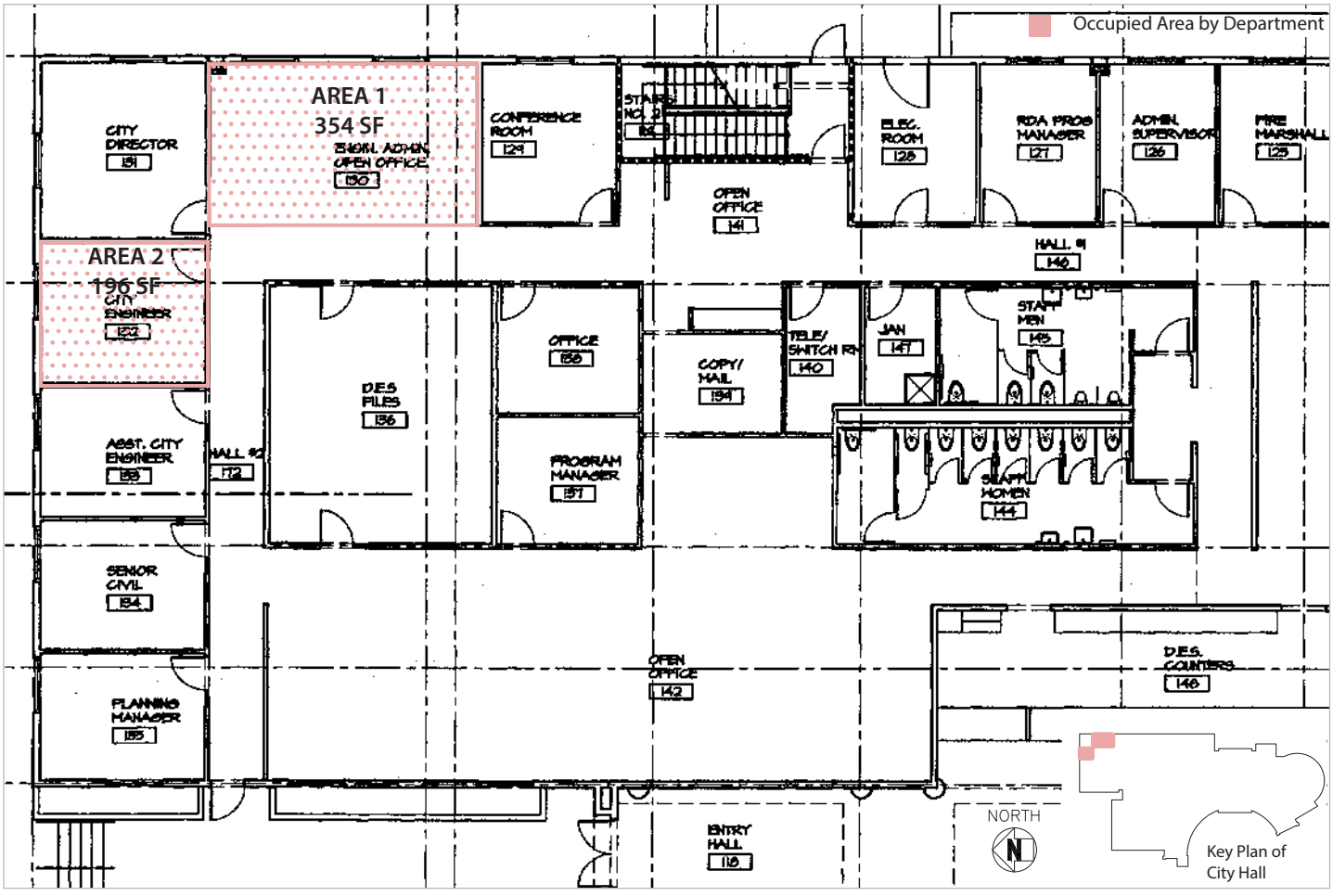
Department Description

Responsible for advancing the permitting processes within the City including working closely with building officials and planning staff.



Department Location City Facilities Other Buildings

Current location of Administration Division in Development Services - AREA 1 & 2: CITY HALL (LOWER FLOOR)



DEVELOPMENT SERVICES - ADMINISTRATION (CONTINUED)

	Current			10 Year Plan		
Location	City Hall & Support Services Building 333 Civic Center Plaza			Remodel and rearrange existing space		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	16	0	16	18	0	18
Area (SF)	1,010 (City Hall) (City Hall Annex)			2,160		
Public Interaction & Outreach:	Yes					

Major Needs

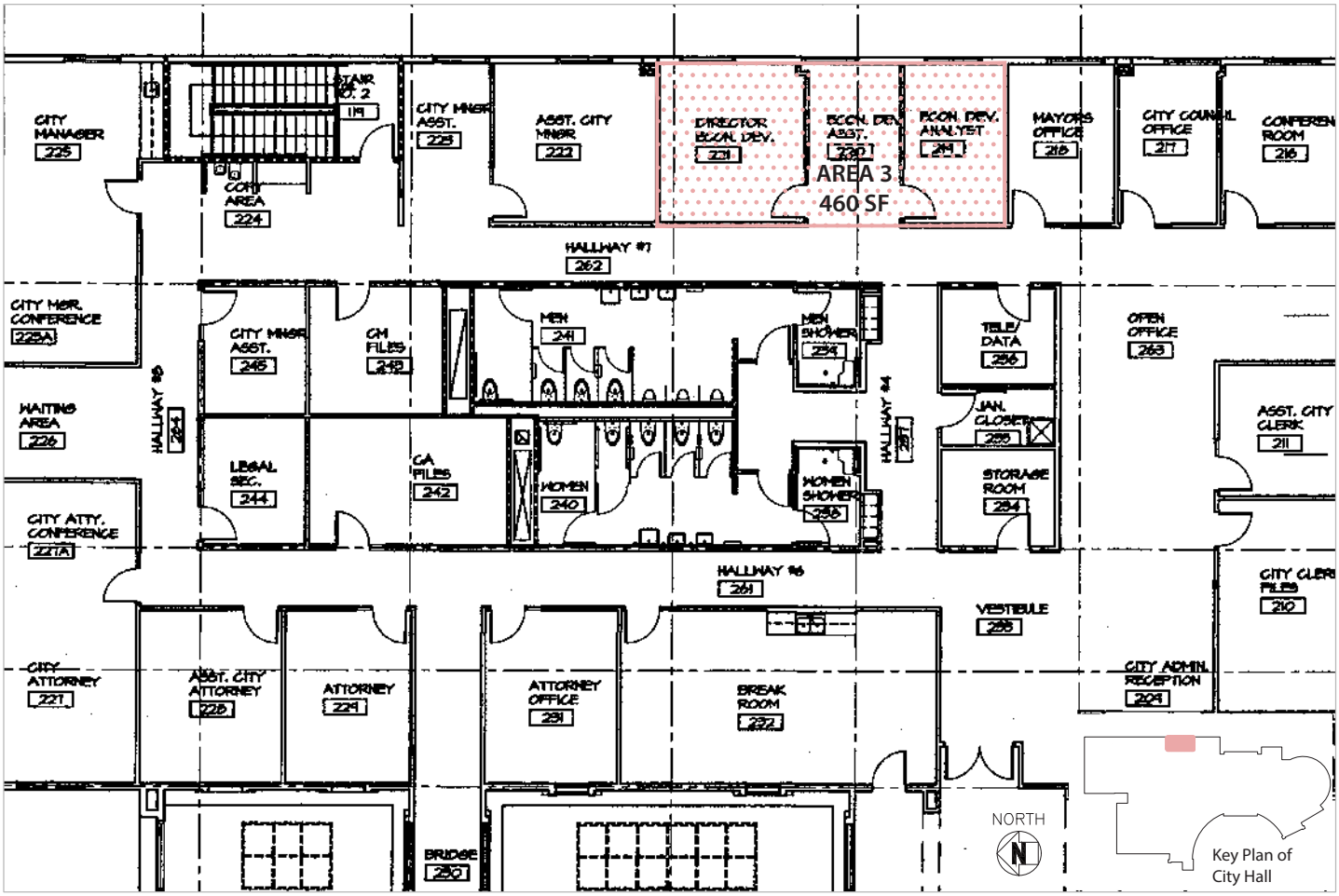
- Employees not efficient due to located in different buildings
- Inadequate meeting space for internal and public meetings
- Administrative support in City Hall has inadequate workspace

Department Description

Responsible for advancing the permitting processes within the City including working closely with building officials and planning staff.



Current location of Administration Division in Development Services - AREA 3: CITY HALL (UPPER FLOOR)



DEVELOPMENT SERVICES - PLANNING

	Current			10 Year Plan		
Location	City Hall & Support Service Trailer 333 Civic Center Plaza			Remodel and rearrange existing space. Move all to City Hall.		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	9	0	9	10	0	10
Area (SF)	1,657			1,875		
Public Interaction & Outreach:				No		

Major Needs

- One more office is needed
- A little more privacy would be helpful

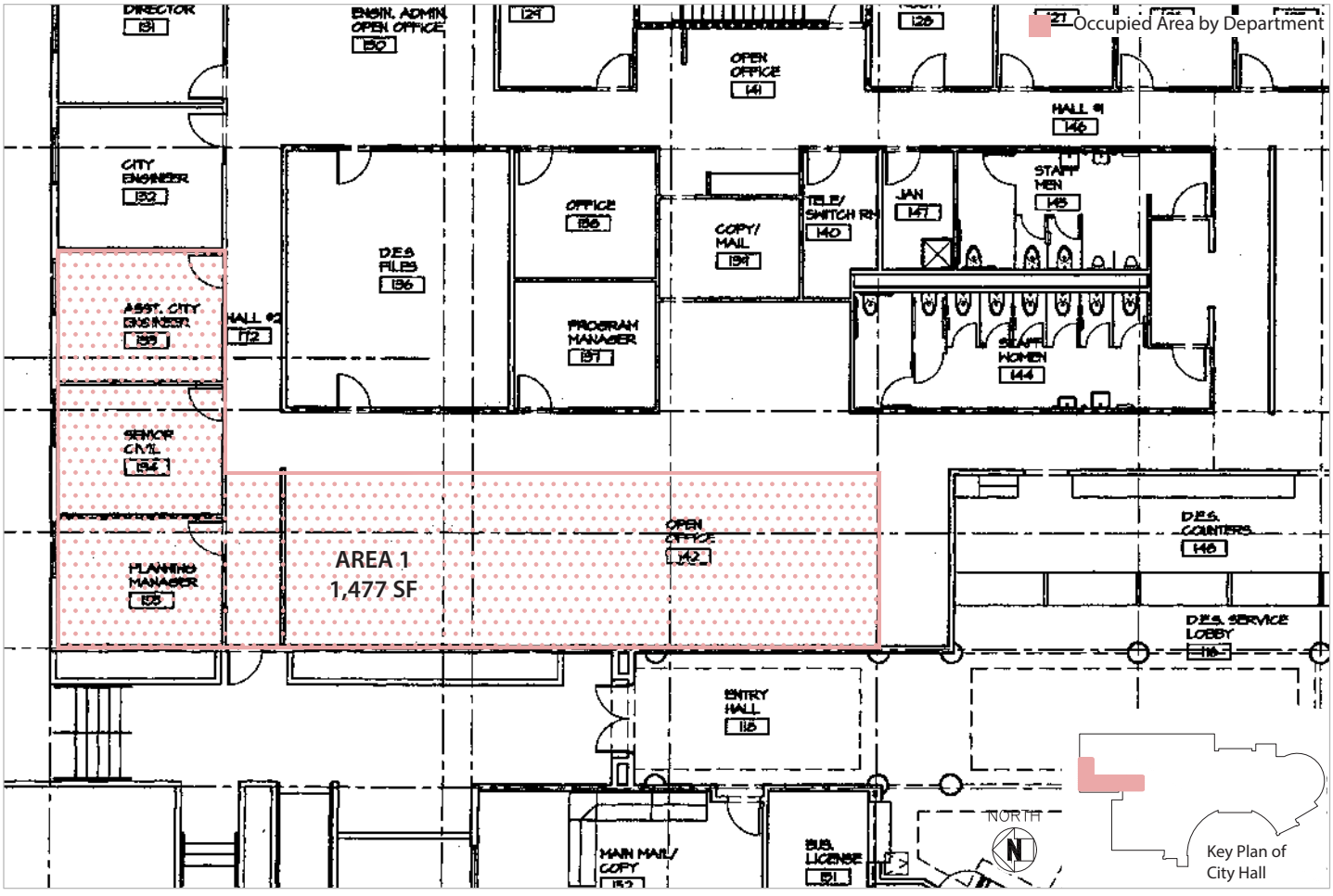
Department Description

Responsible for implementing City policies that direct the physical development and community character of Tracy through the analysis and establishment of local plans, including project development and approvals.



Department Location City Facilities Other Buildings

Current location of Planning Division in Development Services - AREA 1: CITY HALL (LOWER FLOOR)



DEVELOPMENT SERVICES - PLANNING (CONTINUED)

	Current			10 Year Plan		
Location	City Hall & Support Service Trailer 333 Civic Center Plaza			Remodel and rearrange existing space. Move all to City Hall.		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	9	0	9	10	0	10
Area (SF)	1,657			1,875		
Public Interaction & Outreach:				No		

Major Needs

- One more office is needed
- A little more privacy would be helpful

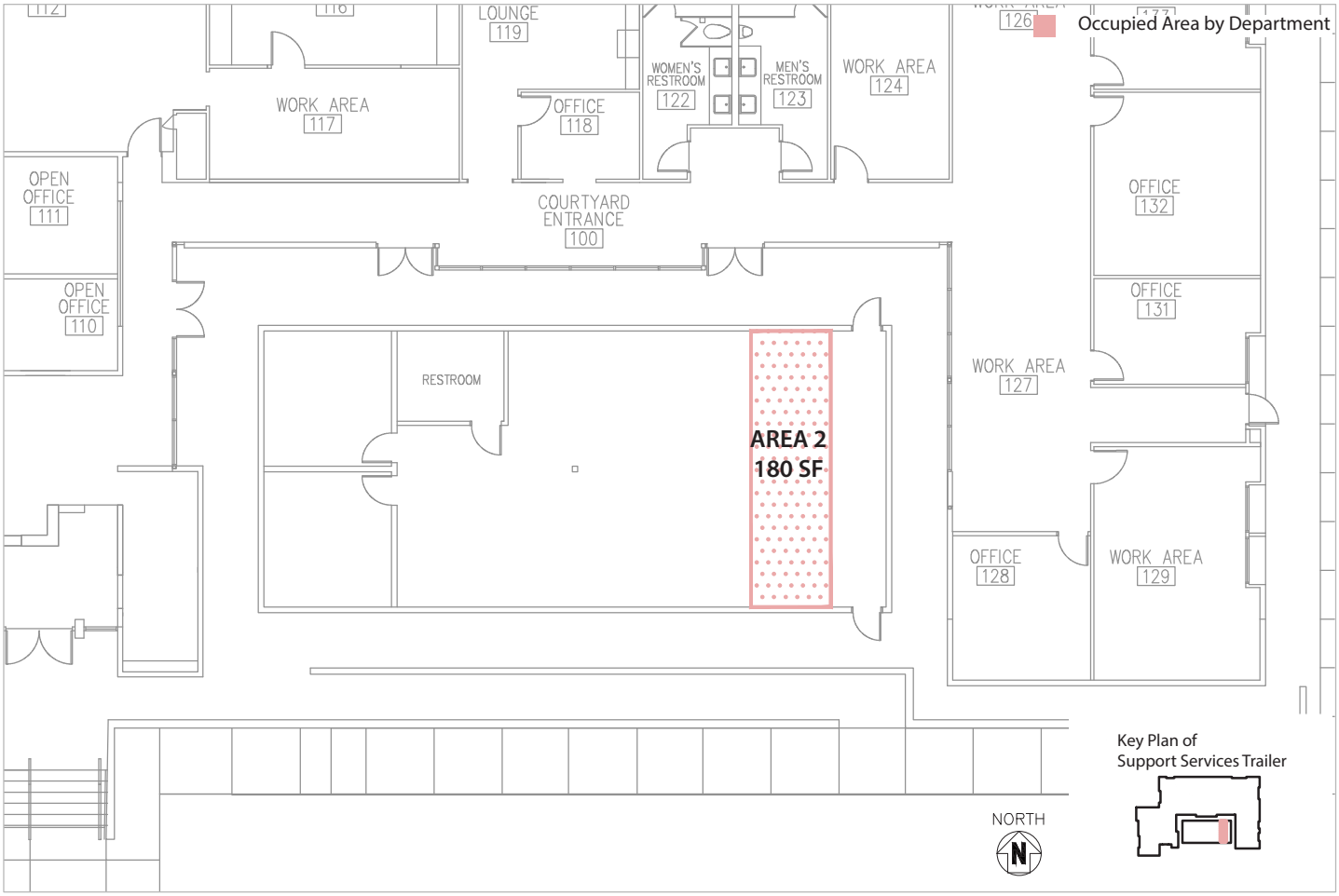
Department Description

Responsible for implementing City policies that direct the physical development and community character of Tracy through the analysis and establishment of local plans, including project development and approvals.



Department Location City Facilities Other Buildings

Current location of Planning Division in Development Services - AREA 2: SUPPORT SERVICE TRAILER FLOOR PLAN



DEVELOPMENT SERVICES - BUILDING

	Current			10 Year Plan		
Location	City Hall & Support Service Trailer 333 Civic Center Plaza			Move to Administration Building		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	16	0	16	17	0	17
Area (SF)	1,984			1,932		
Public Interaction & Outreach:	No					

Major Needs

- City Hall space is too small
- Employees are not efficiently located
- Lacking meeting space for division

Department Description

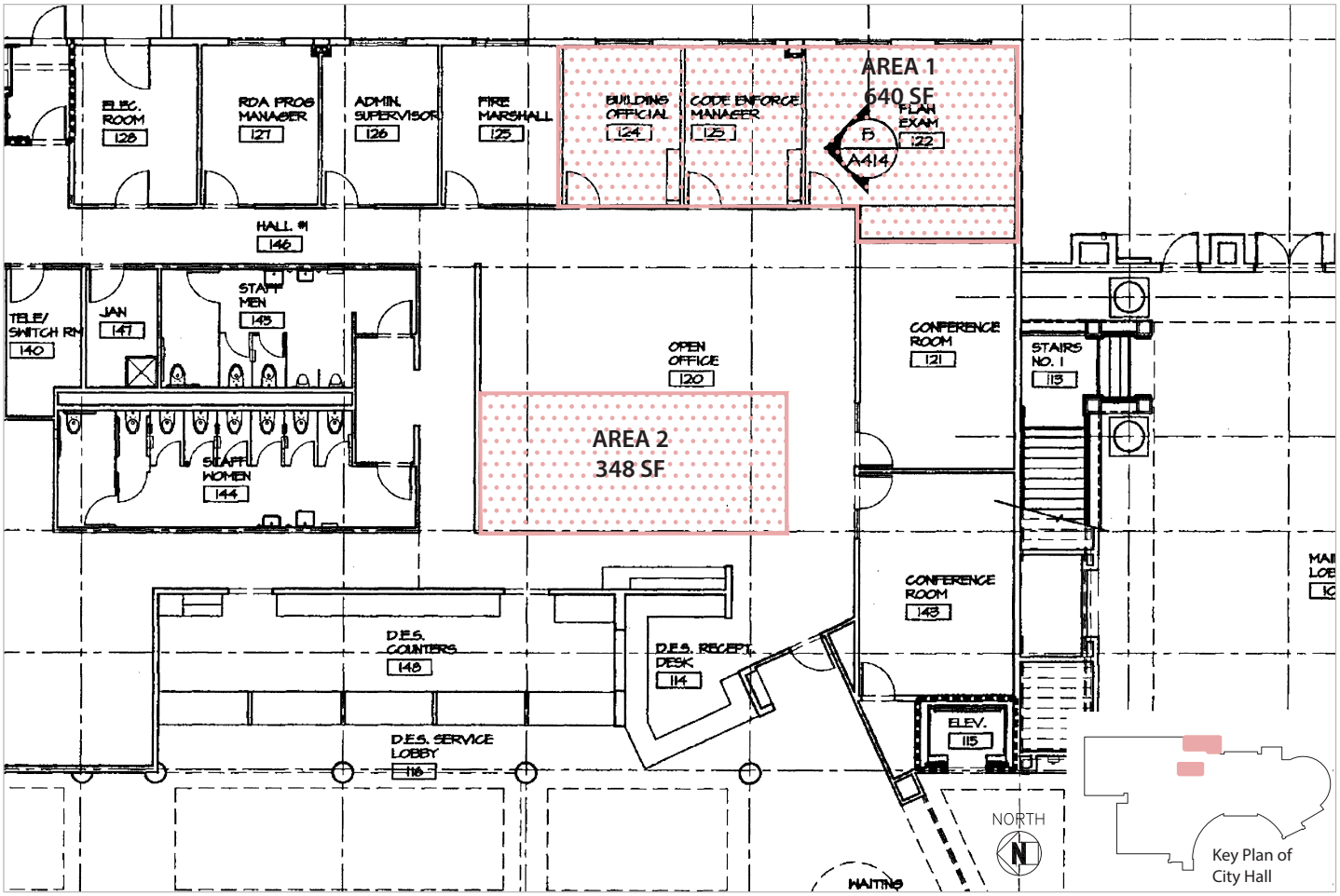
Responsible for improving the safety of Tracy residents through increasing protection from life threatening hazards and reducing risks of property loss.



Department Location | City Facilities | Other Buildings

Current location of Development Services Building - AREA 1 & 2: CITY HALL (LOWER FLOOR)

Occupied Area by Department



DEVELOPMENT SERVICES - BUILDING (CONTINUED)

	Current			10 Year Plan		
Location	City Hall & Support Service Trailer 333 Civic Center Plaza			Move to Administration Building		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	16	0	16	17	0	17
Area (SF)	1,984			1,932		
Public Interaction & Outreach:				No		

Major Needs

- City Hall space is too small
- Employees are not efficiently located
- Lacking meeting space for division

Department Description

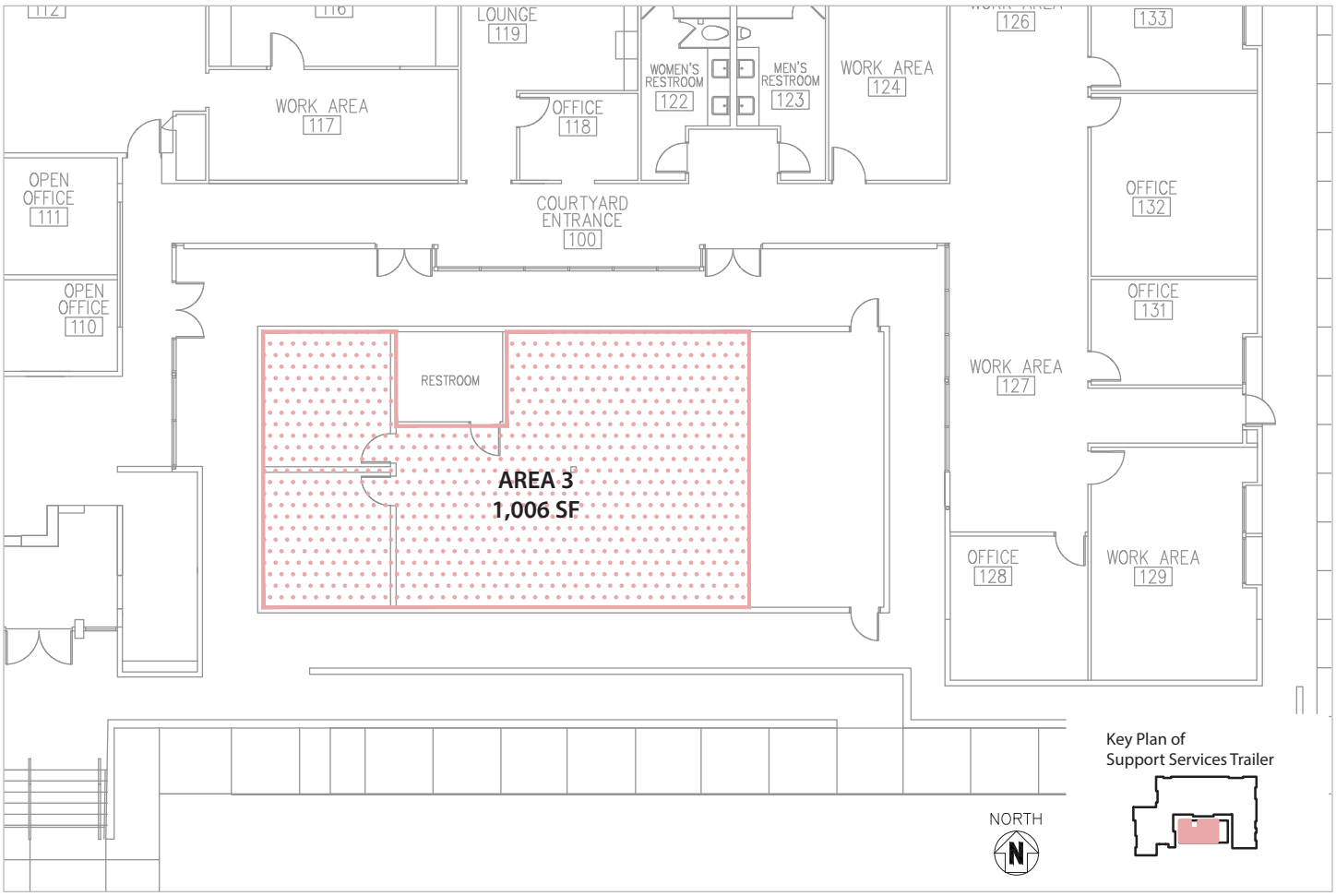
Responsible for improving the safety of Tracy residents through increasing protection from life threatening hazards and reducing risks of property loss.



Department Location City Facilities Other Buildings

Current Location in Support Services Buildings - AREA 3: SUPPORT SERVICE TRAILER

Occupied Area by Department



DEVELOPMENT SERVICES - ENGINEERING CIP

	Current			10 Year Plan		
Location	Support Services Bldg 325 Civic Center Plaza			Move to Administration Building		
Number of Employees	Full-Time	Frozen	Total	Full-Time	Part-Time	Total
	6	3	9	10	0	10
Area (SF)	1,651			2,500		
Public Interaction & Outreach:	Rarely					

Major Needs

- Office space is not efficient, including inefficient storage
- More space for internal meetings is needed
- Potential candidate for relocation or new facility
- Vacancies in employee positions require fulfillment

Department Description

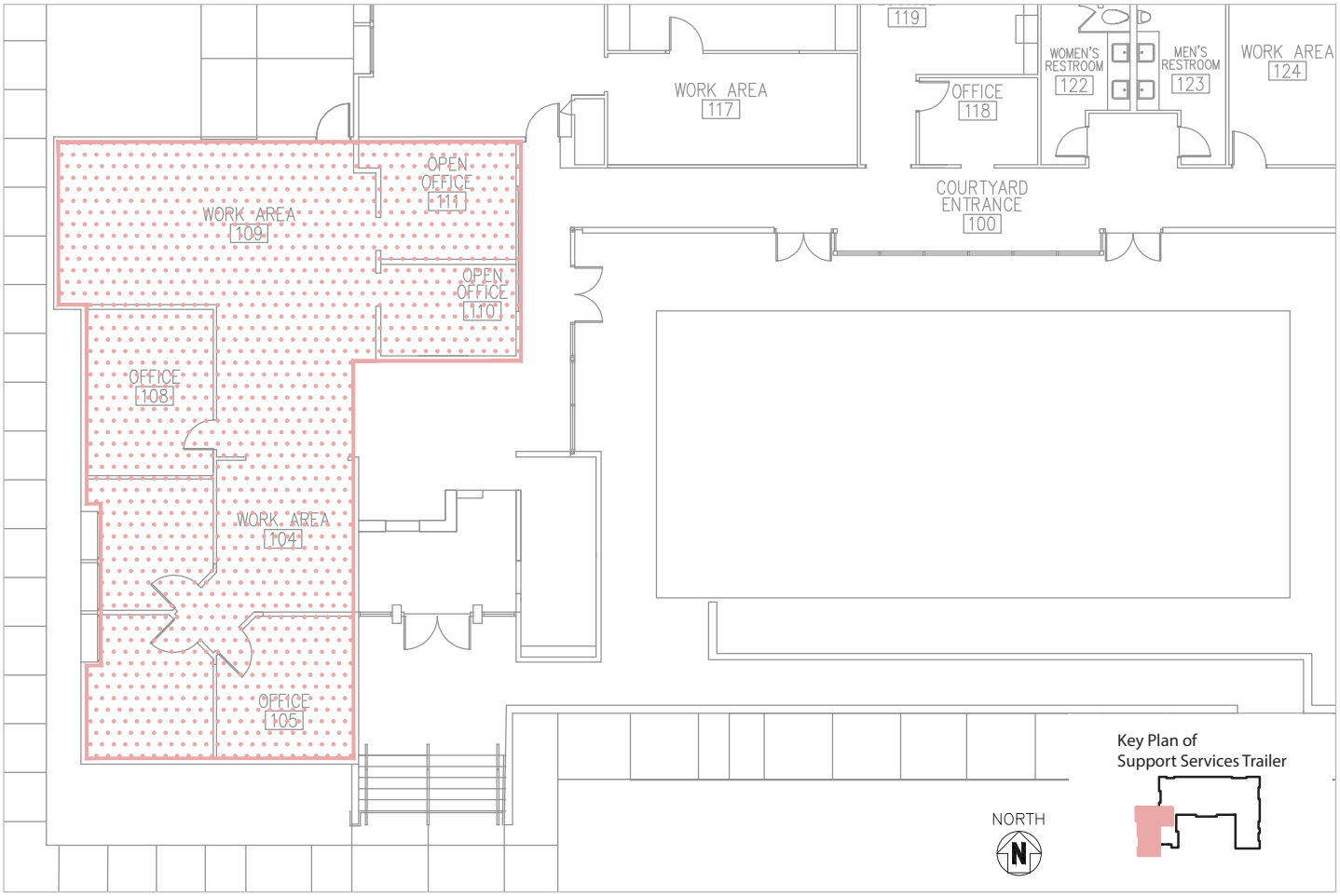
Responsible for providing design and construction administration for all capital improvement programs and projects including streets, buildings, parks and utilities.



Department Location City Facilities Other Buildings

Current Location in Engineering CIP Division - SUPPORT SERVICE TRAILER

Occupied Area by Department



DEVELOPMENT SERVICES - ENGINEERING LAND DEVELOPMENT

	Current			10 Year Plan		
Location	City Hall 333 Civic Center Plaza			Move to Administration Building		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	7	0	7	9	0	9
Area (SF)	426			675		
Public Interaction & Outreach:	Yes					

Major Needs

- Office space to accommodate additional two (2) staff
- Insufficient space for both internal and public meetings
- Maintain current combination of offices and open workspaces

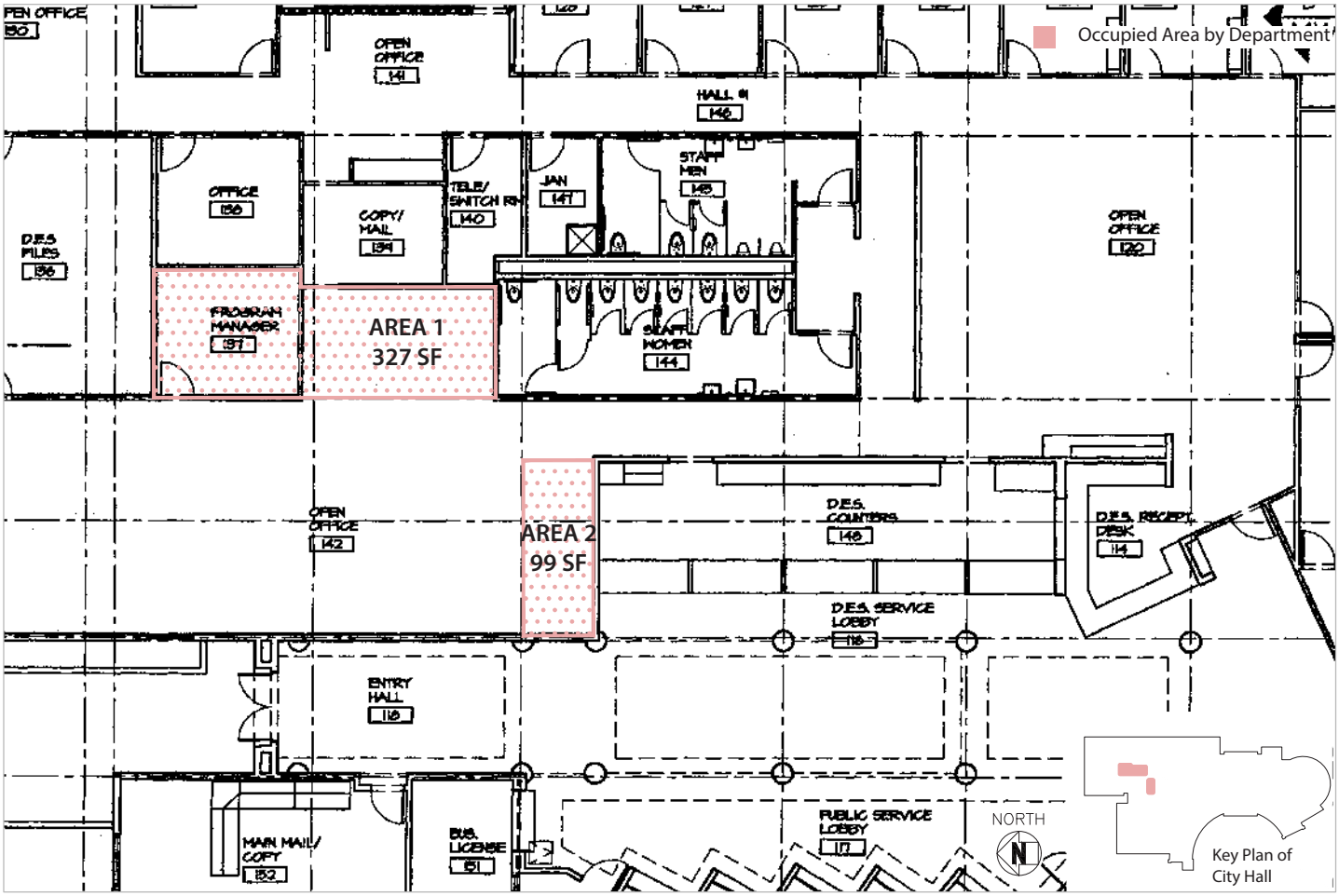
Department Description

Provides review and permit processing services to the development community and public to ensure construction quality within established schedules.



Department Location City Facilities Other Buildings

Current Location of Engineering Land Development Division - AREA 1 & 2: CITY HALL (FLOOR PLAN)



DEVELOPMENT SERVICES - ENGINEERING CONSTRUCTION MANAGEMENT

	Current			10 Year Plan		
Location	Support Services Bldg 325 Civic Center Plaza			Move to Administration Building		
Number of Employees	Full-Time	Frozen	Total	Full-Time	Part-Time	Total
	6	3	9	10	4	14
Area (SF)	2,168			3,000		
Public Interaction & Outreach:	Yes					

Major Needs

- Insufficient space for public meetings
- Occupy existing open private office space

Department Description

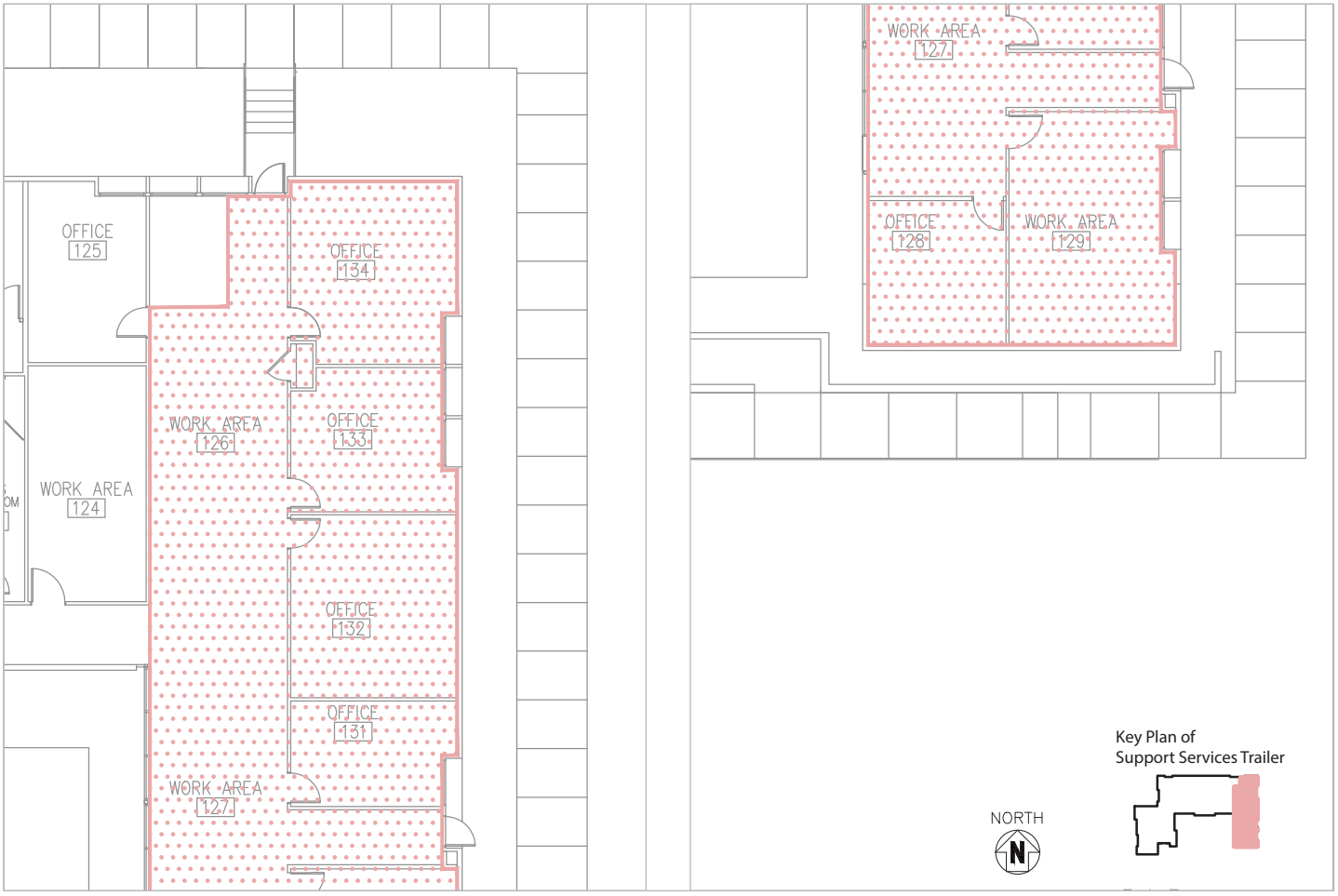
Provides inspection of public works projects, private development projects and encroachment permits during construction to ensure plans are followed appropriately.



Department Location City Facilities Other Buildings

Current Location of Engineering Construction Management Division - SUPPORT SERVICE TRAILER

Occupied Area by Department



DEVELOPMENT SERVICES - ENGINEERING TRAFFIC

	Current			10 Year Plan		
Location	Support Services Bldg 325 Civic Center Plaza			Move to Administration Building		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	3	0	3	3	0	3
Area (SF)	243			500		
Public Interaction & Outreach:				No		

Major Needs

- No Survey received

Department Description

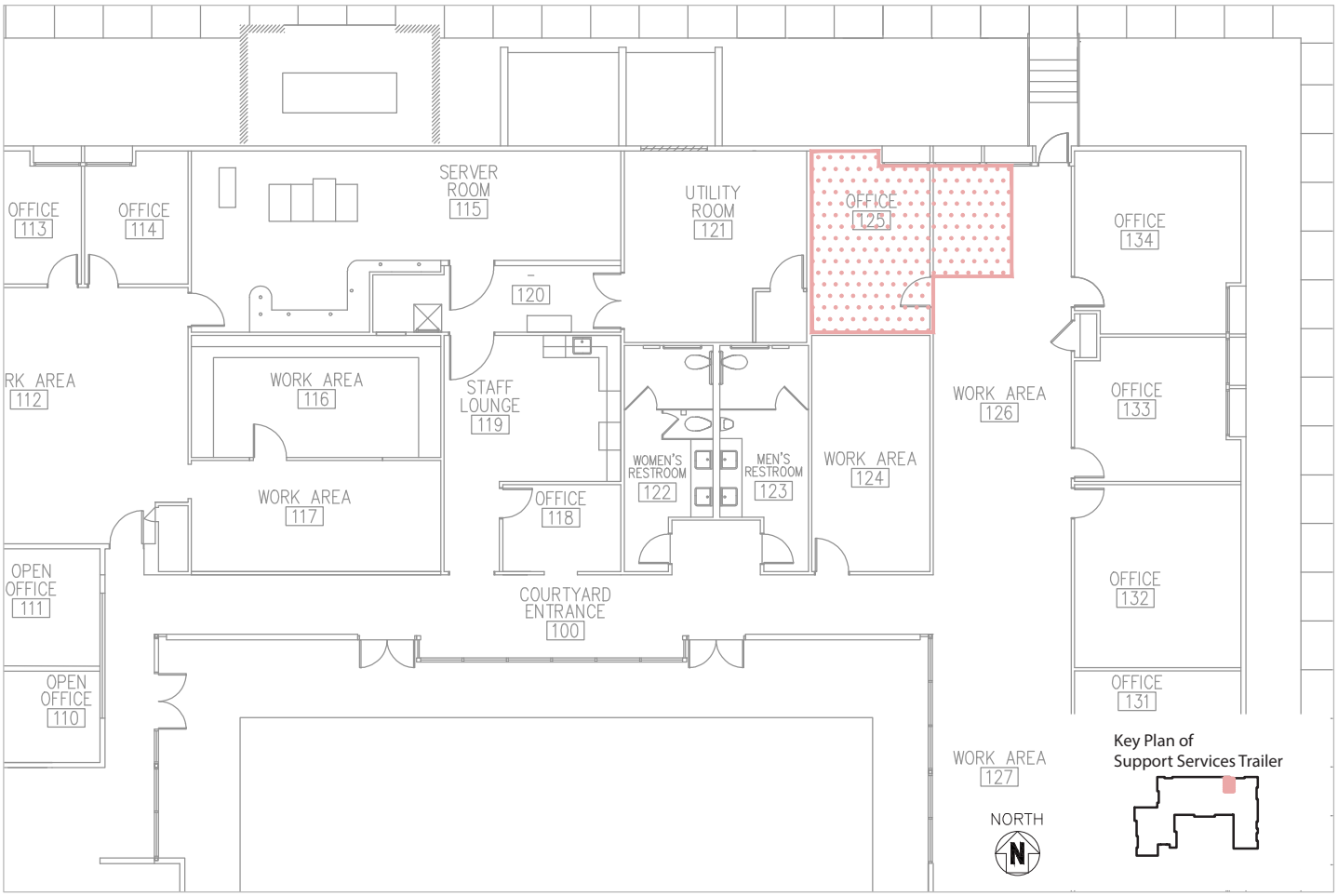
Ensures the safety and mobility of the Tracy's roadway network. Responsible for traffic operations, pavement management and neighborhood traffic calming.



Department Location City Facilities Other Buildings

Current Location of Engineering Traffic Division - SUPPORT SERVICE TRAILER

Occupied Area by Department



FINANCE

	Current			10 Year Plan		
Location	City Hall 333 Civic Center Plaza			Maintain current space at City Hall		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	21	0	21	24	0	24
Area (SF)	4,373			4,373		
Public Interaction & Outreach:	Yes					

Major Needs

- Break room and restroom reconfiguration
- Improved customer visibility at front counter
- Additional meeting spaces, internal and public

Department Description

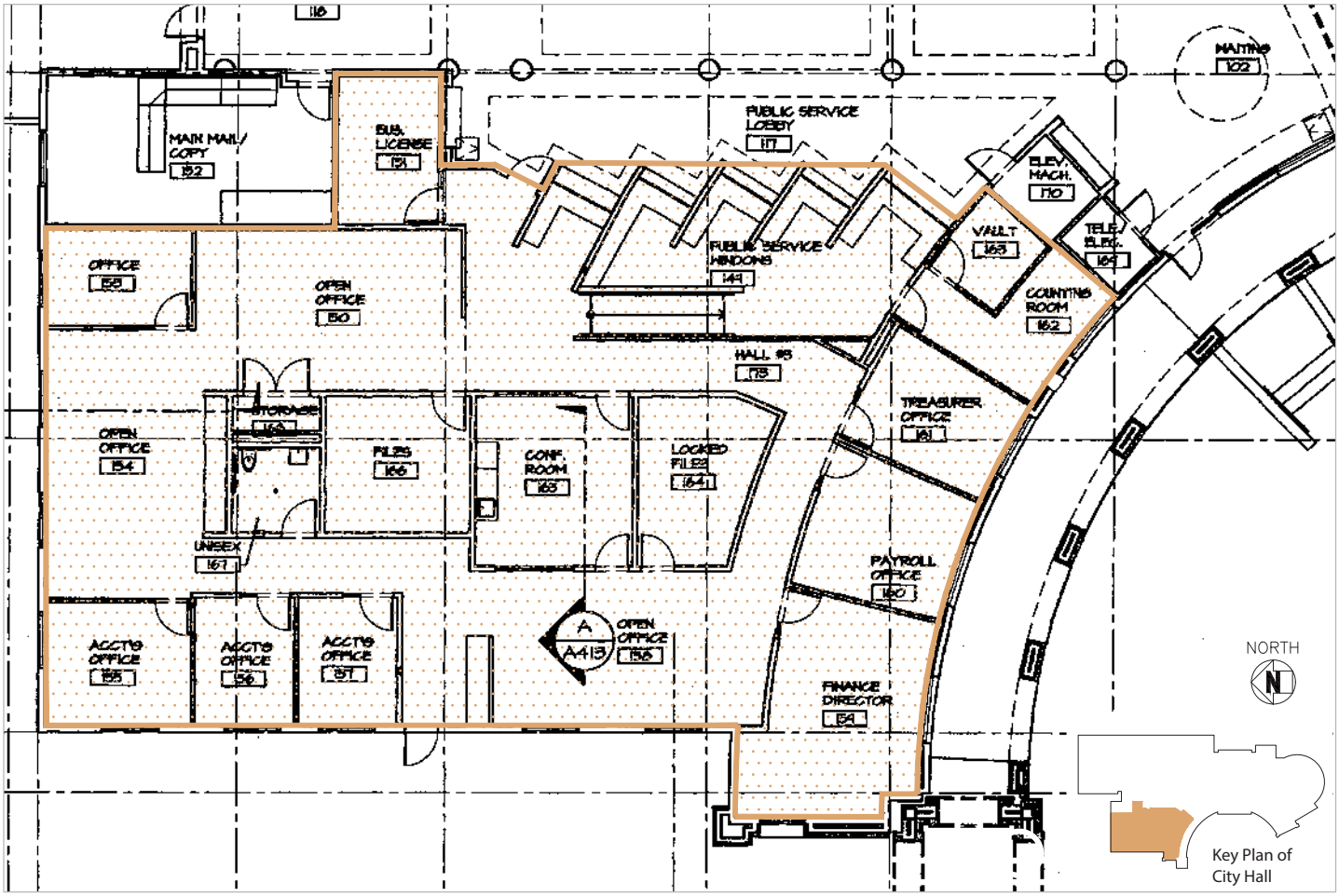
Responsible for all aspects of City budget preparation and accounting, as well as utility billing and business licensing for City of Tracy operations.



Department Location City Facilities Other Buildings

Current Location of Finance - CITY HALL (LOWER FLOOR)

Occupied Area by Department



HUMAN RESOURCES

	Current			10 Year Plan		
Location	City Hall 333 Civic Center Plaza			Maintain current space at City Hall with light improvements		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	10	0	10	10	0	10
Area (SF)	3,695			3,695		
Public Interaction & Outreach:	Yes					

Major Needs

- Underutilized storage area and alternate workstation area
- HR has no requested improvements at this time

Department Description

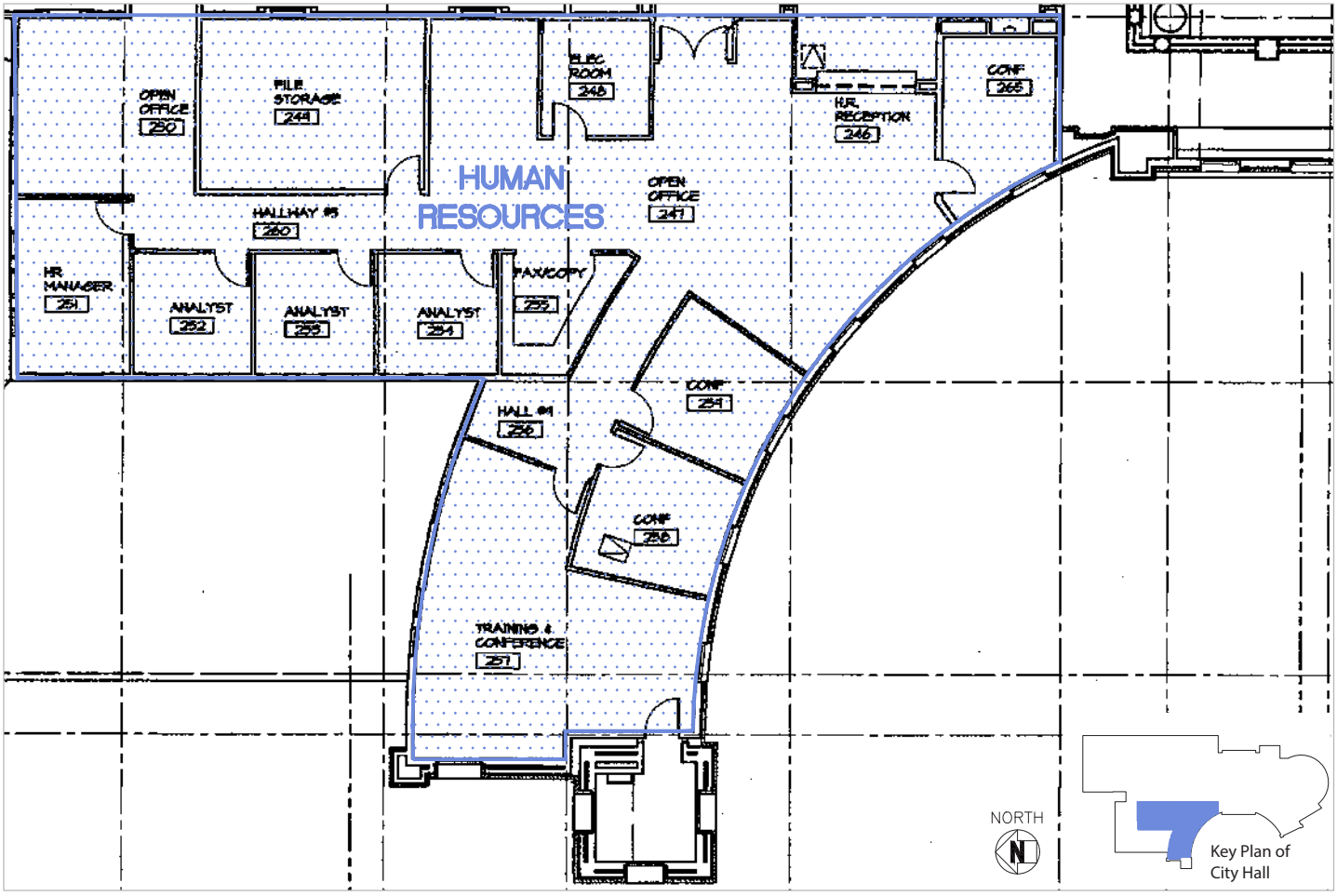
Tasked with training and skills development of City staff as well as recruitment and hiring of employees for the City of Tracy.



Department Location | City Facilities | Other Buildings

Current Location of Human Resources Division - CITY HALL (UPPER FLOOR)

Occupied Area by Department



OPERATIONS & UTILITIES

	Current			10 Year Plan		
Location	Boyd Service Center & Water Operations Facilities 520 S Tracy Blvd; 3900 Holly Drive; 6649 S Tracy Blvd			Renovate Boyd Service Center. Build auxiliary facility to be shared with Transit. ***Utilities Plan Not in Project**		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	122	0	122	150	0	150
Area (SF)	Site: 331,200 sf Facilities: 29,900 sf			Site: 500,000 sf Facilities: 60,000 sf		
Public Interaction & Outreach:				Yes		

Major Needs

- Shops are too small and create inefficient work environments
- More meeting space needed, internal and public
- Space for vehicles and equipment is lacking considerably
- Accidents have happened due to space constraints
- Corporation yard site is far too small for the number of vehicles, equipment and materials needed for operations

Department Description

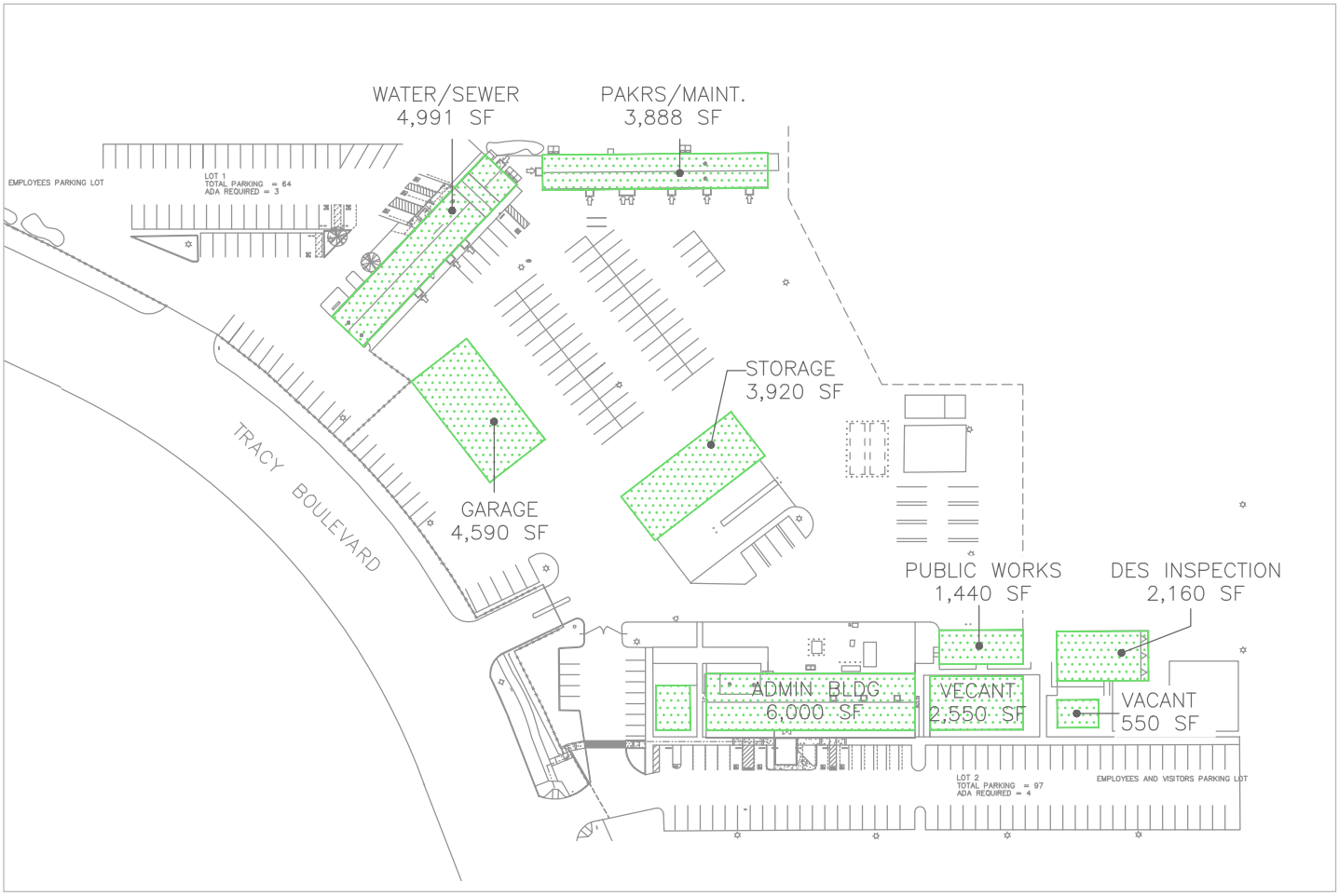
Responsible for maintaining City infrastructure including public facilities and parks throughout Tracy. Also responsible for maintenance and oversight of the City's Water Treatment Plant and Wastewater Treatment Plant.



Department Location City Facilities Other Buildings

Current Location of Public Works - BOYD SERVICE CENTER SITE PLAN

Occupied Area by Department



PARK & RECREATION - AIRPORT

	Current			10 Year Plan		
Location	Tracy Airport Durham Ferry Rd			Remodel existing space		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	2	0	2	3	0	3
Area (SF)	800					
Public Interaction & Outreach:	Yes					

Major Needs

- Workspace too small
- Need separated workspace for each staff member (Right now 2 staff share a desk)

Department Description

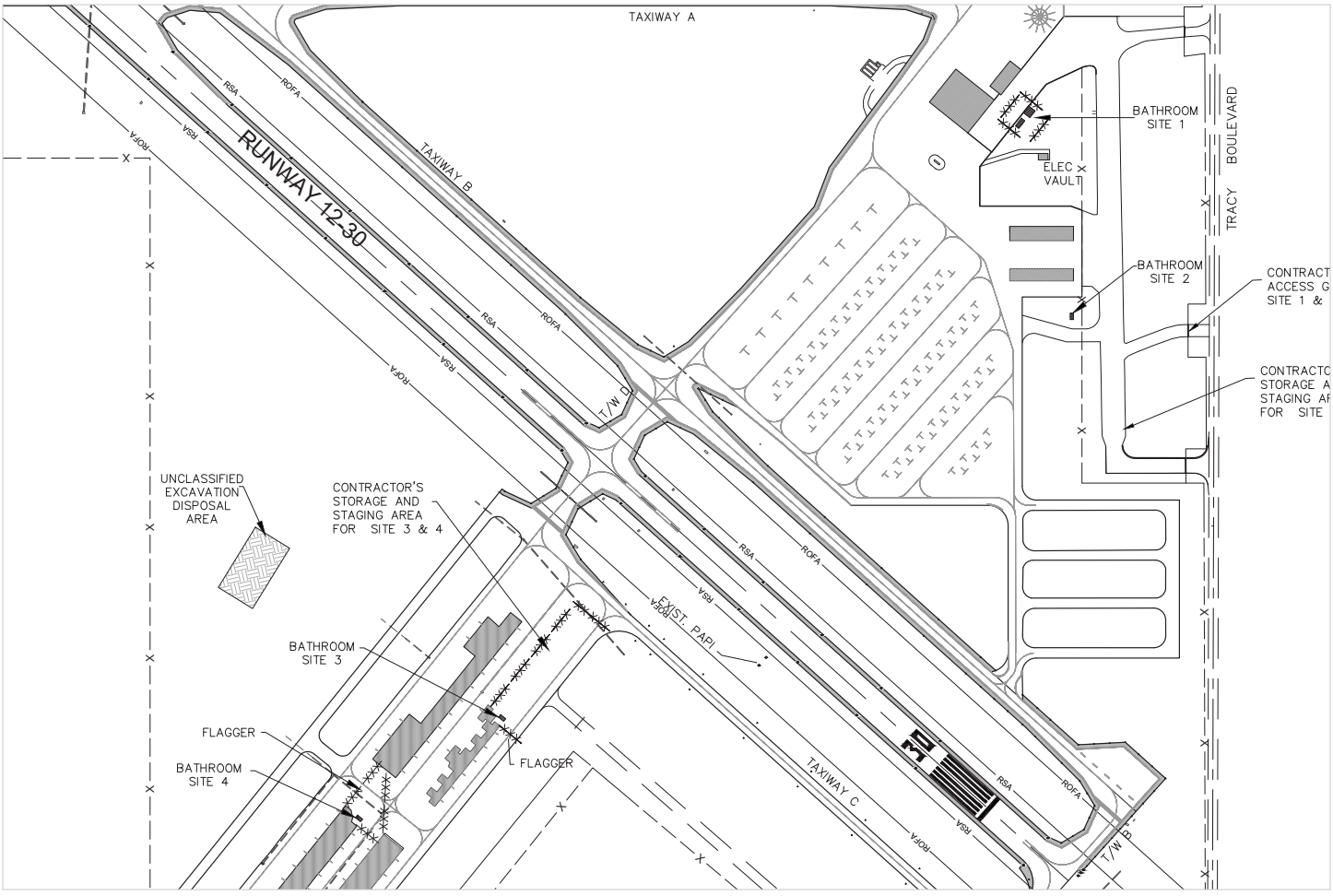
Responsible for overseeing operations at the Tracy Municipal Airport including maintaining City-owned airplane hangars and the Tracy Municipal Airport site.



Department Location City Facilities Other Buildings

Current Location of Park & Recreation - TRACY AIRPORT SITE PLAN

Occupied Area by Department



PARK & RECREATION - TRANSIT

	Current			10 Year Plan		
Location	Transit Station 50 E. 6th St			Transit Center Renovation Bus Maintenance & Storage Facility		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	3		3	4		4
Area (SF)	250			600		
Public Interaction & Outreach:	●			Yes		

Major Needs

- Office space is over capacity, with workspaces too small
- Transit maintenance staff have no offices

Department Description

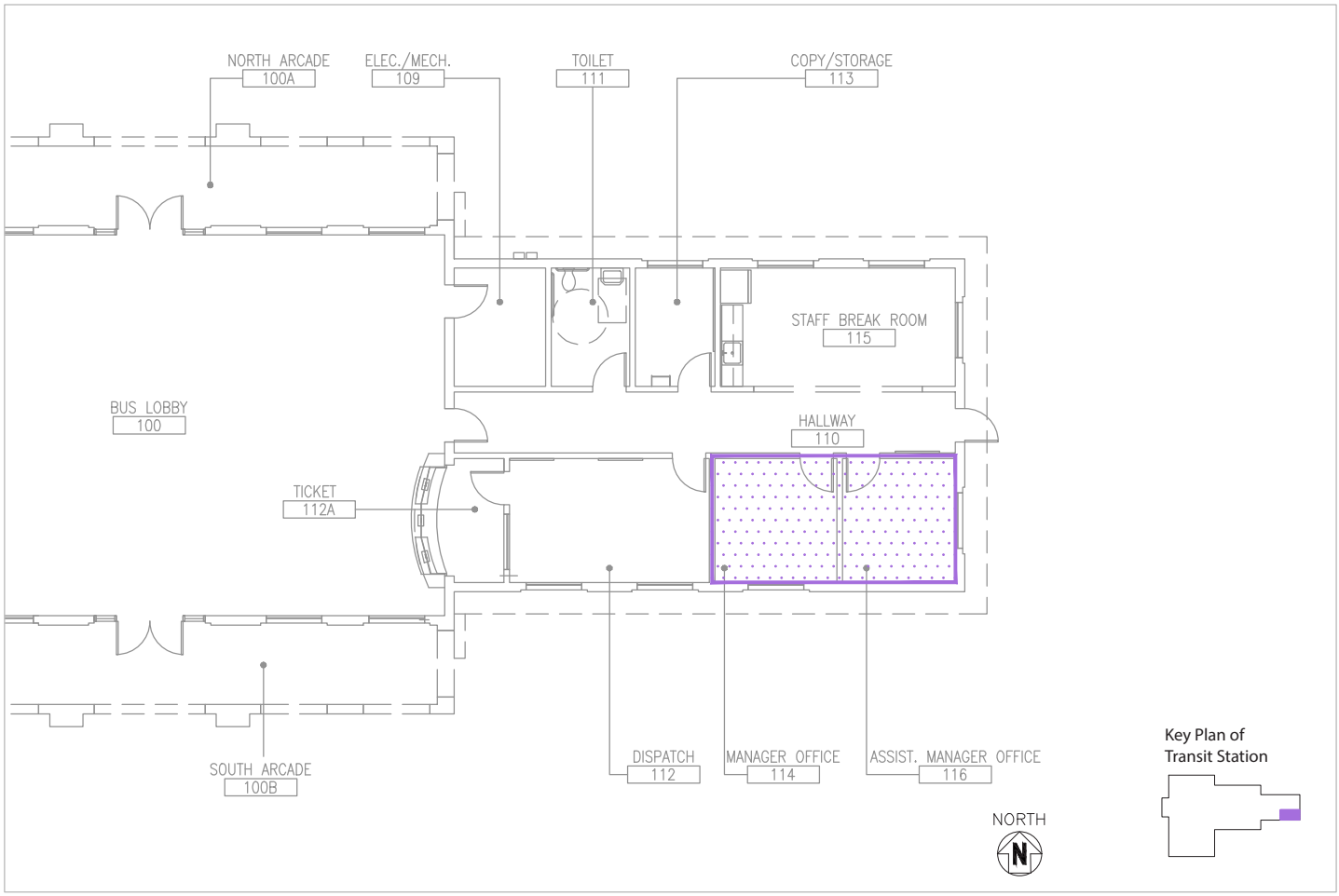
Responsible for overseeing operations at the Transit Station including TRACER Bus Services. Ensures public transportation is well-maintained and serviceable.



Department Location City Facilities Other Buildings

Current Location of Transit Division in Park & Recreation - TRANSIT STATION

Occupied Area by Department



PARK & RECREATION - COMMUNITY & RECREATION

	Current			10 Year Plan		
Location	City Hall, Senior Center & Community Center 333 Civic Center Plaza			Move all staff to new Admin Building		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	10	46	56	12	46	58
Area (SF)	2,066			6,750		
Public Interaction & Outreach:	Yes					

Major Needs

• Add few more spaces in City Hall for the 4 staff in the Community Center before Admin Building is built

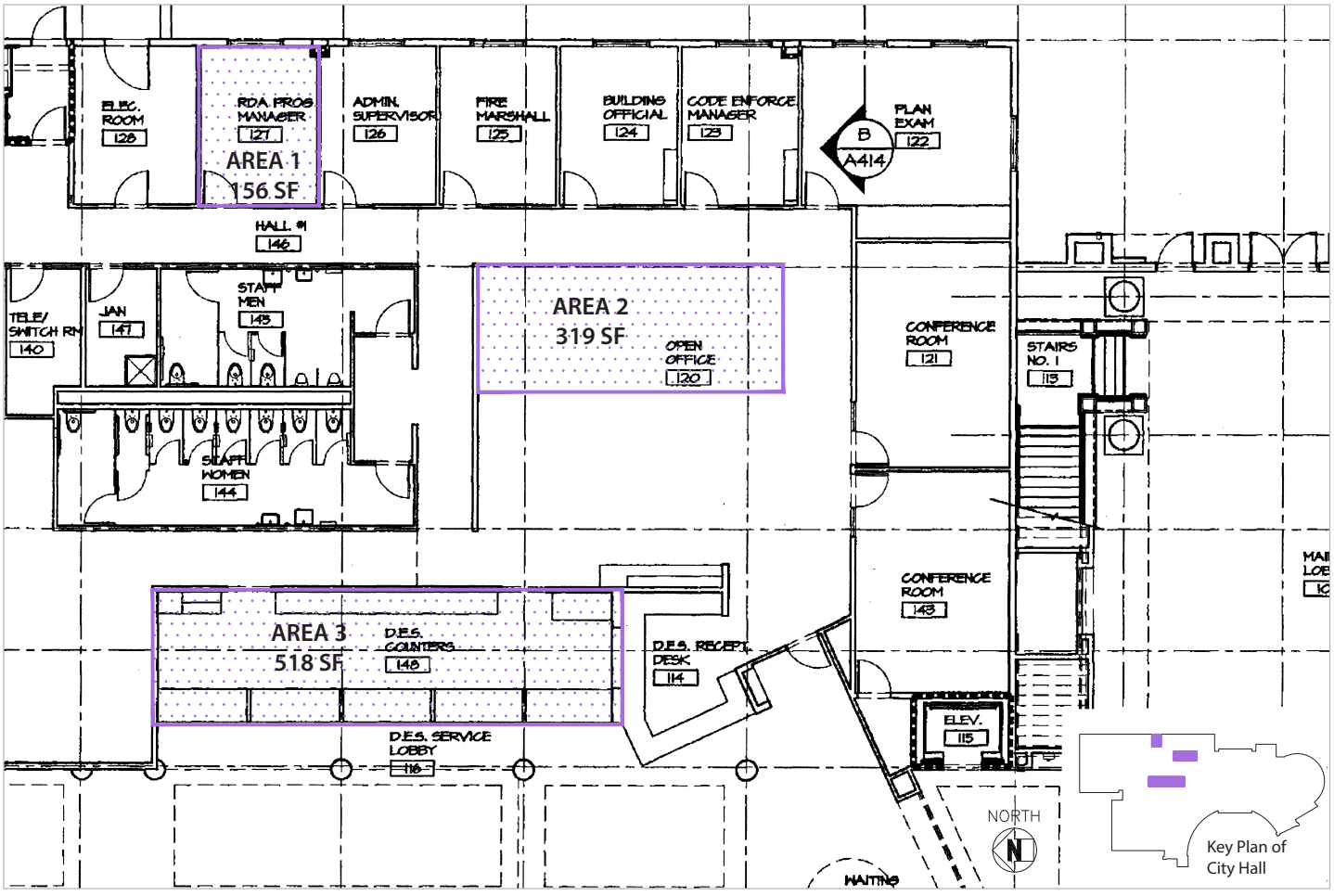
Department Description

Responsible for maintaining Tracy Community facilities and activities led out of community facilities. Leads summer programs and Parks & Recreation class offerings.



Department Location City Facilities Other Buildings

Current Location of Community & Recreation Division - AREA 1, 2 & 3: CITY HALL (LOWER FLOOR) Occupied Area by Department



PARK & RECREATION - COMMUNITY & RECREATION (CONTINUED)

	Current			10 Year Plan		
Location	City Hall, Senior Center & Community Center 333 Civic Center Plaza			Move all staff to new Admin Building		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	10	46	56	12	46	58
Area (SF)	2,066			6,750		
Public Interaction & Outreach:	Yes					

Major Needs

• Add few more spaces in City Hall for the 4 staff in the Community Center before Admin Building is built

Department Description

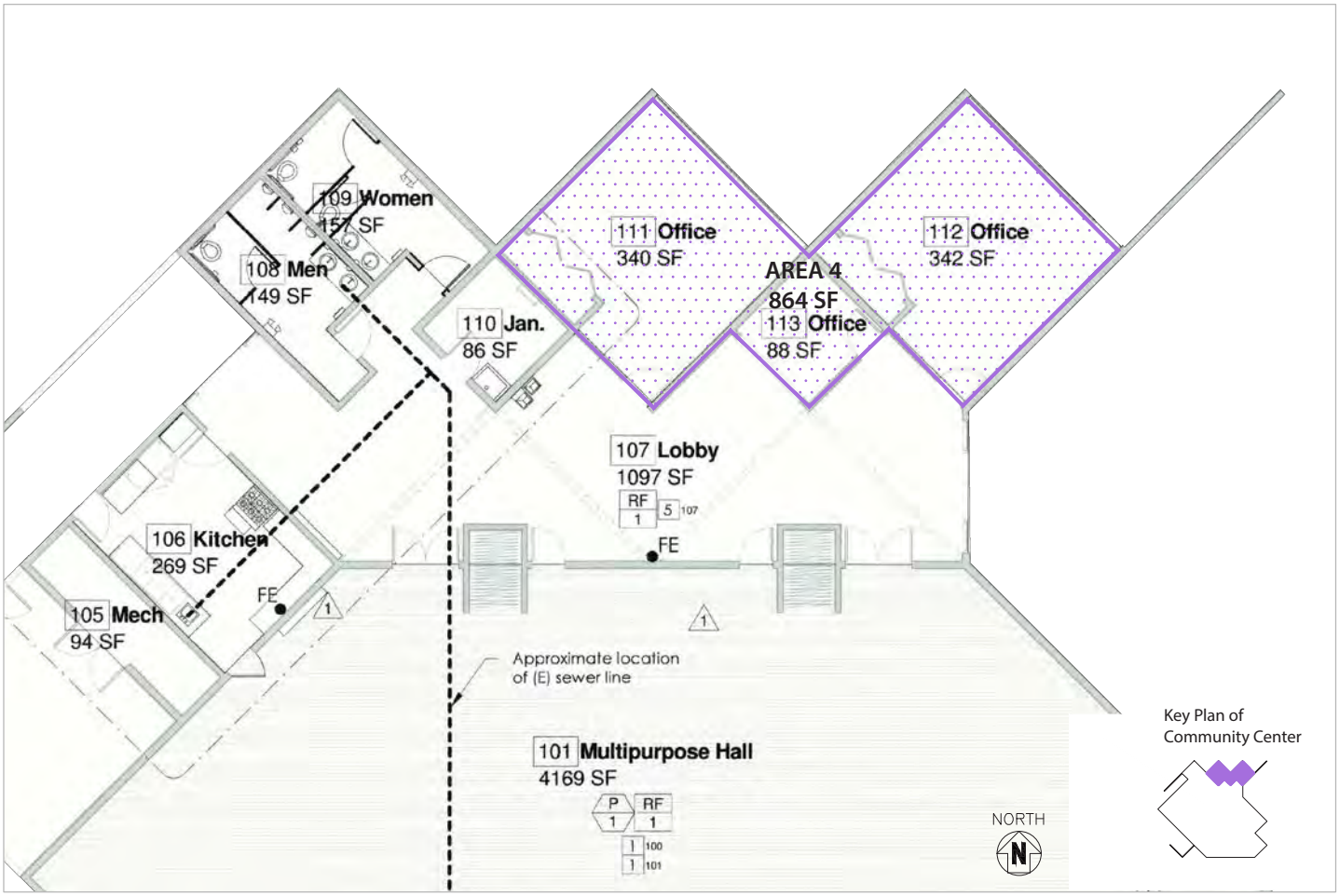
Responsible for maintaining Tracy Community facilities and activities led out of community facilities. Leads summer programs and Parks & Recreation class offerings.



Department Location City Facilities Other Buildings

Current Location of Community & Recreation Division - AREA 4: COMMUNITY CENTER

Occupied Area by Department



PARK & RECREATION - COMMUNITY & RECREATION (CONTINUED)

	Current			10 Year Plan		
Location	City Hall, Senior Center & Community Center 333 Civic Center Plaza			Move all staff to new Admin Building		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	10	46	56	12	46	58
Area (SF)	2,066			6,750		
Public Interaction & Outreach:	Yes					

Major Needs

• Add few more spaces in City Hall for the 4 staff in the Community Center before Admin Building is built

Department Description

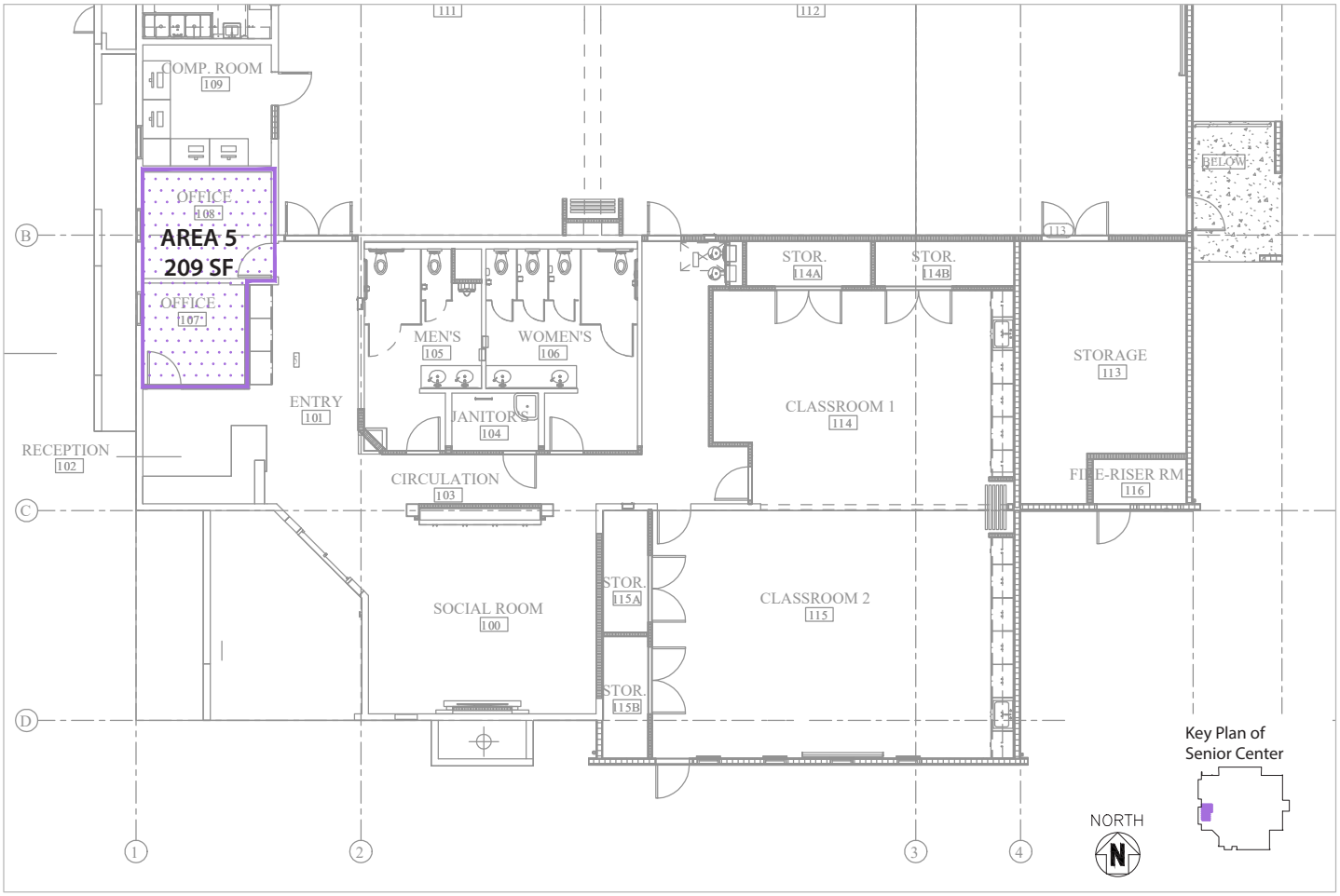
Responsible for maintaining Tracy Community facilities and activities led out of community facilities. Leads summer programs and Parks & Recreation class offerings.



Department Location City Facilities Other Buildings

Current Location of Community & Recreation Division - AREA 5: SENIOR CENTER

Occupied Area by Department



POLICE DEPARTMENT - CODE

	Current			10 Year Plan		
Location	City Hall 333 Civic Center Plaza			Remain in City Hall until construction of New Police Facility		
Number of Employees	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
	7	0	7	9	0	9
Area (SF)	643			900		
Public Interaction & Outreach:				No		

Major Needs

- Increase wall space
- Tables to review large plans

Department Description

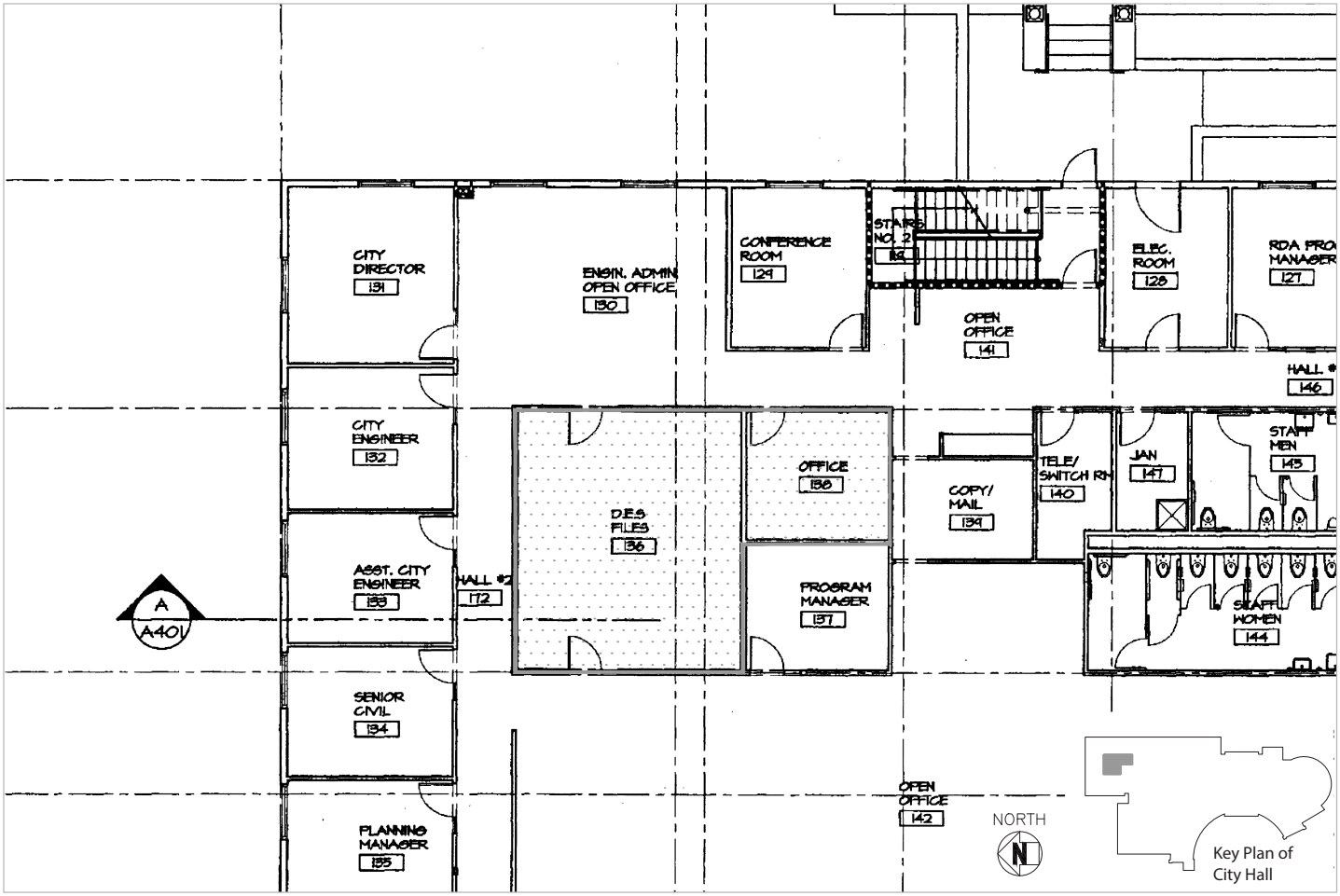
Responsible for overseeing the enforcement of City codes and regulations. Communicates with public regarding code violations and resolving of violations.



Department Location | City Facilities | Other Buildings

Current Location of Code Division in Police Department - CITY HALL (LOWER FLOOR)

Occupied Area by Department



IV. PROJECTS - NEW PROJECTS, RENOVATIONS, AND DEFERRED MAINTENANCE

a. Comparisons to Cities of Similar Size 396

b. Findings and Summary for Facilities Needs Projection 397

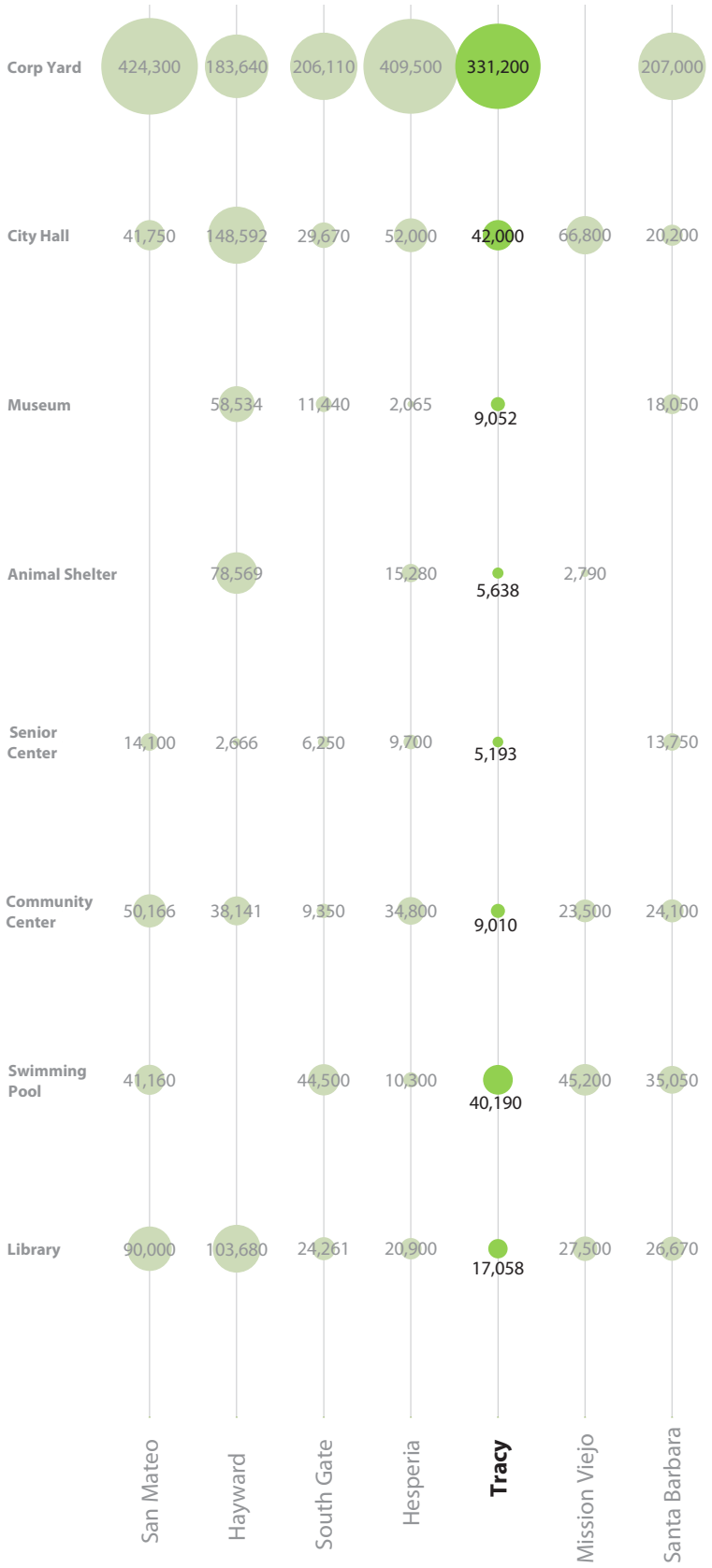
c. Proposed Projects - New 400

d. Proposed Projects - Renovations 412

e. Proposed Maintenance Schedule - Existing 418

Comparisons to Cities of Similar Size

* Government Facilities	# of Facilities	1	1	1	1	**1**		1
	Corp Yard (SF)	424,300	183,640	206,110	409,500	**331,200**	Unknown	207,000
	# of Facilities	1	1	1	1	**1**	1	1
	City Hall (SF)	41,750	148,592	29,670	52,000	**42,000**	66,800	20,200
Public Facilities	# of Facilities	0	1	1	1	**1**	0	1
	Museum (SF)	County Owned	58,534	11,440	2,065	**9,052**	County Owned	18,050
	# of Facilities	0	1	0	1	**1**	1	
	Animal Shelter (SF)	County Owned	78,569	County Owned	15,280	**5,638**	2,790	County Owned
	# of Facilities	1	1	1	1	**1**	1	1
	Senior Center (SF)	14,100	2,666	6,250	9,700	**5,193**	23,500	13,750
	# of Facilities	3	6	1	3	**1**		2
	Community Center (SF)	50,166	38,141	9,350	34,800	**9,010**		24,100
	# of Facilities	2	0	1	1	**1**	2	3
	Swimming Pool (SF)	41,160		44,500	10,300	**40,190**	45,200	35,050
	# of Facilities	1	1	2	1	**1**	1	1
	Library (SF)	90,000	103,680	24,261	20,900	**17,058**	27,500	26,670
Population		103,087	158,817	97,003	96,393	**95,931**	94,267	94,511
County		San Mateo	Alameda	Los Angeles	San Bernardino	**San Joaquin**	Orange	Santa Barbara
City		San Mateo	Hayward	South Gate	Hesperia	**Tracy**	Mission Viejo	Santa Barbara

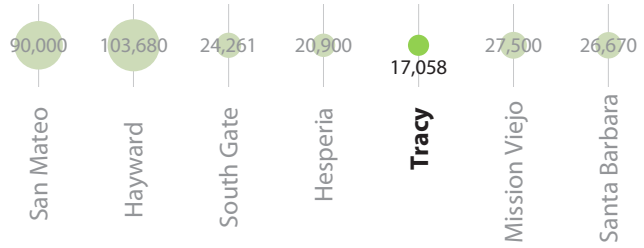


* Data obtained from public information and Google map

Findings and Summary for Facilities Needs Projection

Library

Facility Area Comparison:



Findings:
Existing Tracy Library is undersized and needs to be expanded for future population growth.

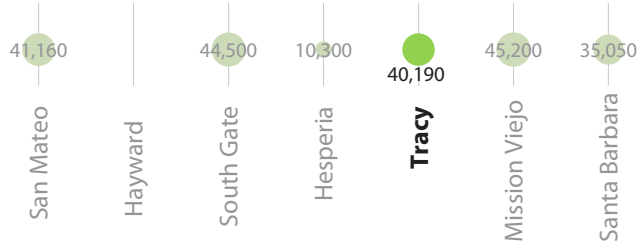
Recommendation:
Build a new City of Tracy Library at new location as an addition to the existing Tracy Library.

Proposed Action:
New Construction - New Tracy Library

Tracy's single library is smaller compared to other similarly sized cities. In addition to being undersized, the current library was constructed in the early 1960s with a moderate renovation in 1987. Improvements to the existing library would benefit the City if Tracy most in conjunction with the design and construction of a new library on the west portion of town. Additionally, the nearest libraries to the City of Tracy's library are the Mountain House Branch Library and Lathrop Branch Library, which are operated as one of 13 branches under the Stockon-San Joaquin County Public Library System along with the Tracy Library, but serve respective communities away from Tracy. Building a new library is recommended to serve the growing population of the City of Tracy.

Swimming Pool

Facility Area Comparison:



Findings:
Existing swimming pool has the proper size for the City but needs more space for water recreation activities for public access.

Recommendation:
Build a new Aquatic Center for additional water activities.

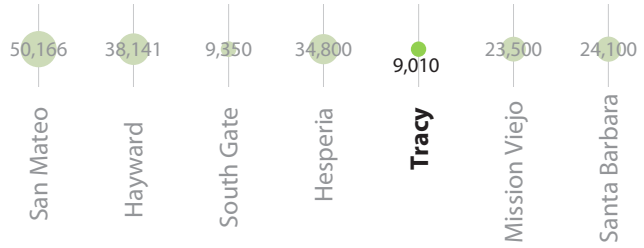
Proposed Action:
New Construction - New Tracy Aquatic Center

The Joe Wilson Pool is the City's main aquatic facility, located at Dr. Powers park. The swimming pool site is adequately sized compared to pool sites offered by other cities. However, amenities offered at Joe Wilson Pool are lacking in the sense that no gymnasium, waterslides or other publicly accessible water recreation is present other than lap pools. The existing pool site at the north portion of the City is recommended to be maintained for future service. A new Aquatic Center Facility that provides more of a recreational and family focus is recommended to be constructed in addition to continued operations of Joe Wilson Pool. This facility would best be located on the southwest portion of town near new family-style housing developments.

Findings and Summary for Facilities Needs Projection

Community Center & Senior Center

Facility Area Comparison:



Findings:
Existing Community Center and Senior Center are undersized and need to be expanded for future population growth.

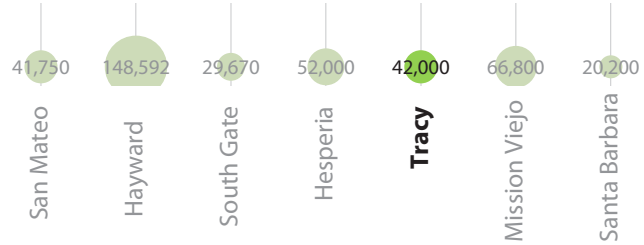
Recommendation:
Expand and renovate existing Community Center and Senior Center.

Proposed Action:
Expansion and renovation - Existing Community Center and Senior Center
New Construction - Multi-Generation Recreation Center

While the City of Tracy has significant community presence and interaction, both the Community Center and Senior Center are undersized compared to other similarly sized cities. The Community Center is roughly 1/3 of its ideal size. For Tracy Senior Center would ideally offer double the current floor space. Expansions of the existing facilities are recommended in conjunction with construction of the new Multi-Generation Center that will provide camaraderie and activities for residents and visitors of all ages.

Administration Facility

Facility Area Comparison:



Findings:
Existing City Hall has inadequate space for current administrative department needs and future staff growth.

Recommendation:
Build a new Administration Building for additional working areas at Civic Center adjacent to the existing City Hall.

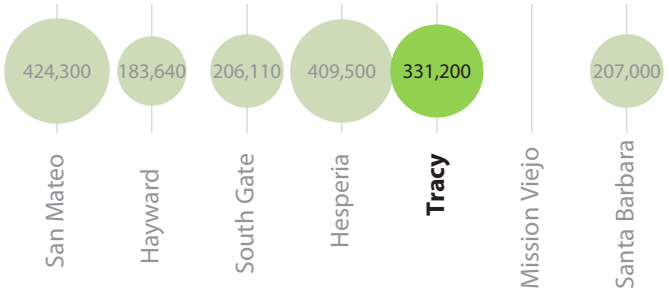
Proposed Action:
New Construction - New Tracy Administration Center

City Hall currently serves the City of Tracy adequately. The facility is composed of very high-quality finishes and departments comfortable in City Hall, such as Human Resources and Finance, will continue to remain comfortable after slight future renovations. Where the current City Hall is lacking in space for other administrative departments that are currently housed elsewhere or that will require significant future expansion. Current distribution of City administrative employees is between City Hall, the Social Services Building. Social Services Trailer and Police Annex Facility. Employees in Social Services Building and Trailer are partially located among one another and other departments who they interact with out of City Hall. It is recommended that the Social Services Building and Trailer be demolished to construct a new multi-story administration Building on that site. This would allow all administrative staff to relocate from Police Annex and S.S. Trailer to a more organized and cohesive work environment that has room for future additional employees. City Hall would remain housing administrative functions as best fits City needs.

Findings and Summary for Facilities Needs Projection

Corp Yard/Maintenance

Facility Area Comparison:



Findings:
The existing Tracy Corp Yard is undersized and has a limited room available for expansion. New site and new facilities are needed for work areas, shops and vehicle maintenance.

Recommendation:
Build a new Public Works Maintenance Facility at new location.

Proposed Action:
New Construction - New Bus Maintenance Facility

The Boyd Service Center site is comparably sized to those used by other cities. Where Boyd is lacking in the condition of shops and maintenance facilities used to keep the City's parks facilities and storage well-kept and maintained. Vehicle maintenance space is largely undersized for current needs and administrative facility site at Boyd contains little room for expansion. A purchasable site exists adjacent to and access Tracy Blvd. from the current Boyd Service Center which may be used for expansion. Tracy Transit Operations also require space to maintain their fleet of large buses and bus equipment. The purchasable site across from Boyd is recommended to be used as a joint Transit and Operations & Utilities Maintenance Facility, The joint facility would contain drive-through vehicle bays for buses and a dedicated public works vehicle maintenance area with administrative and office space for both departments. The construction of the new facility will allow Transit Operations easier access to maintenance office and conference space while the existing Boyd Service Center can be tailored for future improvements aligning with other Operations & Utilities needs.

Homeless Shelter

Findings:
New temporary housing or shelter is needed to address homelessness in City of Tracy and San Joaquin County.

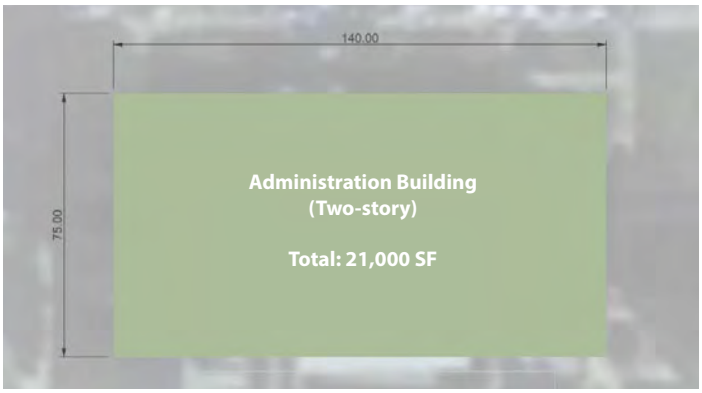
Recommendation:
Build a new Temporary Housing for homeless.

Proposed Action:
New Construction - New Emergency Temporary Housing

Just like the surrounding community of Livermore, and Stockton, the City of Tracy is experiencing an increase in the number of homeless residents. A study referenced in the Tracy Press explains that current homeless residents in Tracy are almost double the 90 estimated residents homeless in 2017. The homelessness problem is large-scale when viewed from a County level, with an estimated 2,629 homeless individuals living in San Joaquin County in 2019. At the time of the study, over 1,500 of their individuals were unsheltered compared to less than 600 unsheltered individuals in 2017. Temporary homeless housing at the site of the wastewater treatment facility will allow shelter for residents who need and will benefit from it. The temporary housing will allow Tracy to understand trends and needs firsthand and will assist in the future development of a more permanent solution.

New Project - Administration Building





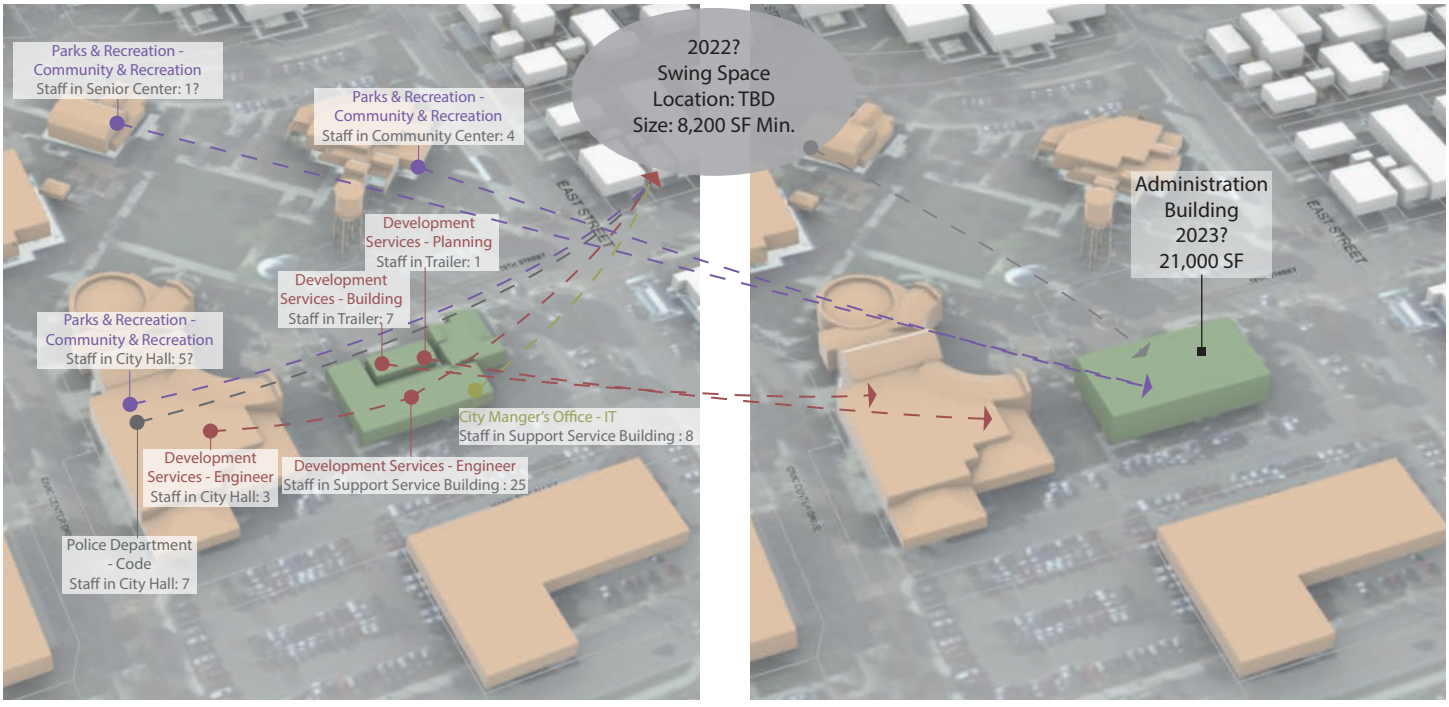
New Facilities Existing City Facilities Other Existing Buildings

Project Description
The new Administration building will allow for more organization and tailored workspaces for city staff currently split between the Social Services Building, Police Annex and Social Services Trailer.

Project Information	
Location	325 Civic Center Plaza
Site Size (SF)	20,000
Facility Size (SF)	21,000
Occupancy Capacity	84
Completion Date	2028
Estimated Cost	$24,242,550

Move-In Departments /Divisions			
Department	Current Location	Staff	Space
Development			
Engineering	City Hall & Support Services Bldg.	36	9,000
City Manager's Office			
Clerk	Support Services Bldg.	10	1,800
Parks & Recreation			
Community & Recreation	City Hall, Senior Center & Community Center	10	6,750
Police Department			
Code Enforcement	333 Civic Center Plaza	9	2250
Total		65	19800

Project Logistics



New Project - Bus Maintenance Facility / Corp Yard





Project Description

This new facility will allow improved vehicle maintenance, storage, office and shops space for both the Transit Division and Operations & Utilities. Potential items to be programmed include Bus Maintenance Bays, Transit office and training space, electric charging infrastructure for buses, bus wash, and parking for multiple buses. Operations & Utilities spaces may include new shops, offices, parking and support spaces. The new facility will supplement existing operators at the Tracy Transit Station and Boyd Service Center.

Project Information

Location	325 Civic Center Plaza
Site Size (SF)	9.9 Acres
Facility Size (SF)	17,400
Capacity	25 Employees
Completion Date	2027
Estimated Cost	$36,400,000

Move-In Departments /Divisions

	Current Location	Staff	Space (SF)
Parks & Recreation			
Transit	Transit Station	4	600
Operations & Utilities			
Operations & Utilities	Boyd Service Center	15	2,250

New Facilities Existing City Facilities Other Existing Buildings



New Project - Tracy Hills Operations & Utilities Facility

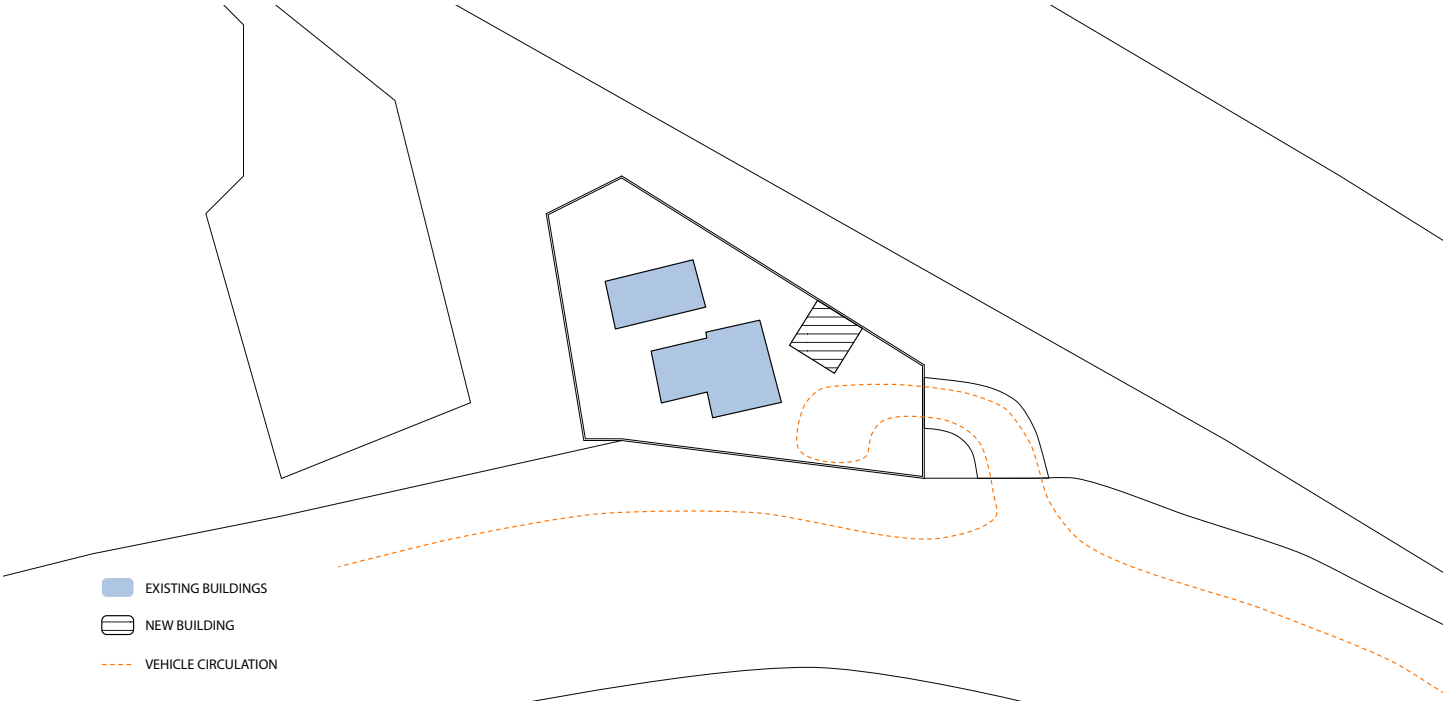


New Facilities Existing City Facilities Other Existing Buildings

Project Description
The Tracy Hills Operations & Utilities Facility will provide parking and office space for one to two employees. This office space will be designed to be sharable with the ability to let staff sit down and work for short periods as necessary throughout the day.

Project Information	
Location	Tracy Hill
Site Size (SF)	9,500
Facility Size (SF)	400
Capacity	1-2 Employees
Completion Date	2025
Estimated Cost	$426,920

Move-In Departments /Divisions	Current Location	Staff	Space (SF)
Operations & Utilities			
Operations & Utilities	Boyd Service Center	1-2	400 SF



New Project - Aquatic Center

1. Competition Pool
2. Recreation Pool
3. Lazy River
4. Slides
5. Toddler Pool
6. Play Structure and Wet Deck
7. Future Expansion
8. Entrance Location
9. Food and Beverage
10. Support Facilities
11. Parking Lot
12. Drop-Off Location



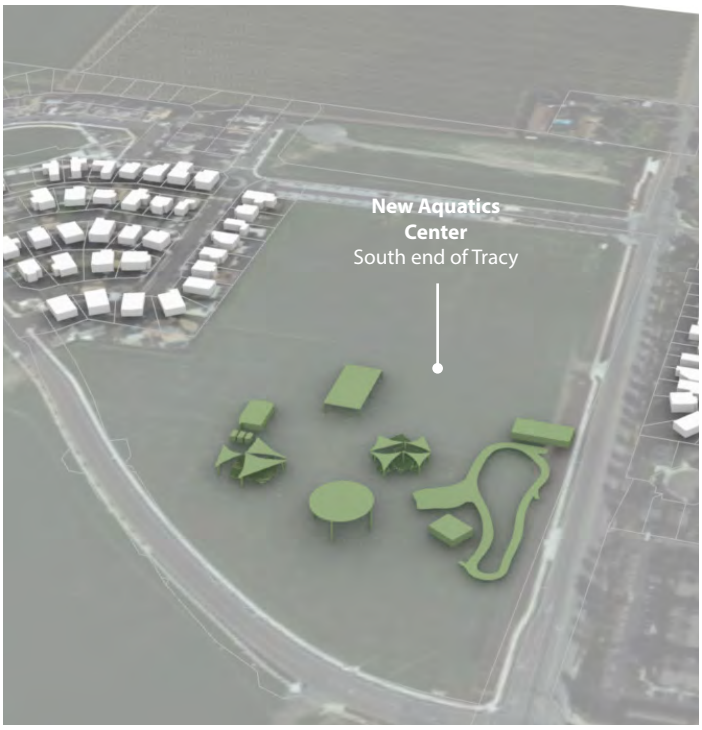
Project Description
The Aquatic Center will supplement the Joe Wilson Pool as another recreational aquatic offering for the City of Tracy's community. The aquatic center will have various items including multiple pools, waterslides and a lazy river. The space may have employees from the Parks & Recreation department.

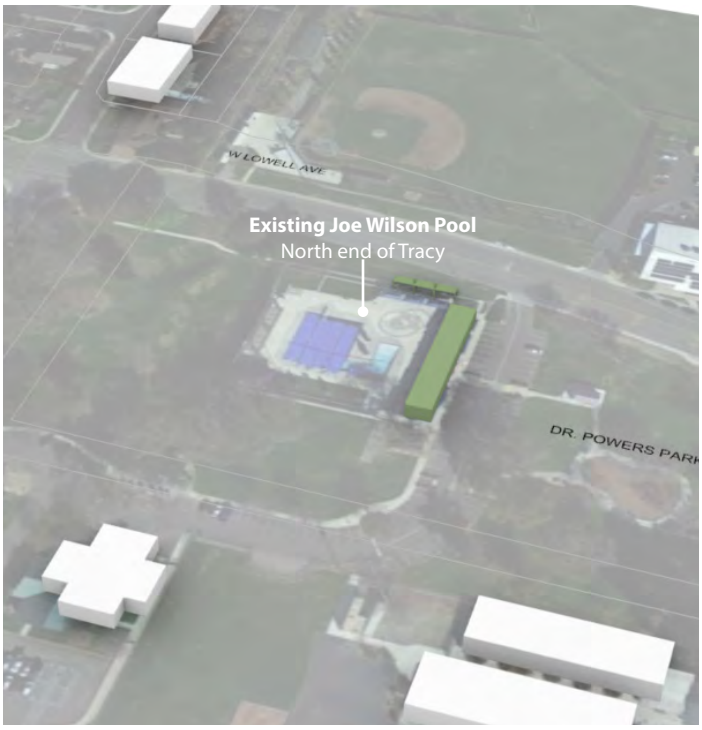
Project Information	
Location	Summit Drive & Corral Hollow Road
Site Size (SF)	480,000
Facility Size (SF)	Refer to Parks Master Plan
Capacity	Refer to Parks Master Plan
Completion Date	2030 (Refer to Parks Master Plan)
Estimated Cost	$62,688,368

Move-In Departments /Divisions			
	Current Location	Staff	Space (SF)
Parks & Reconstruction	Refer to Parks Master Plan		

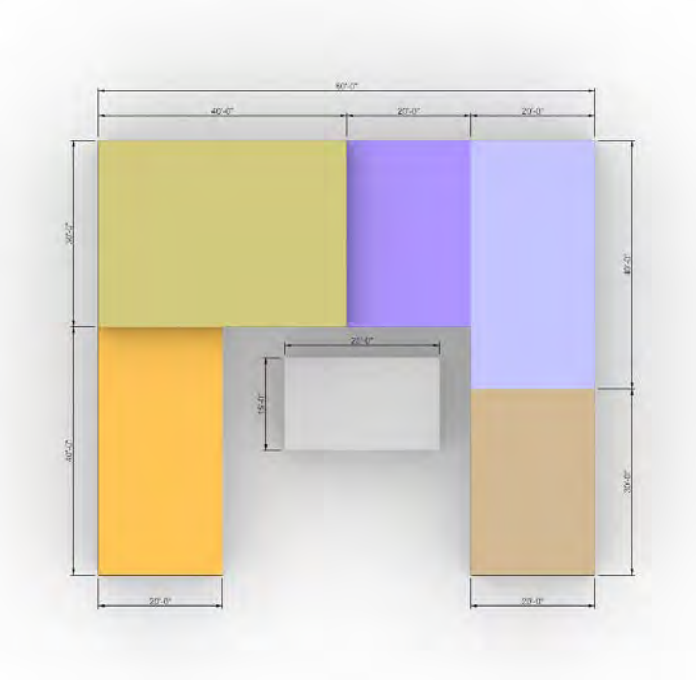
Project Location Relative to Existing Facility

New Facilities Existing City Facilities Other Existing Buildings





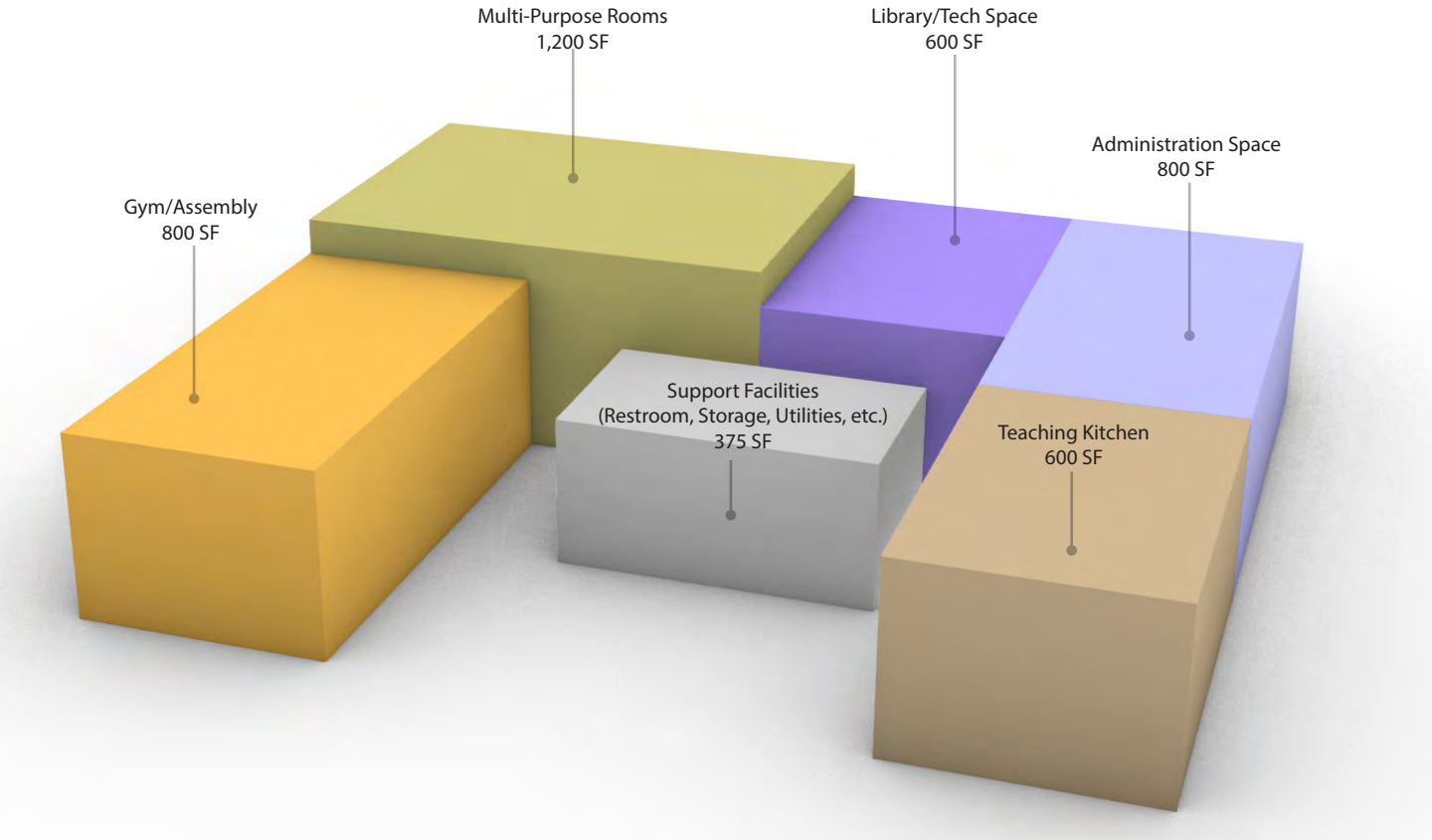
New Project - Multi-Generational Recreation Center



Project Description
The Multi-Generational Recreation Center will supplement the existing Community Center and Senior Center with increased City space for community recreation and gathering opportunities. Potential spaces to be programmed include a gymnasium multi-purpose rooms, tech offerings, educational kitchen, administrative space and support spaces.

Project Information	
Location	Refer to Parks Master Plan
Site Size (SF)	Refer to Parks Master Plan
Facility Size (SF)	52,637
Capacity	Refer to Parks Master Plan
Completion Date	2025 (Refer to Parks Master Plan)
Estimated Cost	$87,577,232

Move-In Departments /Divisions	Current Location	Staff	Space (SF)
Parks & Recreation			



New Project - Community Center

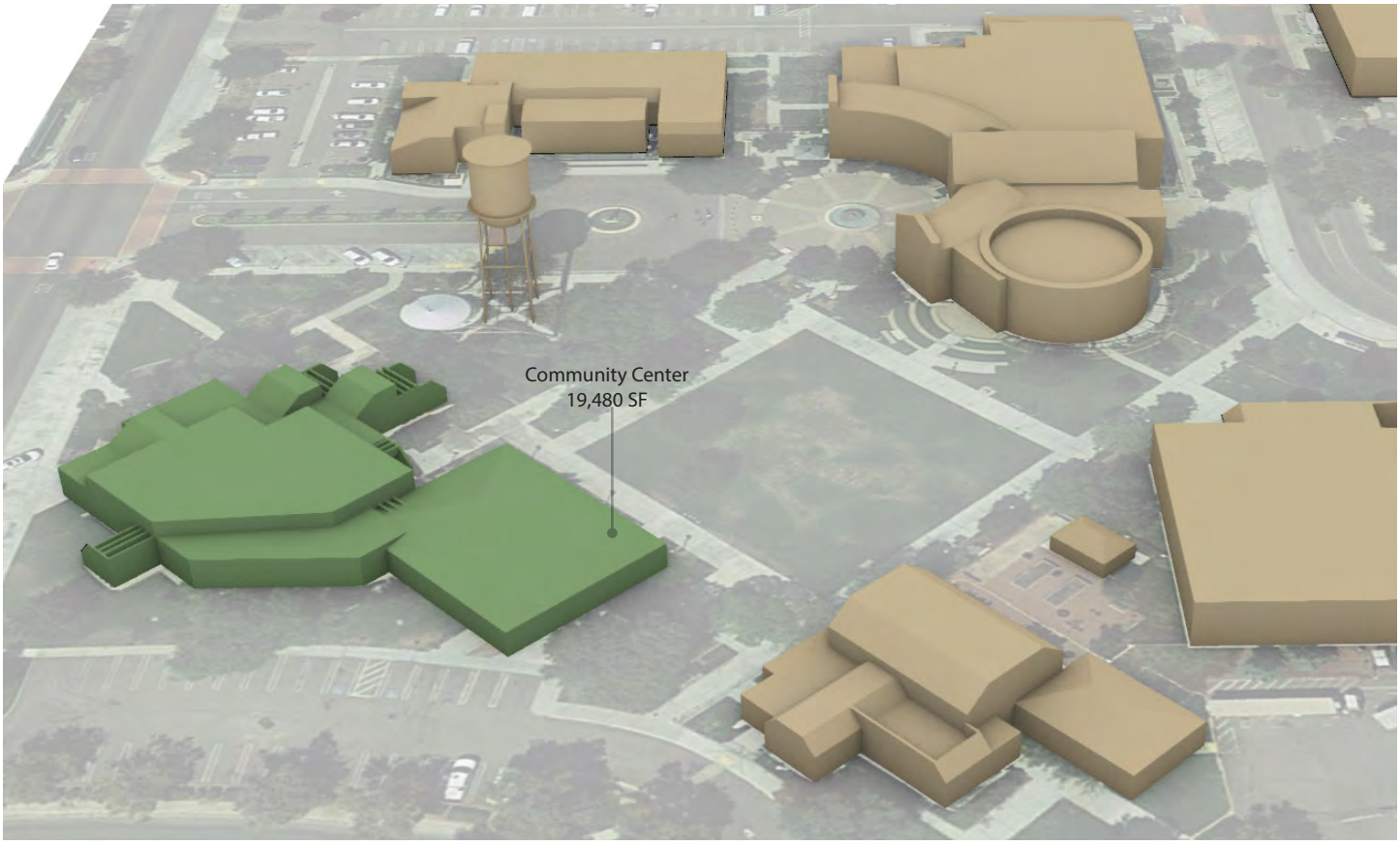


New Facilities Existing City Facilities Other Existing Buildings

Project Description
The new Community-oriented Center will combine the existing Community Center and Senior Center for community services and public activities.

Project Information	
Location	Civic Center
Site Size (SF)	46,000
Facility Size (SF)	10,480 (Existing) + 4,000 (Upgrade) + 9,000 (New)
Capacity	City staff + public
Completion Date	2040
Estimated Cost	$9,500,000

Move-In Departments /Divisions	Current Location	Staff	Space (SF)
Parks & Recreation			



New Project - Civic Center Parking Garage



New Facilities Existing City Facilities Other Existing Buildings

Project Description
The new Parking Garage will provide additional parking stalls for civic center and surrounding neighborhoods.

Project Information	
Location	Civic Center
Site Size (SF)	34,000
Facility Size (SF)	20,000 x 3 levels
Capacity	Parking
Completion Date	2036
Estimated Cost	$12,580,000

Move-In Departments /Divisions			
	Current Location	Staff	Space (SF)



New Project - Tracy Library



Parcel Option 1 - Joe Pombo Pkwy (W Grant Line Rd & I205)
Parcel Option 2 - N Corral Hollow Rd (Near Grant Line Rd)



Parcel Option 3 - W Linne Rd & S Corral Hollow Rd

Project Description
A new City of Tracy library would supplement the existing library which is undersized to continue to provide library services to Tracy's expanding population. Potential program offerings at the new library include educational space and a teen center. Familiar library offerings would be provided.

Project Information	
Location	See parcel options on left side.
Site Size (SF)	TBD after parcel selection
Facility Size (SF)	20,000
Capacity	Public Use
Completion Date	2032
Estimated Cost	$25,577,000

Move-In Departments /Divisions	Current Location	Staff	Space (SF)
TBD			

New Facilities Existing City Facilities Other Existing Buildings



Option 1 - Joe Pombo Pkwy (W Grant Line Rd & I205)
Option 2 - N Corral Hollow Rd (Near Grant Line Rd)



Option 3 - W Linne Rd & S Corral Hollow Rd

New Project - Temporary Emergency Housing



Project Description
Construction of a temporary emergency housing shelter will allow the city to respond to increased levels of homelessness in the area in current years. The temporary shelter is proposed to be located on the site of the current Waste Waters Treatment facility. Numbers of residents to house will be decided upon further program analysis. Construction of this facility will allow the City of Tracy to form more accurate future predictions and provide better service related to the needs of the homeless community.

Project Information	
Location	370 Arbor Ave
Site Size (SF)	9,596
Facility Size (SF)	5,000-10,000
Capacity	TBD
Completion Date	Winter 2023
Estimated Cost	$10,000,000

Move-In Departments /Divisions			
	Current Location	Staff	Space (SF)



New Project - Senior Center

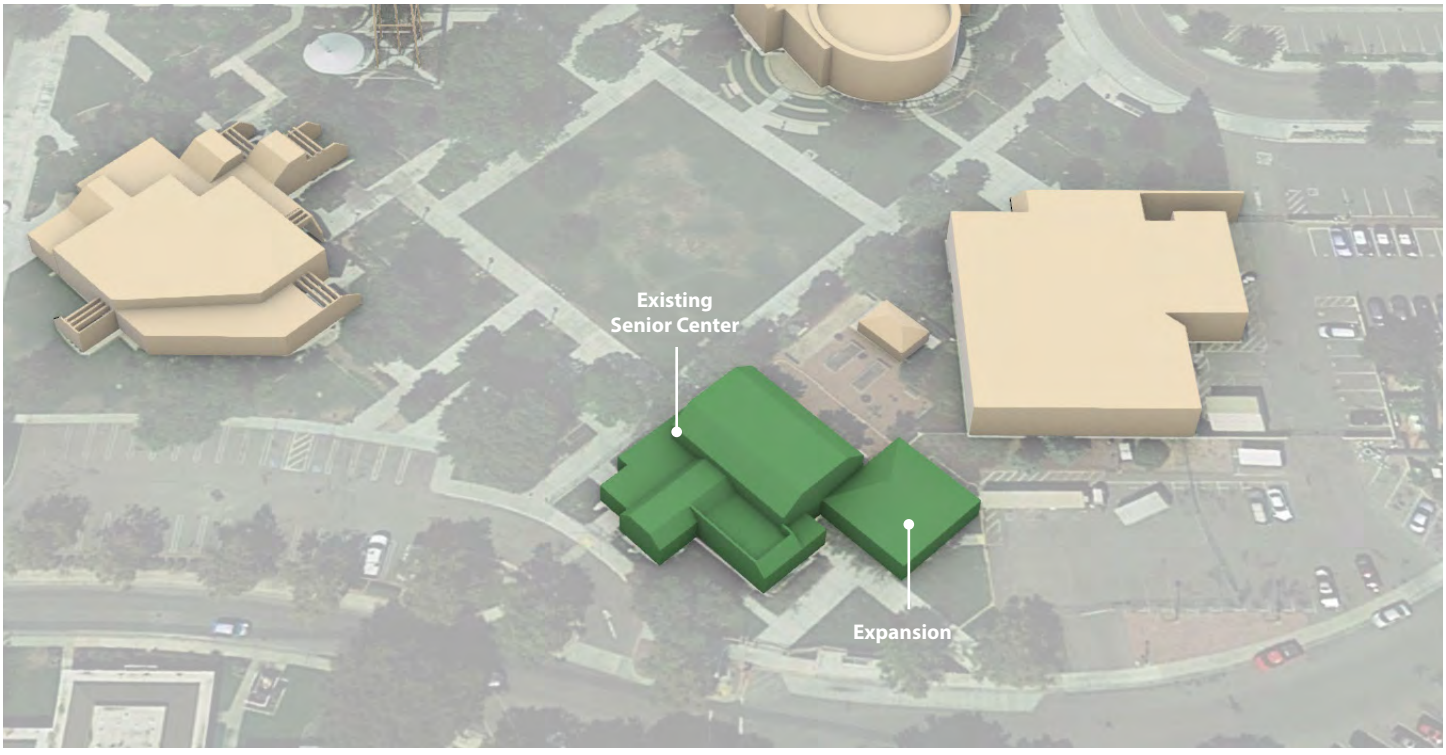


New Facilities Existing City Facilities Other Existing Buildings

Project Description
The Senior Center will be expanded to provide additional space for community gathering and events. The increased size of the Senior Center will allow Tracy to properly serve its senior population through buildout.

Project Information	
Location	Existing Senior Center
Site Size (SF)	Existing site
Facility Size (SF)	5,224 (Existing) + 1,000 (Upgrade) + 5,000 (New)
Capacity	Public Use (age 50+)
Completion Date	2038
Estimated Cost	$5,500,001

Move-In Departments /Divisions			
	Current Location	Staff	Space (SF)



New Project - Boyd Service Center

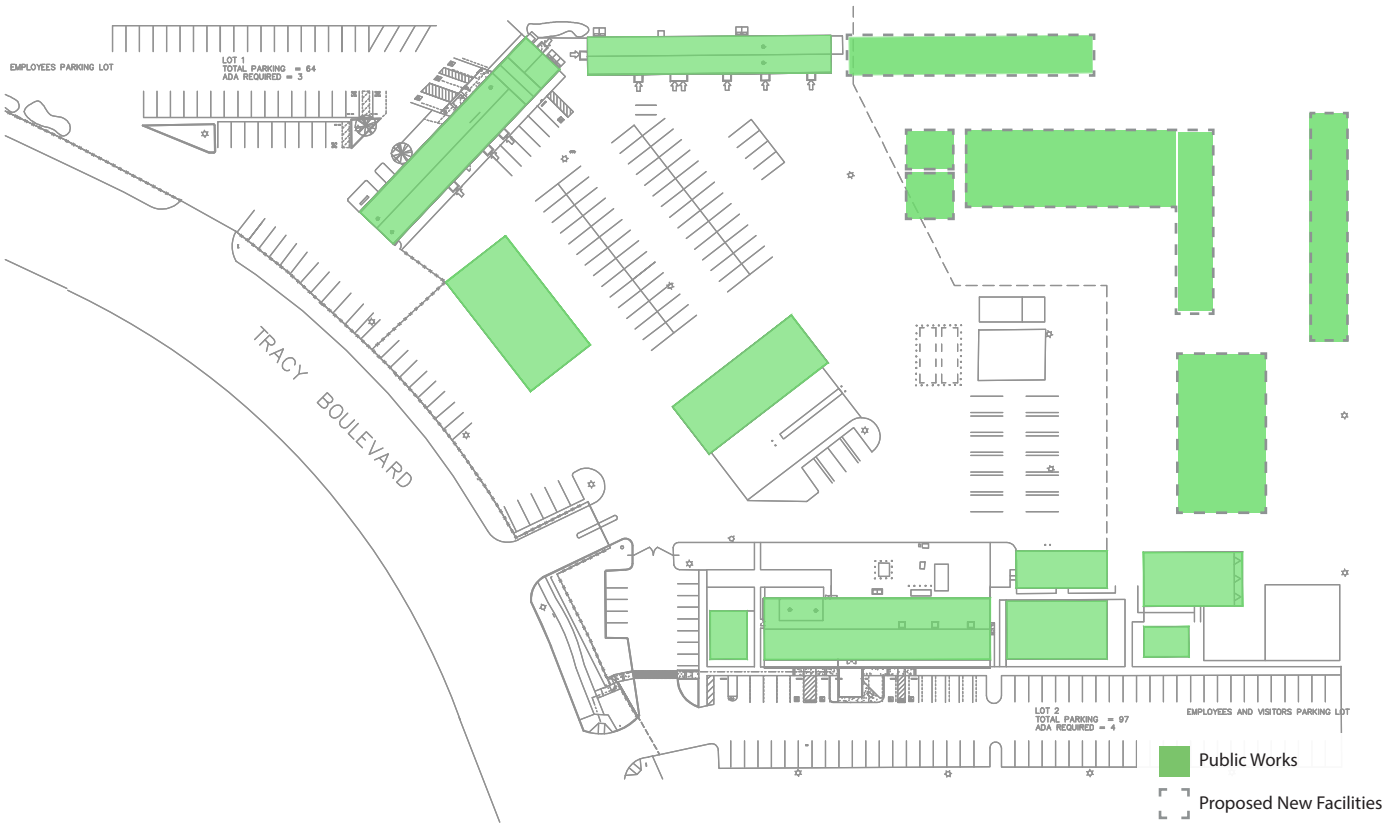


Project Description
The Boyd Service Center renovation includes the expansion for additional Operations & Utilities facilities on the existing site. Those new facilities will serve the department to accommodate increasing number of staff in the future and provide adequate storage space.

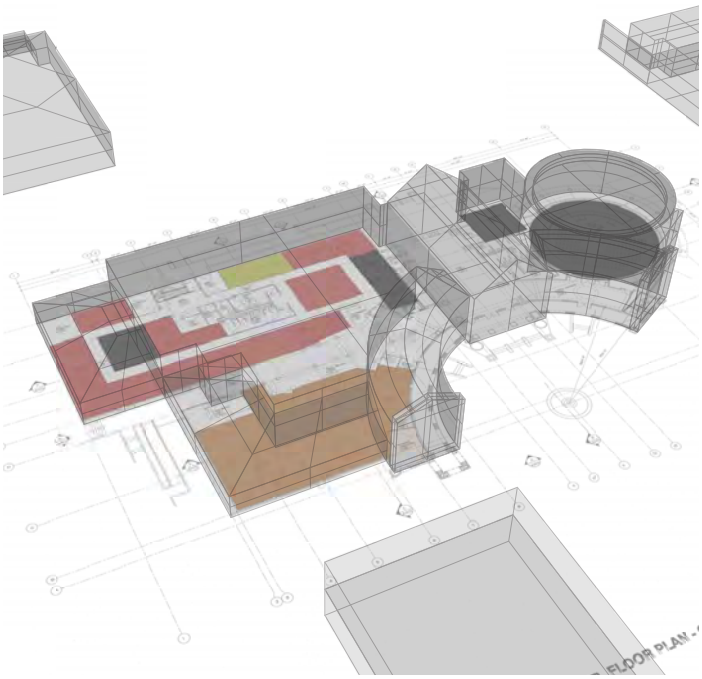
Project Information	
Location	Existing Byod Service Center
Site Size (SF)	Existing Site
Facility Size (SF)	28,370 (overall) + 2,500 (admin)
Capacity	Operations & Utilities staff
Completion Date	2027
Estimated Cost	$37,301,490

Move-In Departments /Divisions	Current Location	Staff	Space (SF)
Operations & Utilities			
Overall			28,370
Administartion			2,500

PROPOSED DIAGRAM - SITE PLAN



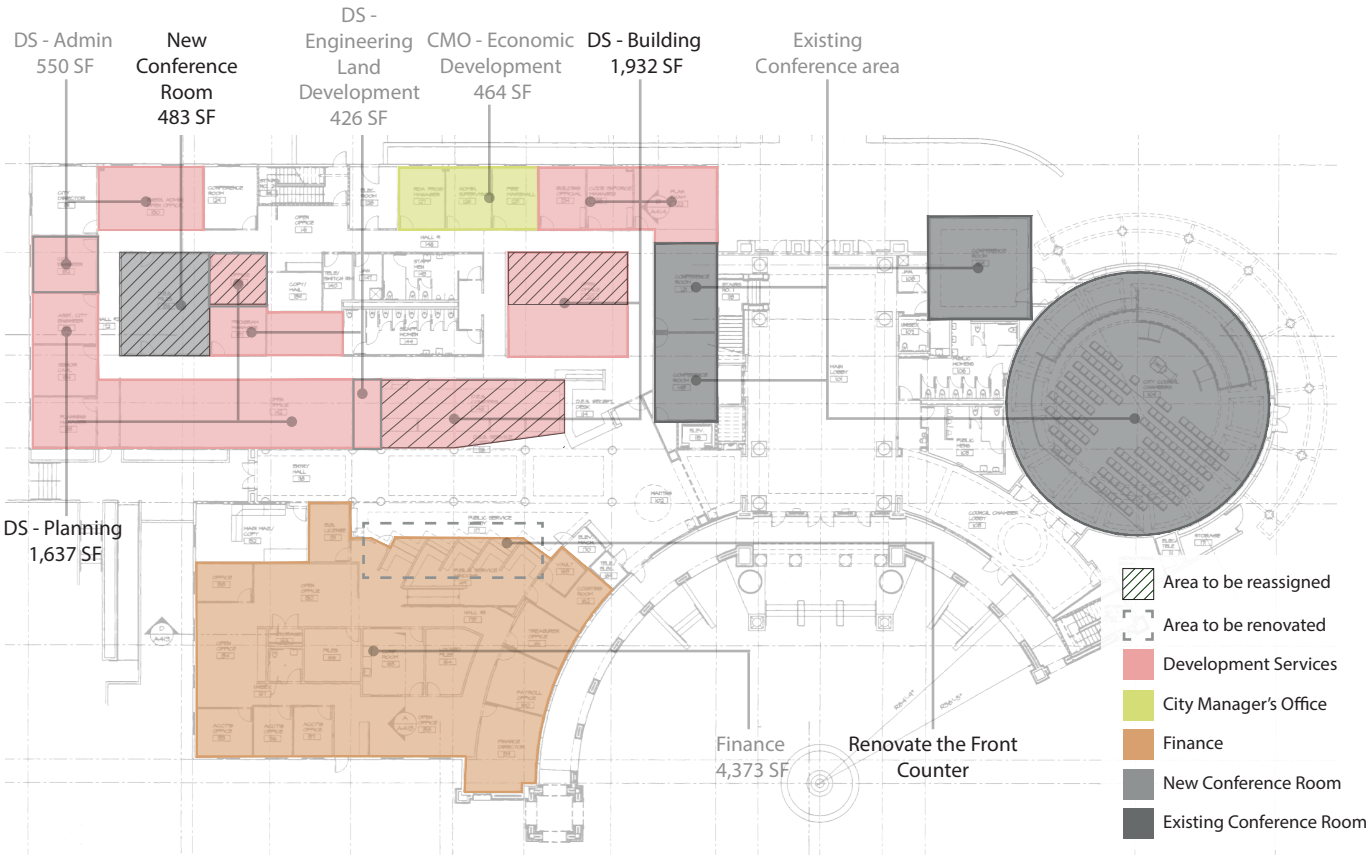
Renovation Project - City Hall



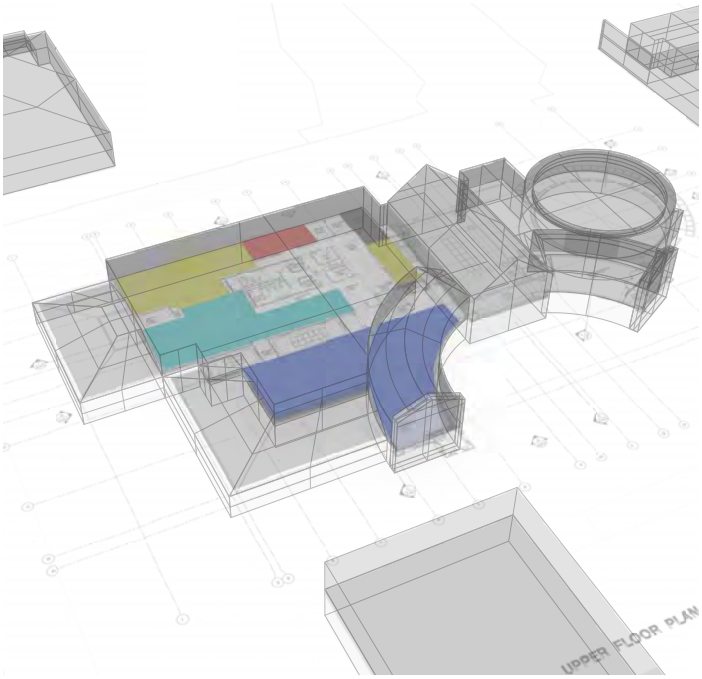
Project Description
The first floor renovation of City Hall would involve expansion of current employee workspaces for the Economic Development Division of the City Manager's Office. Building and Planning Divisions of Development services.

Department	Current Space in City Hall	Proposed Space	Notes
CMO Economic Development	307 SF	464 SF	
DS-Building	988 SF	1,932 SF	
DS-Planning	1,477 SF	1,637 SF	
New Conference Room		483 SF	

PROPOSED DIAGRAM - LOWER FLOOR



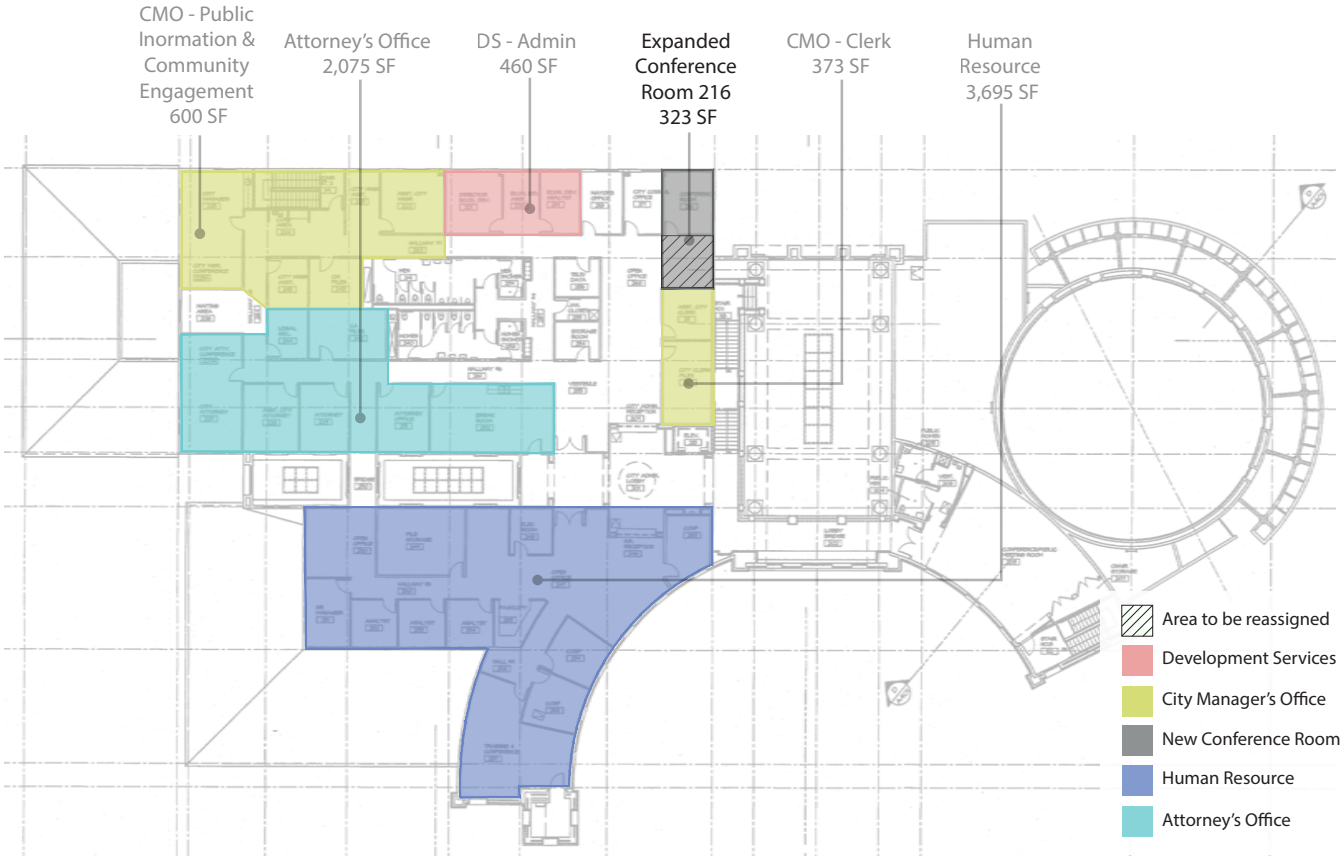
Renovation Project - City Hall



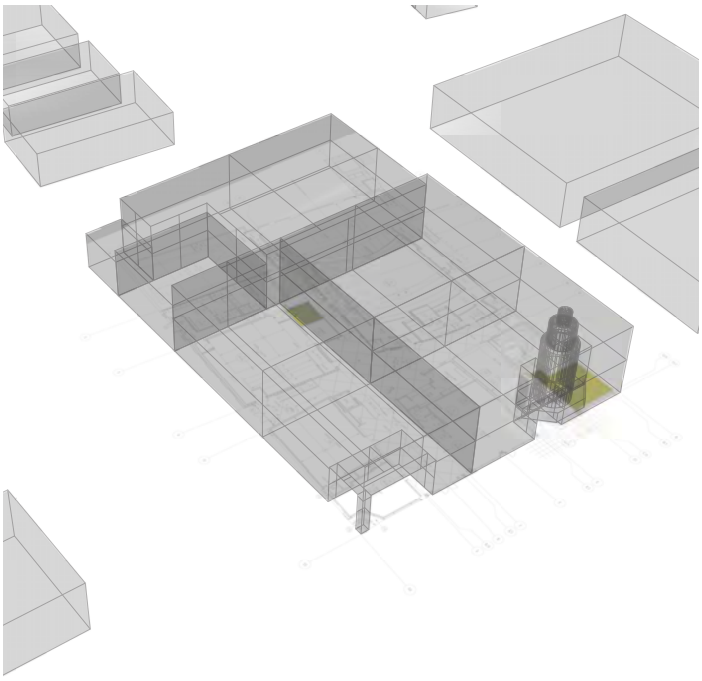
Project Description
The first floor renovation of City Hall would involve expansion of current employee workspaces for the Economic Development Division of the City Manager's Office. Building and Planning Divisions of Development services.

Department	Current Space in City Hall	Proposed Space	Notes
Conference Room 216	174 SF	323 SF	

PROPOSED DIAGRAM - UPPER FLOOR



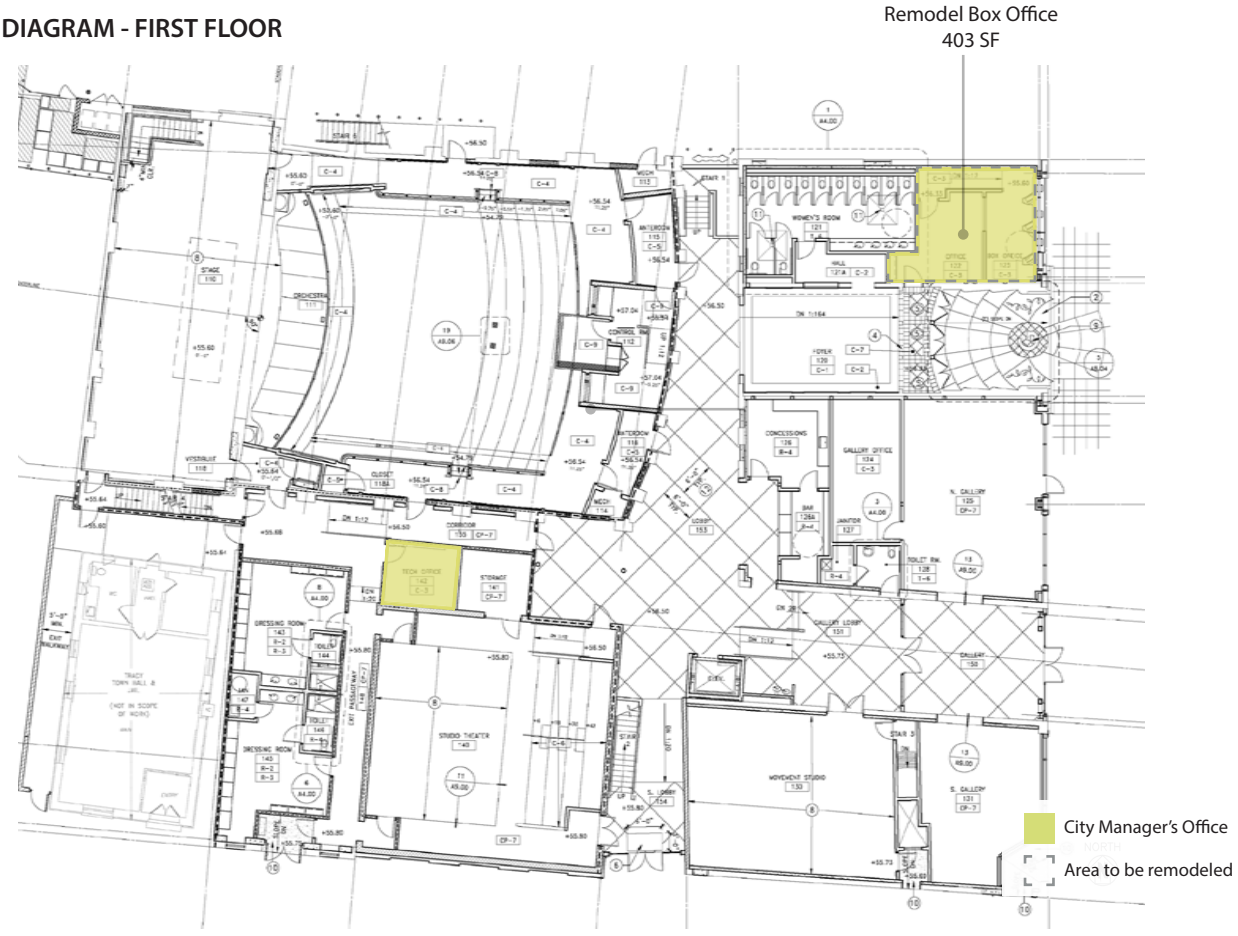
Renovation Project - Grand Theatre



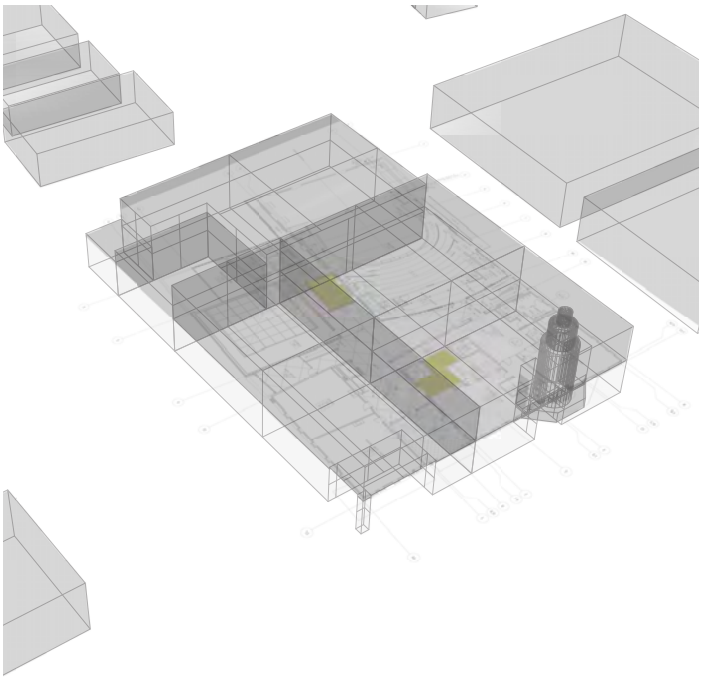
Project Description
The first floor improvements of Grand Theatre would involve the remodel of existing Box Office and the renovation of Tech Office.

Department	Current Space	Proposed Space	Notes
Culture Arts	403 SF	403 SF	Renovate Box Office

PROPOSED DIAGRAM - FIRST FLOOR



Renovation Project - Grand Theatre



Project Description
The second floor improvement of Grand Theatre would involve the renovation of music room, art room, dimmer room, and storage.

Department	Current Space	Proposed Space	Notes

PROPOSED DIAGRAM - SECOND FLOOR



Renovation Project - Animal Shelter



Project Description
Capital dedicated to expansion of Animal Shelter.

Department	Current Space	Proposed Space	Notes

Renovation Project - Police Annex



Project Description
Capital dedicated to future swing space renovations at the Police Annex facility. This facility will be used as swing space throughout the construction of the Police Department Headquarters expansion and renovation.

Department	Current Space	Proposed Space	Notes
Refer to Public Safety Master Plan			

Renovation Project - Fire Administration

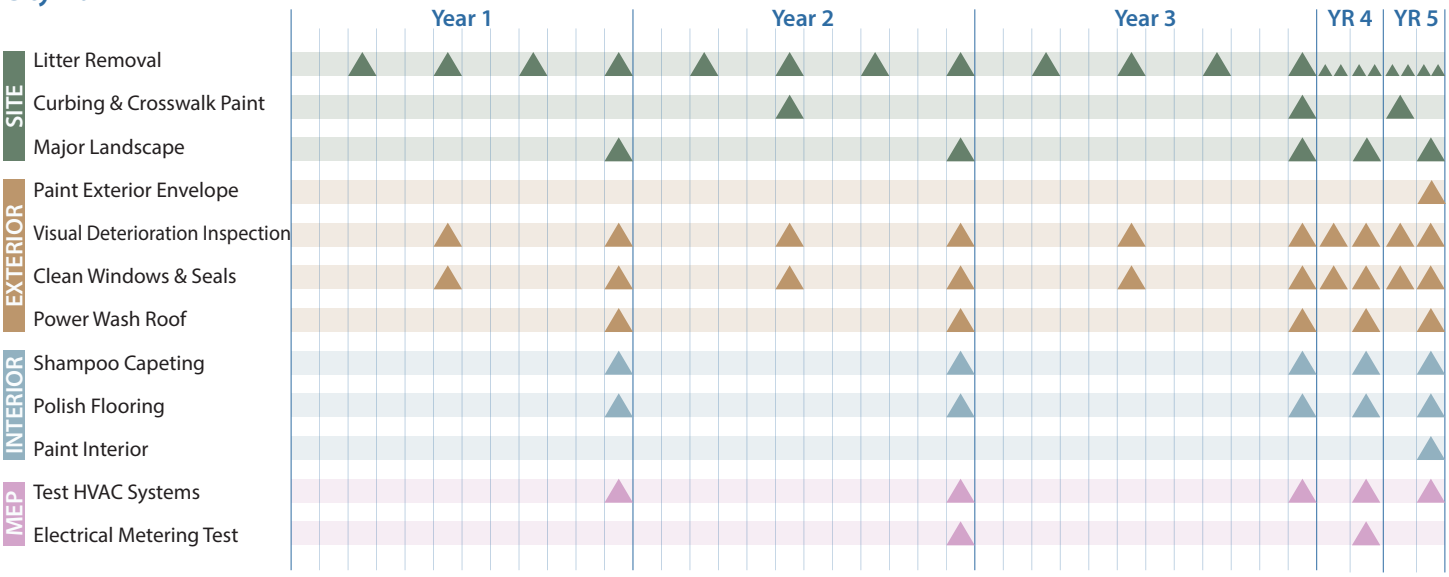


Project Description
Capital dedicated to interior renovations at the Fire Administration facility. More information can be found in the Public Safety Master Plan.

Department	Current Space	Proposed Space	Notes
Refer to Public Safety Master Plan			

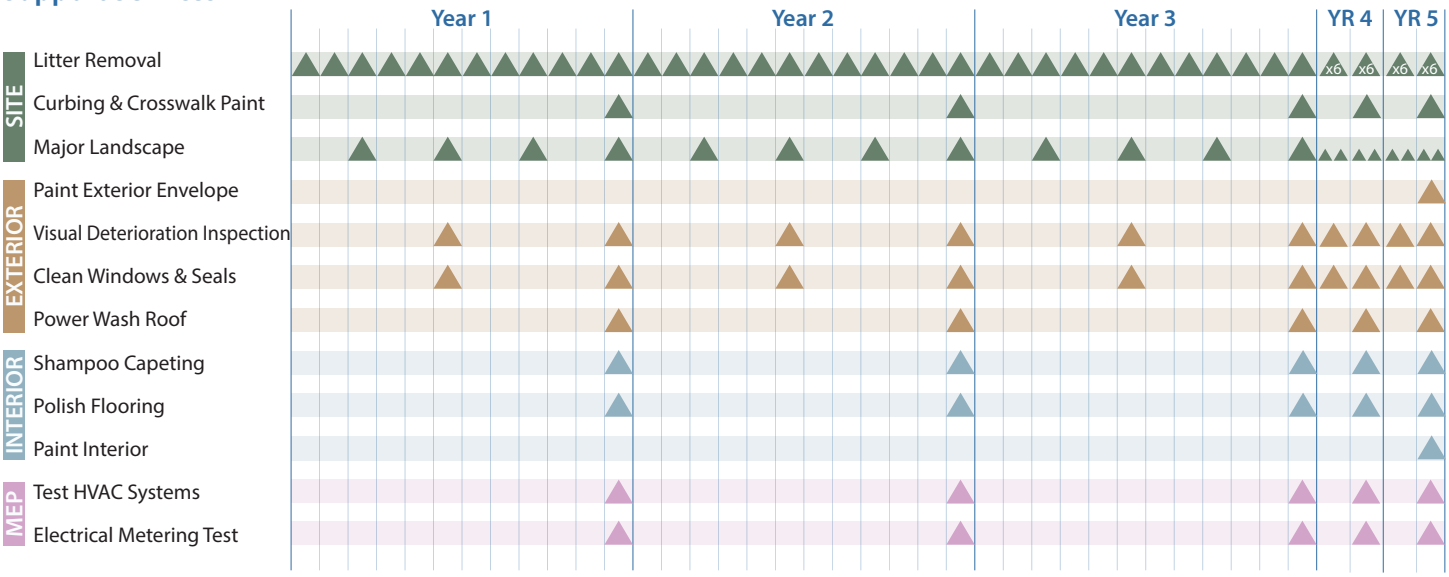
Proposed Maintenance Schedule - Existing Facilities

City Hall



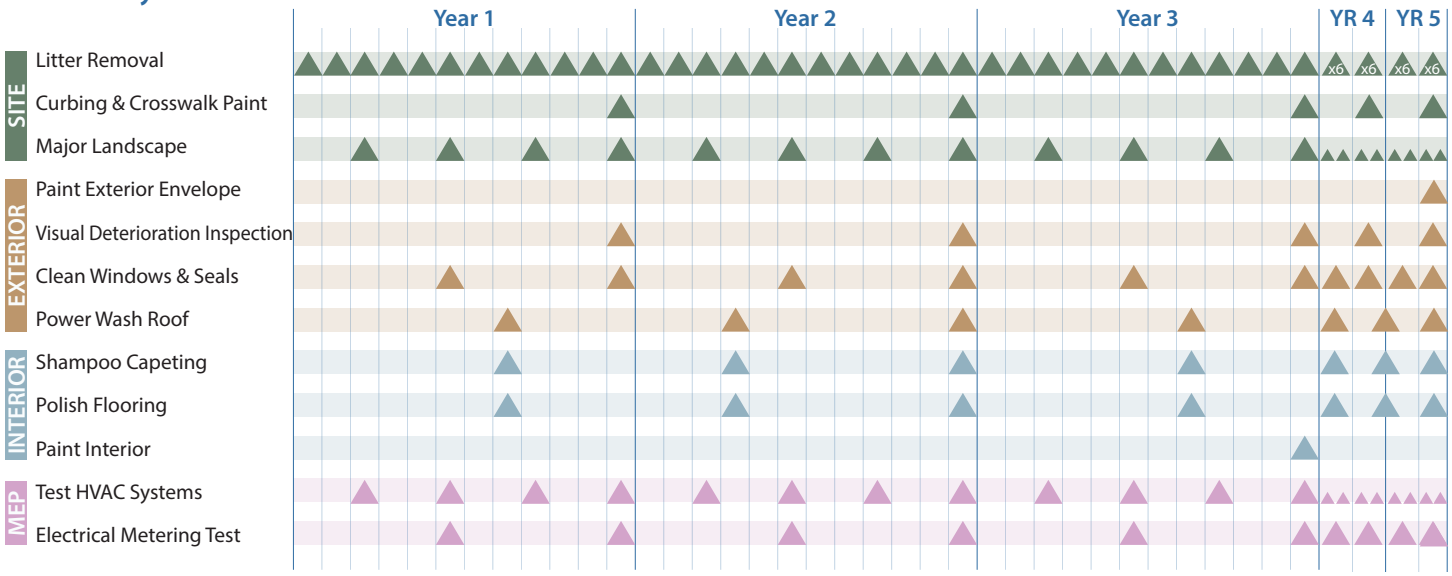
Notes:

Support Services



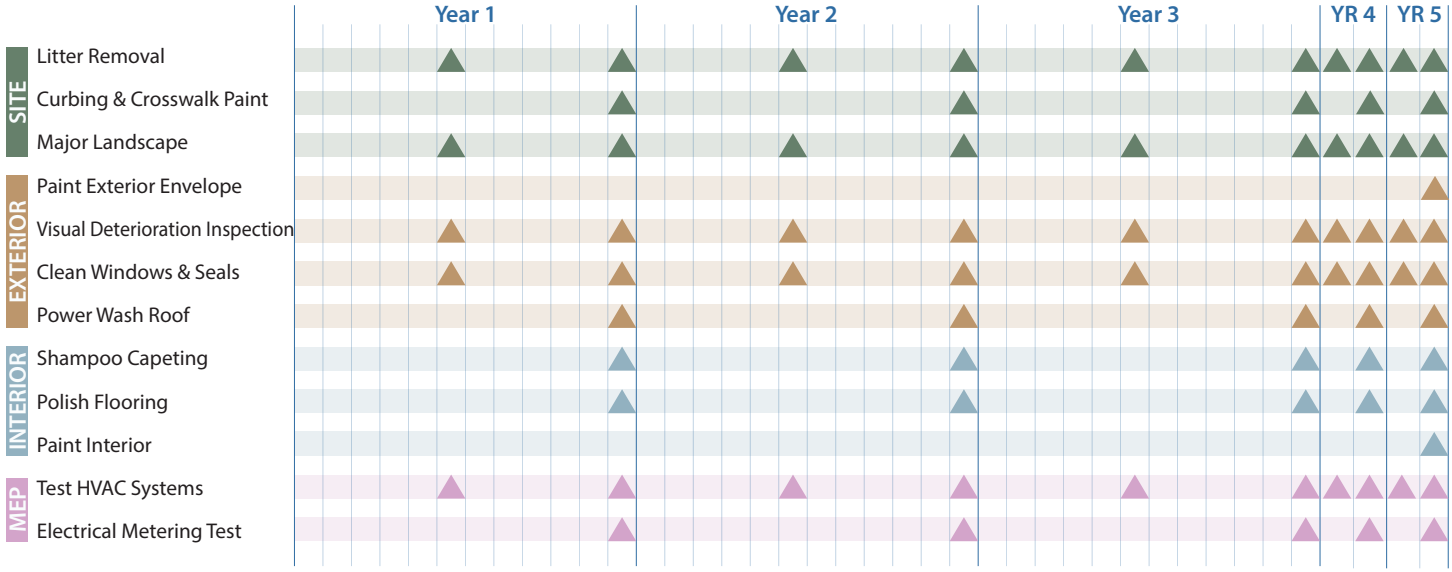
Notes:

Community Center



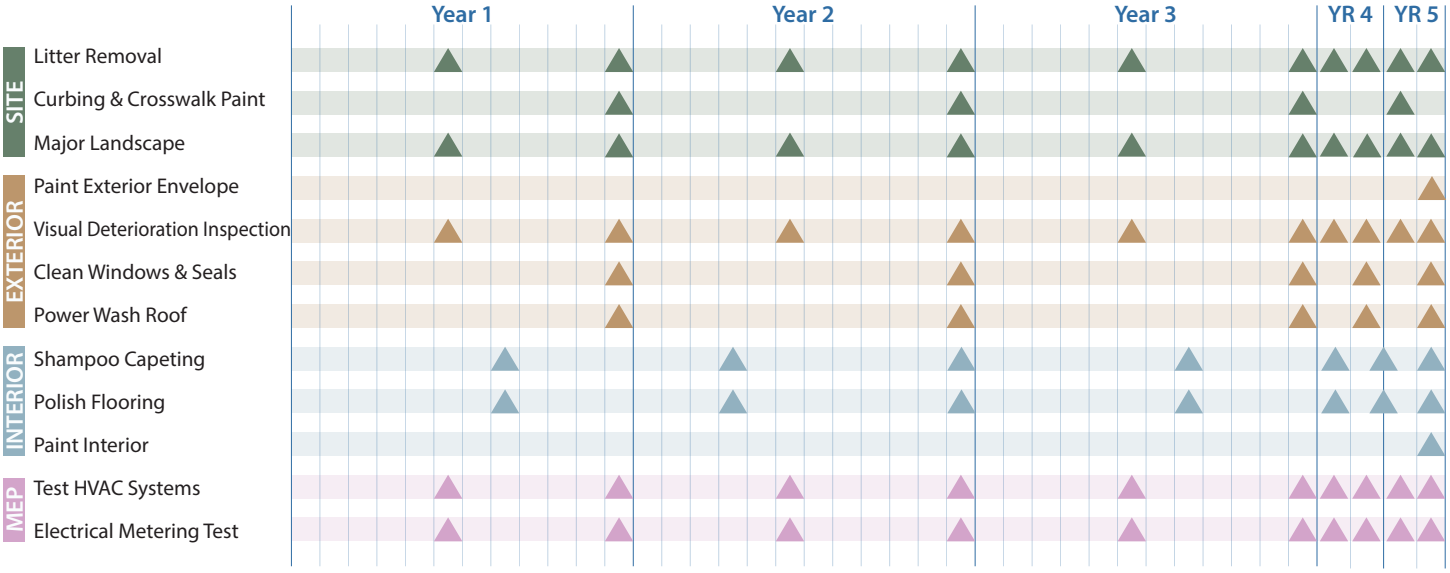
Notes:

Senior Center



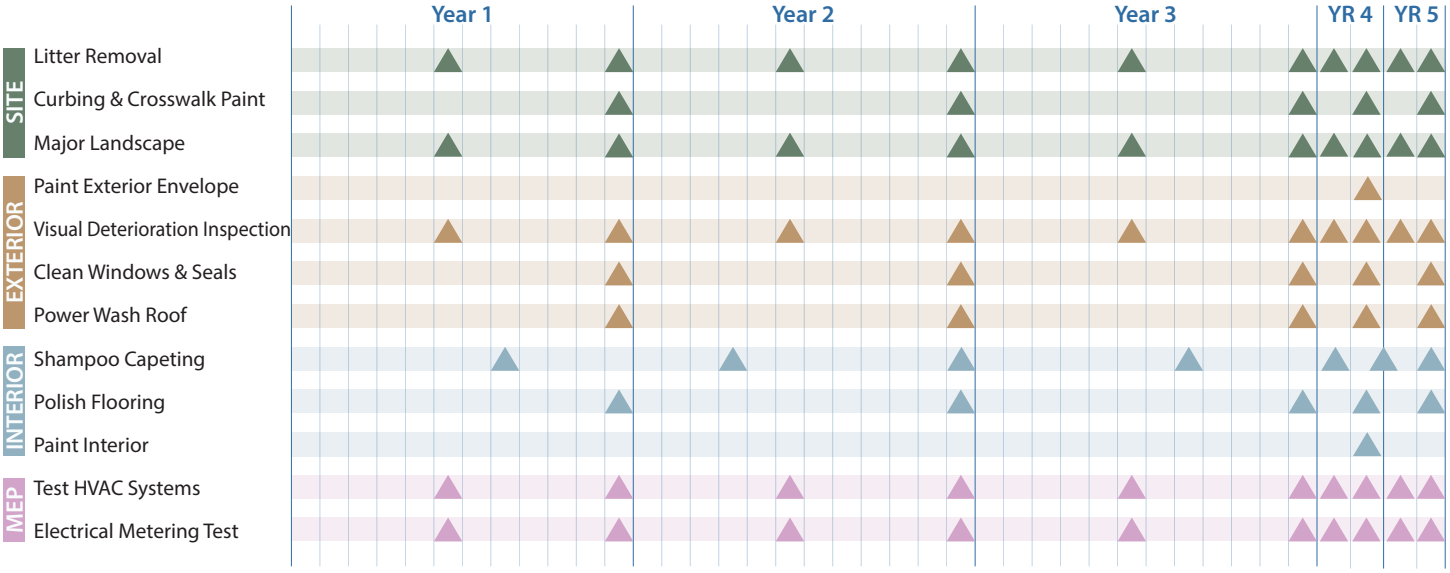
Notes:

Police Annex



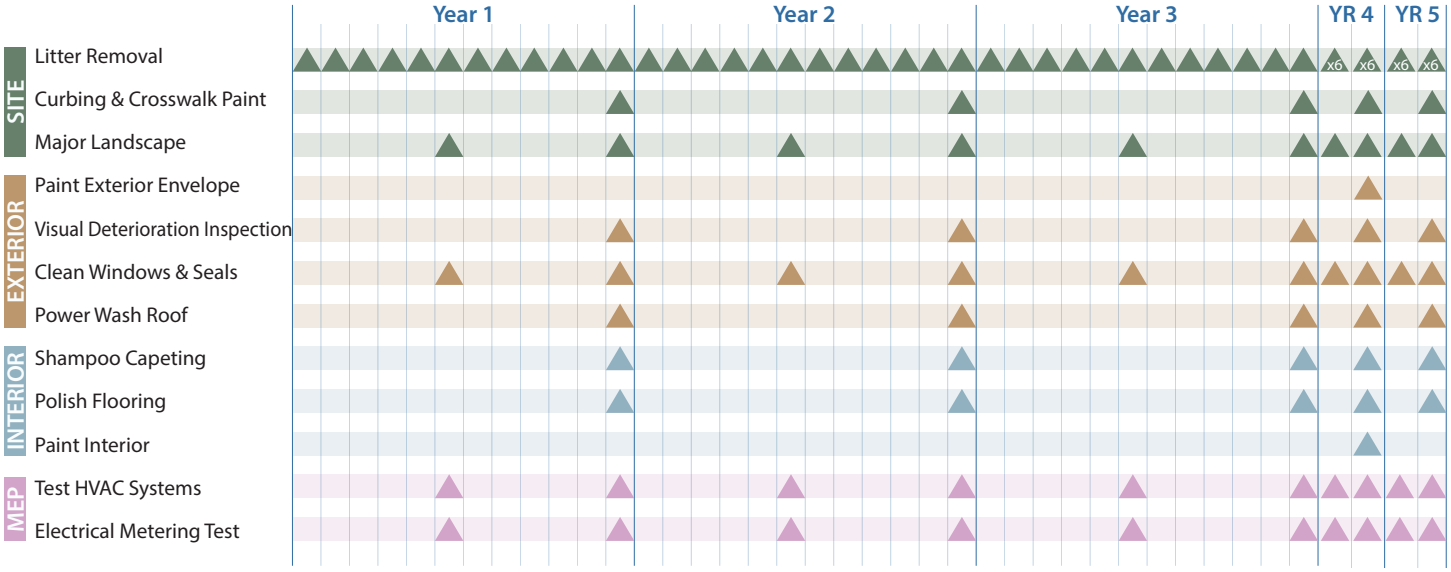
Notes:

Fire Admin



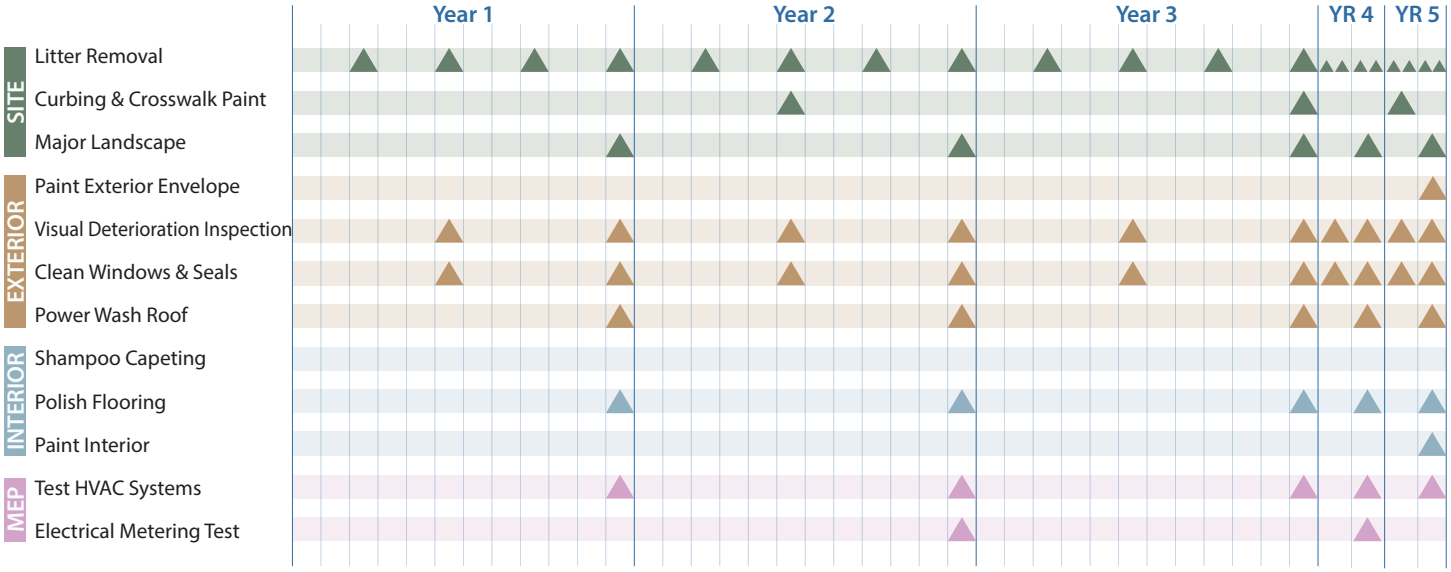
Notes:

Transit Center



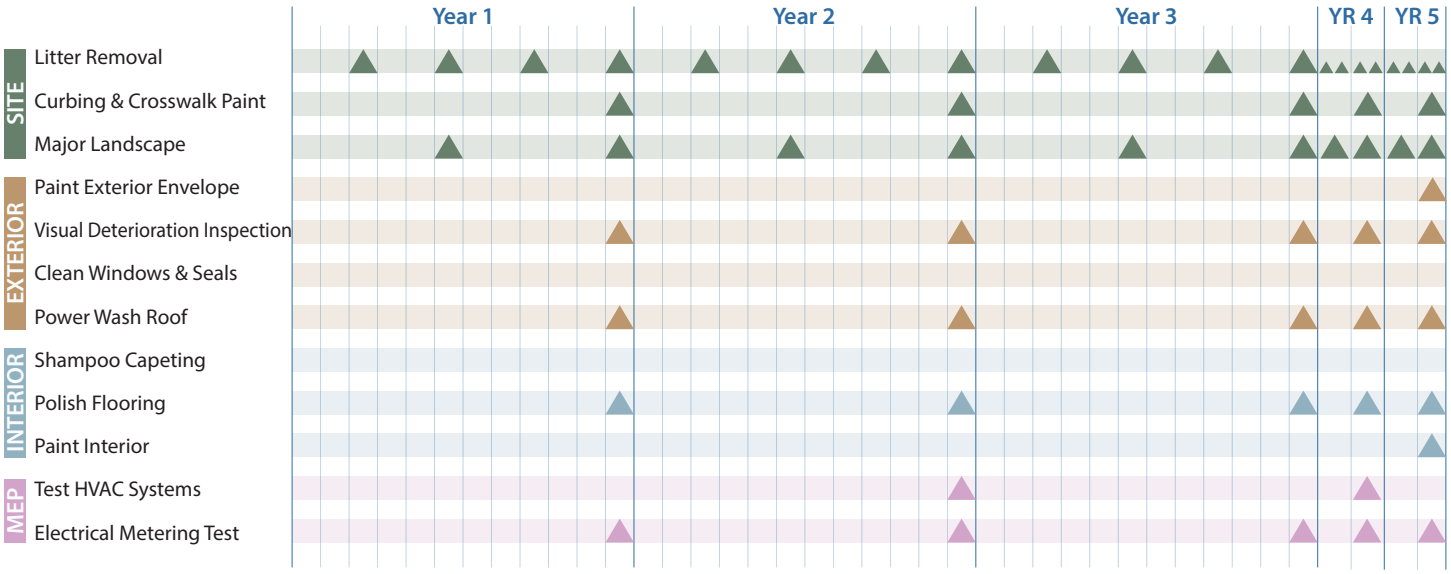
Notes:

Animal Shelter



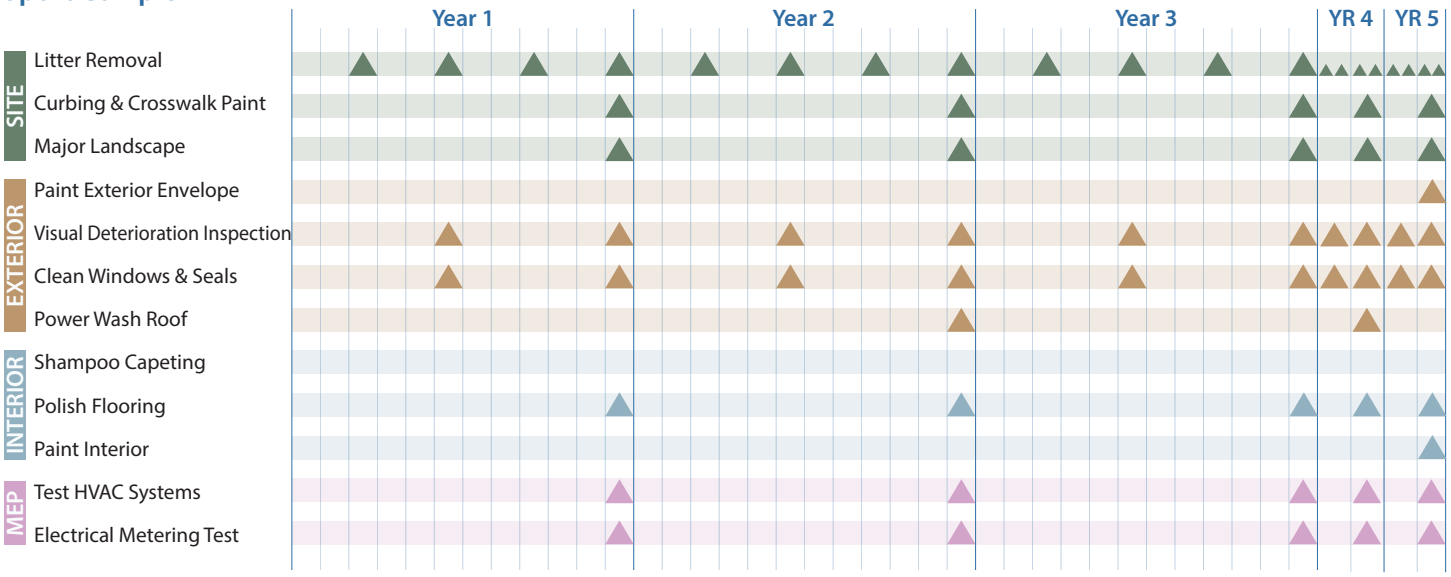
Notes:

Joe Wilson



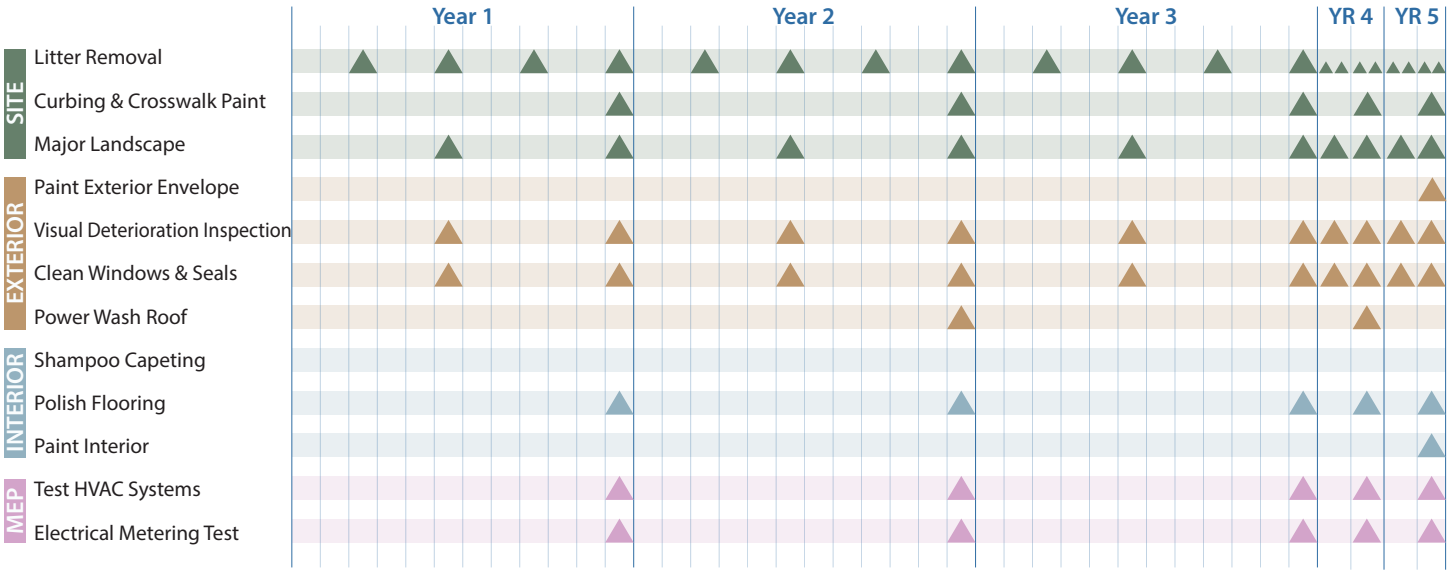
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Sport Complex



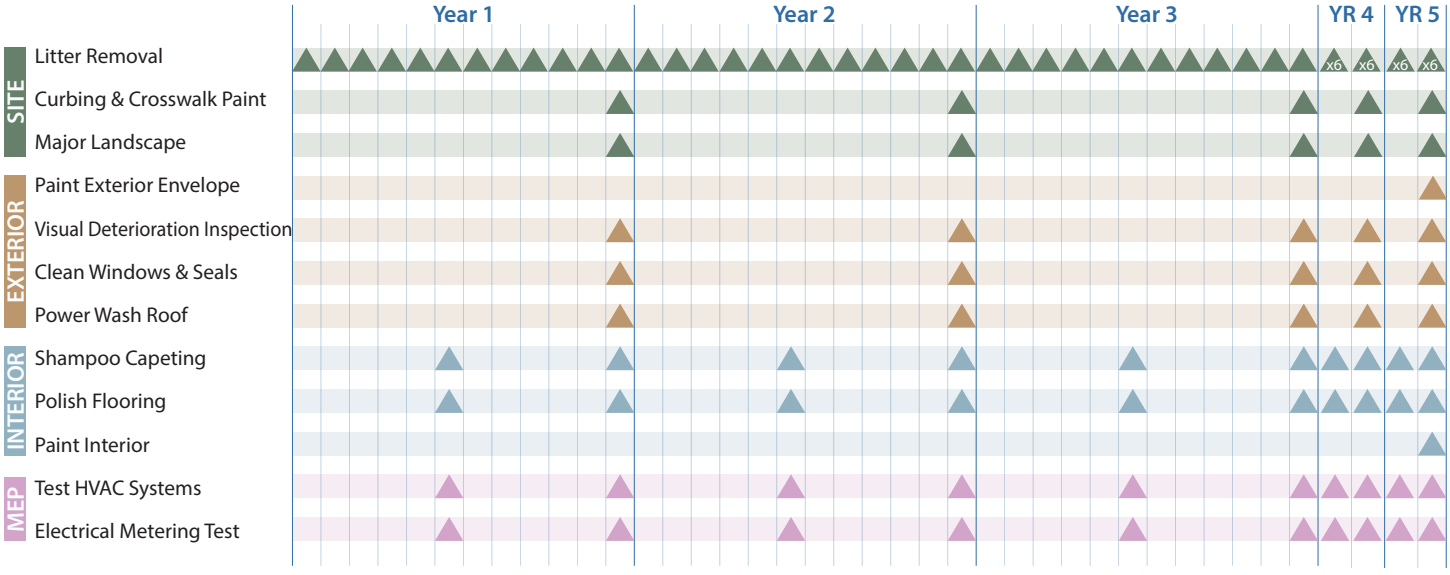
Notes:

Museum



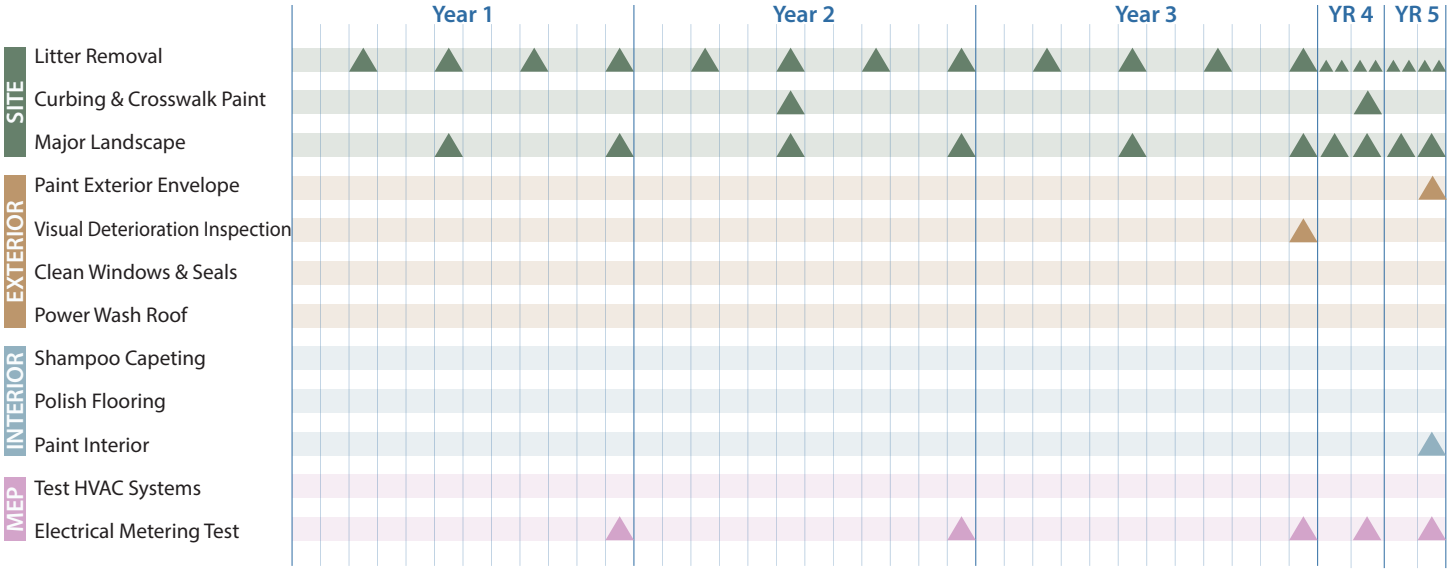
Notes:

Grand Theatre



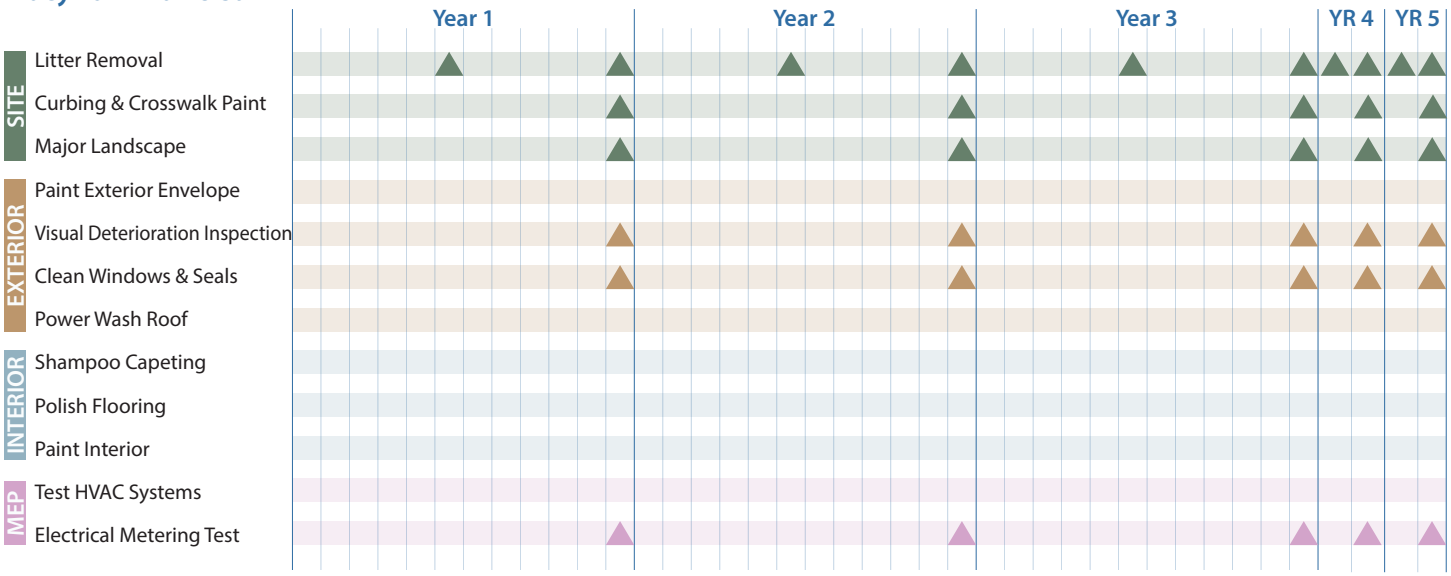
Notes:

Lammersville



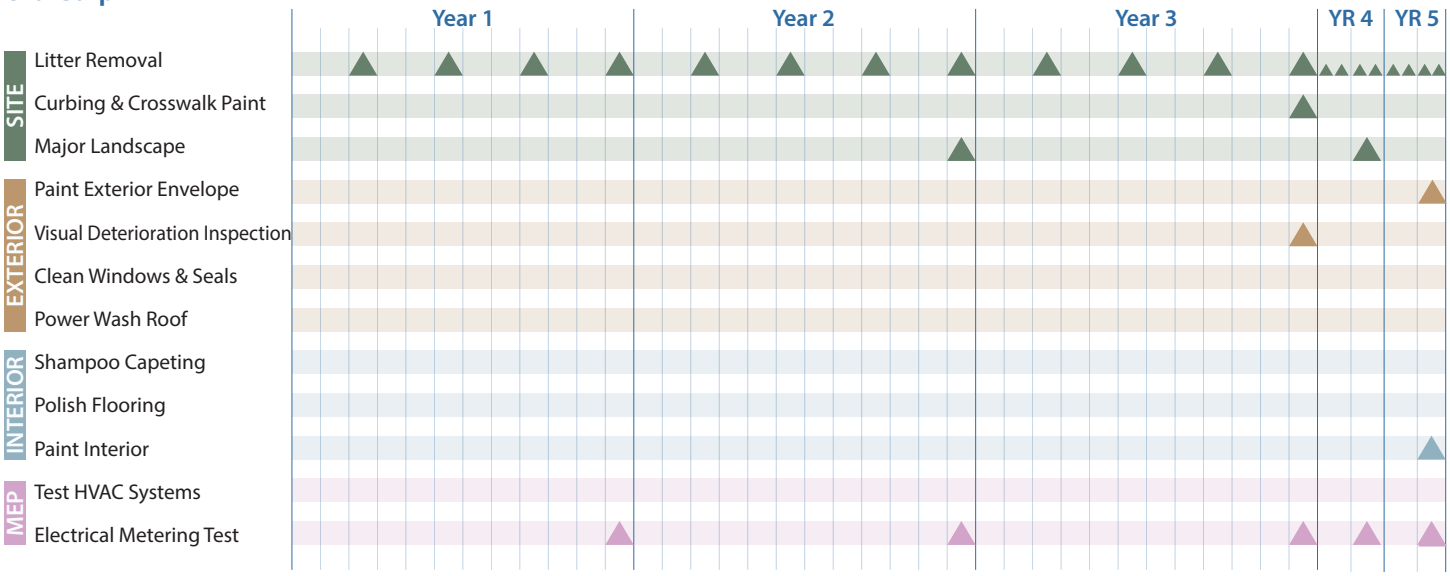
Notes:

Tracy Townhall & Jail



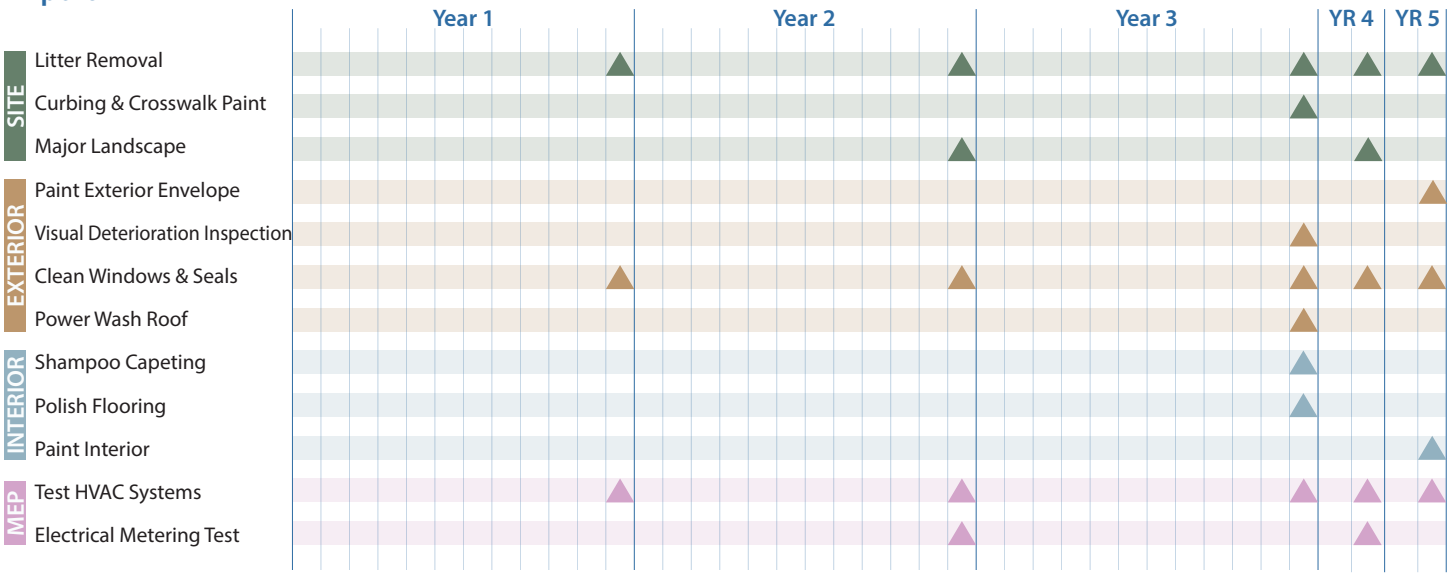
Notes:

Old Corp



Notes:

Airport



Notes:

V. SPACE STANDARDS AND GUIDELINES

a. Public Facilities Space Standards 426

b. City Design Guidelines Review 428

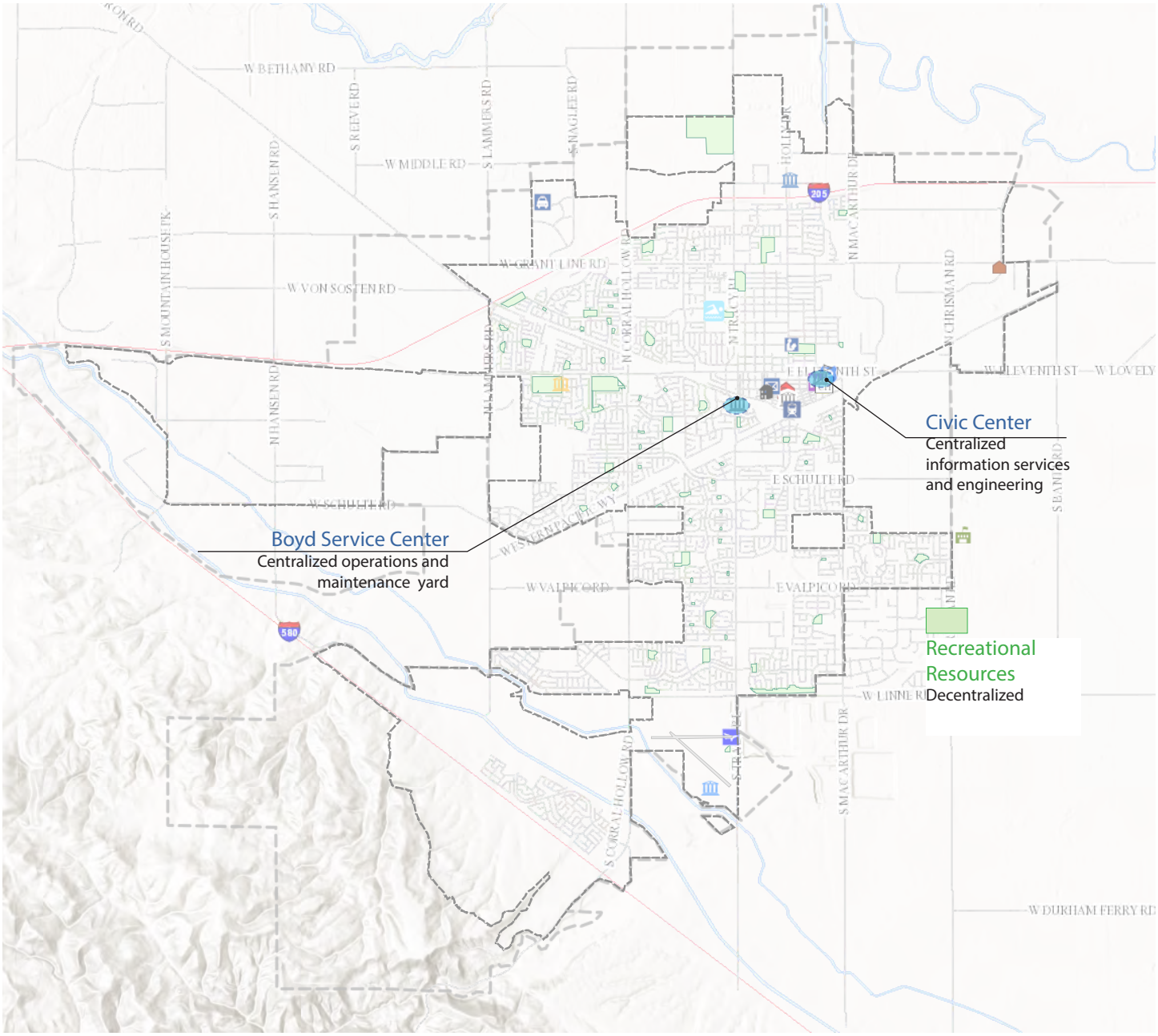
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Public Facilities Space Standards

RECOMMENDATIONS FOR OPERATIONAL EFFICIENCY

While the City of Tracy's public facilities are organized in an efficient manner in general, some benefits may be realized by centralizing functions related to information services, Operations and Utilities, and Engineering, and decentralizing recreational



resources.

The size of work areas in City Hall Plaza was used to anchor space standards for the current study. Staffing growth was projected by comparison to selected cities and was adjusted based on statistical procedures to enhance predictive accuracy. Space projections were developed on a line-item basis using the staffing projections, department surveys, reviews of existing space

and plans, and with reference to spaces that are normal and customary for public facilities.

SPACE & FACILITY STANDARDS

Space standards were informed by a combination of existing space and normal and customary space for similar functions in other jurisdictions. City Hall is a relatively new facility that shows a small number of specific deficiencies and many more surpluses related to staffing increase in response to population increase. Therefore, existing space utilization in City Hall was considered a good indicator of the size and quality of space the City of Tracy wants to provide to its employees. A few space types that are normal and customary in other jurisdictions have been included within space standards, largely based on other California cities that provide similar services and quality facilities for their employees.

Building Size

NSF is acronym for Net Square Footage, which describes the interior area of a room or the size of an open space. Unoccupied accessory areas such as corridors, stairways, ramps, toilet rooms, mechanical rooms and closets are not included in NSF.

BGSF is acronym for Building Gross Square Footage, which describes the total area within the exterior dimensions of a building. BGSF includes: the building's main circulation, such as corridors, stairs, and elevator, and other building support areas shared within the facility.

The amount of space required for circulation and other infrastructure is a variable, even when the desired NSF for a facility is known. The total area required for these spaces will be different for every architectural iteration and will change throughout the design process.

However, a rough estimate can be developed by considering the building's general operation and design. The BGSF includes all NSF and wall thicknesses of those spaces, plus an estimate of the additional area required for circulation and miscellaneous areas necessary for actual use of the space. This number is generated by multiplying an appropriate grossing factor to the NSF, based on the type of space being considered. A factor of 1.3 will be used to calculate the BGSF for the building programs.

Position/Type	Net Size
Offices	(Avg.) 227
Mayor, Council Member	140
City Manager	440
Asst. City Manager	220
City Attorney	420
Assistant City Attorney	210
Deputy City Attorney	190
DES Director	225
Department Director	165
Commissioner	140
Typical Professional Office	120
Cubicles (avg.)	(Avg.) 80
Executive Assistant	96
Typical Open Office Professional	96
Administrative Assistant	64
Typical Open Workstation	64
Conference Room	
Small Conference Room	300-500
Large Conference Room	75+25/person
Copy/Supply	(Avg.) 121
Copy/Supply with work table	200
Copy/Supply Enclosed	100
Copy/Supply Open Office	64
Breakroom	
Break Room w/ Kitchen	75+25/person
Coffee Counter	20

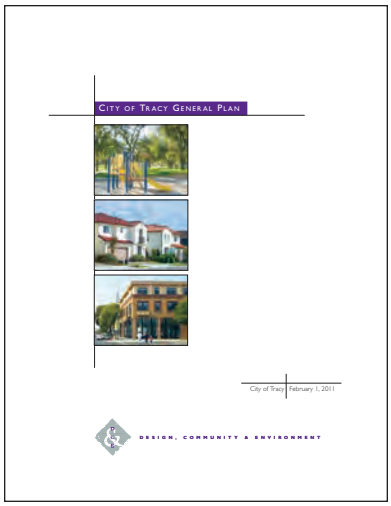
City Design Guidelines Review

In order to assure consistency with existing City guidelines, a review of relevant existing guidelines is shown here and supplemented with additional recommendations relevant to the CPFMP.

GENERAL PLAN

See "City of Tracy General Plan" (2011) and "Amendments to General Plan."

Land Use Guidelines



The City's General Plan Land Use Element includes goals, objectives, policies and actions for all public facilities and specified private improvements:

- A balanced and orderly pattern of growth in the City
  - Establish a clearly-defined urban form and city structure.
  - Comprehensively plan for new development in the City's Sphere of Influence.
  - Ensure that the public facilities such as schools, parks, and other community facilities are accessible and distributed evenly and efficiently throughout the City.
  - Promote efficient residential development patterns and orderly expansion of residential areas to maximize the use of existing public services and infrastructure.
  - Encourage development near transit stations including the multi-modal station in Downtown, and the Altamont Commuter Express (ACE) station or stations.
- Expanded economic opportunities in Tracy.
  - Balance residential development with jobs, retail growth and the ability to provide services.
  - Expand the City's retail base.
  - Expand the City's industrial base.
  - Ensure adequate land for office development.
- Expanded cultural opportunities to enrich quality of life of residents and visitors.
  - Expand the City's cultural and arts facilities.
  - Neighborhoods that support Tracy's small-town character.
  - Create a mix of housing types in neighborhoods.
  - Locate services and amenities within walking distance of neighborhoods.
- A physically, socially, and economically vibrant Downtown.
  - Target new uses for the Downtown to reinforce its role as the heart of the City.
  - Establish the Downtown as the governmental and cultural focus for the City and the region.
- Land development that mitigates its environmental, design and infrastructure impacts.
  - Minimize the impact of industrial development or aggregate mining on adjacent uses.
  - Ensure land use patterns that minimize conflicts between transportation corridors and neighboring uses.
  - Ensure that development near the Tracy Municipal Airport is compatible with airport uses and conforms to safety requirements.
- A citizenry that is involved in the City's planning process.
  - Provide opportunities for participation in the City's planning processes.
- No urbanization in unincorporated County areas as defined by this General Plan or the San Joaquin County General Plan, whichever is more restrictive, without annexation to the City, a pre-annexation agreement, or a letter of support from the City.
  - Participate proactively in land use decision making within Tracy's Planning Area in pursuit of the above-stated goal.
- Leadership in environmental, economic and social sustainability.
  - Undertake measures to reduce greenhouse gas emissions and improve the sustainability of actions by City government, residents and businesses in Tracy.

Community Character Urban Design Principles

The City's General Plan Community Character Element includes urban design principles for all public facilities and specified private improvements:

1. Human-Scale Design — At a neighborhood level and at a site or building design level
2. Focal Points — Focal points are locations that serve as meeting places where people gather.
3. Edges — Edges help to define space and in built environments they can be created by buildings or rows of trees.
4. Visual Landmarks and Entryways
5. Building Siting to Hold Corners
6. Pedestrian Orientation — Designing places that are pedestrian-oriented rather than automobile-oriented often contributes to creating a sense of place.

Public Facilities and Services

The City's General Plan Public Facilities And Services Element includes information and policy guidance for all public facilities and specified private improvements:

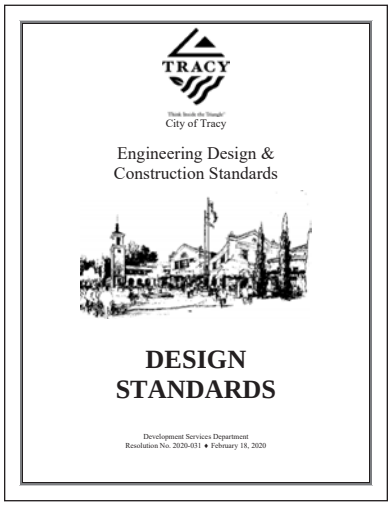
- Public buildings that are a source of civic pride for all residents.
  - Support the needs of the community through the construction and maintenance of public buildings, such as City Hall, community centers, libraries and additional Operations & Utilities facilities.
  - Provide sufficient library service to meet the informational, cultural and educational needs of the City of Tracy.

CIVIL ENGINEERING AND CONSTRUCTION GUIDELINES

See "City of Tracy Engineering Design & Construction Standards - Design Standards" (2020).

The City has previously commissioned a study that includes minimum standards for the design, construction, maintenance, repair, and alteration of all public facilities and specified private improvements:

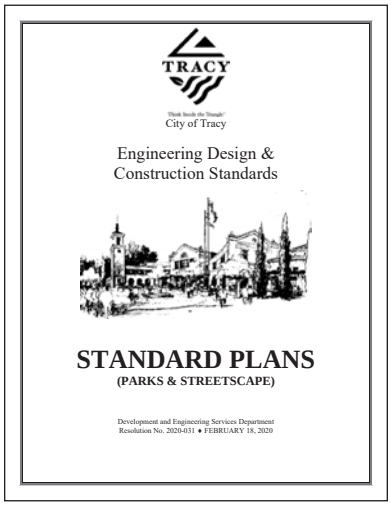
- Street Design Standards
- Sanitary Sewer Design Standards
- Storm Drainage Design Standards
- Water Design Standards
- Reclaimed Water Standards
- Street Lighting
- Grading Design Standards
- Wall Design Standards
- Estimates For Bonding Purposes
- Demolitions And Abandonment Plan



PARK AND STREETSCAPE DESIGN GUIDELINES

See "City of Tracy Engineering Design & Construction Standards - Standard Plans (Parks & Streetscape" (2020).

Guidelines ensuring that the installed landscape enjoys a long lifespan, is aesthetically pleasing, with minimal maintenance and watering requirements. Tracy's Downtown has a compact, grid street system and serves as the historical heart of the City. There are numerous historical buildings that enhance the City's identity, walkable main streets with a diverse mix of uses, and a small-town urban fabric. The City has previously commissioned a study that includes:

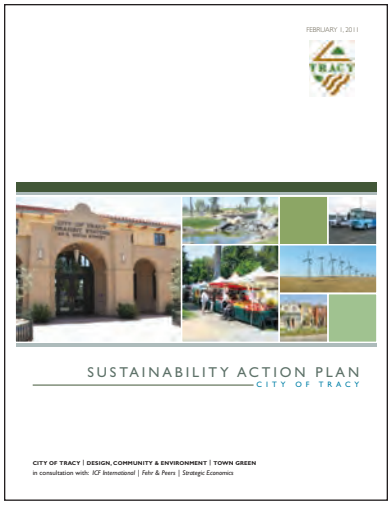


- Surfaces
- Walls And Fences
- Shade Structure
- Furnishings
- Sport Facilities
- Planting
- Irrigation
- Signage
- Lighting

SUSTAINABILITY MEASURES

See "City of Tracy Sustainability Action Plan" (2011).

The City's Sustainability Action Plan includes measures to achieve sustainability targets as applicable for all public facilities and specified private improvements:



- Green Building Ordinance
- Energy Efficiency in Site Planning and Design
- Green Building and Energy Efficiency Design and Education
- Energy Efficient Products and Retrofits
- Weatherization Assistance
- Financing for Energy Efficiency and Renewable Energy Projects
- Energy Efficient Retrofits for City Street Lights
- Solar Panel Installations on Municipal Facilities
- Energy Efficiency Settings for City Desktop Computers
- Reduced Parking Requirements
- Support for Bicycling
- Support for Transit
- Smart Growth, Urban Design and Planning
- Parking Cash-Out Programs for Employees
- Increased Use of Low Carbon Fueled Vehicles
- High-Density Infill Projects
- Non-Toxic Building Materials
- Green Building Training for City Staff
- Emerald Tracy Website
- San Joaquin Council of Governments Sustainable Communities Strategy

This study augments the above already published measures with the following regional-appropriate measures to achieve sustainability, including extending the survivability of facilities. These are recommended as facility design guidelines for the public facilities to be built resulting from this master plan.

City Design Guidelines Review

SURVIVABILITY AND SUSTAINABILITY

Facilities built under the CPFMP should be designed with extended survivability and sustainability built-in. The earthquake and tsunami in Japan and the power outage in Texas due to the winter storm are examples of what happens during disasters when structures are not able to survive and remain in service. These were probably a 300-year events, but the probability of such events is often misunderstood and misused. This event could easily have happened today, here in California. While an ocean tsunami is not possible in Tracy, the area is certainly earthquake-prone. The USGS database shows that there is a 98.035% chance of a major earthquake within 50 kilometers of Tracy – well within the lifetime of Tracy's public buildings and representing a serious threat to the delivery of public services when they are needed most. This may be the City of Tracy's highest duty and responsibility - to serve the public during times of critical emergency.

To do so, the City must have facilities that have survived any predicted event and remain functional and can support emergency service delivery. Most planning and building design standards for earthquakes are based on the ability of a structure to withstand only a 100-year event. The earthquake and tsunami in Japan, Hurricane Katrina, and other major events demonstrate the need for facilities to remain usable post disaster for extended periods without electric power and other services. Designing for this is called the "passive survivability." Passive survivability refers to a building's ability to maintain critical life-support conditions in the event of extended loss of power, heating fuel, or water. Relative to building performance, the idea is not to maintain temperatures within the ASHRAE-defined comfort zone of 68–81°F (20–27°C)—depending on the season and humidity—but to create buildings that will not threaten the lives of their occupants if power is lost.



As an urban planning and architectural design concept, passive survivability defines how a district or building is able to continue to operate even during a protracted outage of utility services such as electric power, natural gas, water and sewerage. As applied in California, it defines the ability to survive the maximum anticipated earthquake, wildfire, flood or other natural disaster, and to endure the prolonged power and other outages that may follow. At present, public safety facilities need only to comply with minimum building code requirements and provide for emergency power generation for a limited period of time, up to 72 hours.

As an industry, so often the focus is on cost and designing to meet the minimum standards rather than considering the longer-term impact of a building. This is where passive survivability comes in. Advances in earthquake engineering, energy conservation, and design with climate and onsite energy production have made this possible to achieve. However, it requires the adoption of a new architectural and engineering design paradigm. A major component of this paradigm is the use of sustainable and passive design with climate-adapted techniques.

Passive survivability can be achieved by incorporating the sustainable design features that have been so actively promoted by the green building community:

- Highly efficient thermal envelope
- Cooling-load avoidance strategies
- Capabilities for natural ventilation
- Passive-solar heating
- Natural daylighting

- Generating and storing photo-voltaic electricity
- Water storage
- Solar water heating

A menu of key extended survivability and sustainability features, where appropriate, recommended for the buildings included in the CPFMP includes:

- Solar Panel on roof – Consider small-scale rooftop solar panel to power critical emergency circuits, IT, radio, etc.
- Reflective cool roof – Where re-roofing is required, use "cool roof" products. Roofs should be cool roof designs which reduce roof surface temperatures, reduce heat transmission into the building and reduce "heat island" effect.
- Isolate and protect critical utilities – Evaluate each building system for criticality including but not limited to radio, telecommunications, power, sanitary sewer, potable water, etc. Identify feasible measures which can be cost-effectively taken to harden against flooding, earthquake or other threat to be determined.
- Design structures to "immediate-occupancy" level – So that it might function as a shelter, the new Community Recreation Building can be designed to the highest performance levels as per FEMA 356 A, that of immediate occupancy (IO), which means the post-earthquake damage state in which only very limited structural damage has occurred.
- Use seismic dampening to improve survivability at same cost – Consider use of viscous fluid dampers (VFD) or other structural damping techniques to increase the resilience of the building frame under earthquake loads, improving survivability during and serviceability after an earthquake.
- Use energy-efficient design to extend survivability and reduce utility bills – A variety of measures such as east-west building orientation, use of thermal mass, high-efficiency mechanical strategies, etc. will reduce energy consumption and extend the duration in which emergency power can be provided.
- Use natural light and ventilation to improve workplace quality and extend survivability – Use of natural lighting and ventilation provides for a high-quality workplace. It also means that the building can be passively operated and inhabited when emergency power has been exhausted. Primary work spaces to be provided with natural light from skylights and/ or high windows with light shelves, with the electric lighting system controlled by light sensors which automatically turn them off when there is sufficient natural light. Natural ventilation or mixed-ventilation delivery of outside air could be provided. Naturally ventilated air will flow from low vents to high vents.
- Overhang and sunshade devices – Use overhangs, solar screens and other devices to allow view out, yet reduce summer heat load and air conditioning demand saves on utility bills, too.
- Provide super-insulation – Wall insulation of up to R-40 is encouraged, twice the usual thermal resistance of a wall. Roof insulation values between R-30 and R-40 are desired. Consider alternative building technologies like using California's Central Valley's own straw bale as insulation for buildings which provides up to R-40 walls.
- Increase thermal mass – Heat storage capacity is maximized through the use of high specific heat and heat capacity materials such as concrete, masonry and even interior wallboard assemblies. Novel use of materials to increase thermal mass should be considered such as straw bale covered concrete exterior walls, concrete floor and concrete roof to name a few. The large heat storage capacity of these surfaces will moderate temperature swings in the building and reduce the demand for heating and cooling. The resulting "thermal flywheel" effect can be amplified through use of nighttime ventilation strategies to help "carry" the building through hot summer days with less mechanical cooling required.
- High-efficiency mechanical systems – Use high-efficiency mechanical systems which



Solar Panel on Roof
Solar panel reduce solar heat gain and supports energy demand



Electric Vehicle Charging Station
Supplies energy for recharging electric vehicles



Covered Drop-Off /Pick-Up Areas
Transprotation shelters provide shade and shelther from sun, wind weather



Stormwater Management Permeable Surfaces
Allows for movement of water and air around permeable surfaces



Noise and Wind Break
Evergreen trees surround building reduce the noise and provide wind break even in winter



Overhangs and Sun Shade Devices
Allow penetration of low winter sun, while blocking high summer sun



Sun Shading and Umbrella Devices
Outdoor seating area provides connection to nature



Bike Rack
Assures cyclists their bike is securely parked

will reduce utility bills at same time as extending duration of emergency generator power due to reduced rate of fuel consumption. Consider water-based systems in order to avoid the inherently less-efficient heat transfer provided by air-based systems.

- Raise sites for minimum 100-year flood protection – Public facility sites should be raised minimum 1' above base flood elevation (BFE) to protect against projected 100-year flood events. Consider berming to further protect against flooding.
- Place critical functions on higher level – In order to provide an area of retreat in case of flooding which exceeds the 100-year projection, place critical functions on a higher level where flood water will not reach. Critical functions include the Emergency Operations Center (EOC), Dispatch/ Communications, other.
- Elevate emergency generator and fuel supply – Raise emergency power generator and its 72-hour fuel supply to be able to withstand any flooding risk, also includes transfer switch and emergency power panels. Space below to be used for storage and hardened against flooding.



Sustainable Landscape Plant s

Plant with native, drought-tolerant plants helping to clean and filter rainwater



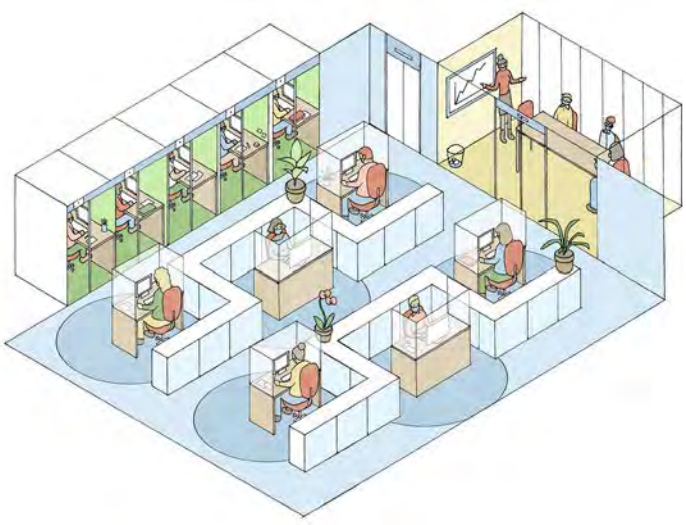
Emergency Backup Systems

Supports important electrical systems on loss of normal power supply

DURING AND POST COVID-19 BUILDING DESIGN

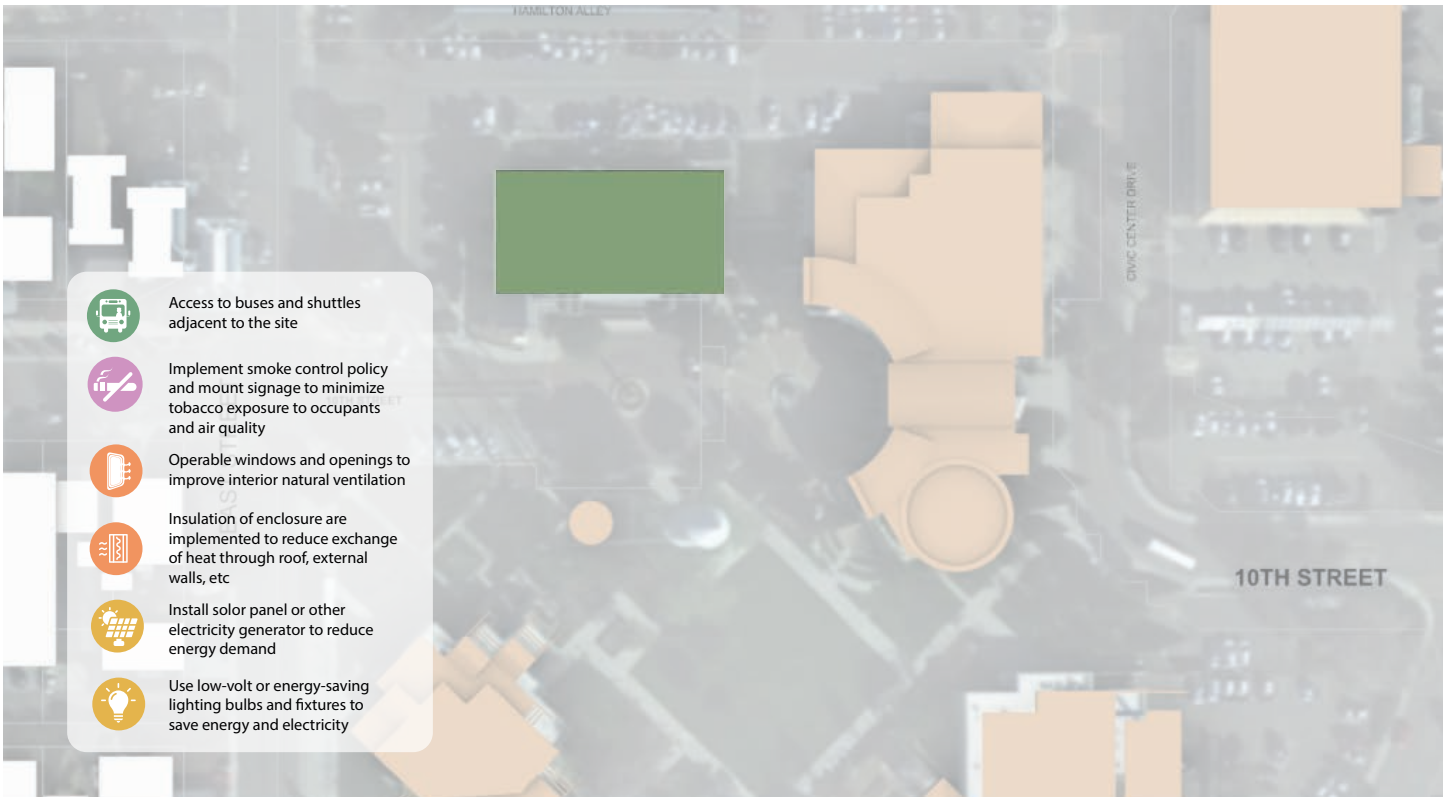
The impact of Covid-19 on every aspect of life is undeniable. As the pandemic began to spread throughout March 2020, Covid-related changes we are now seeing in building design. It's reasonable to think that concerns about future viruses might encourage the city to design with an eye toward that enable and encourage people to spread out.

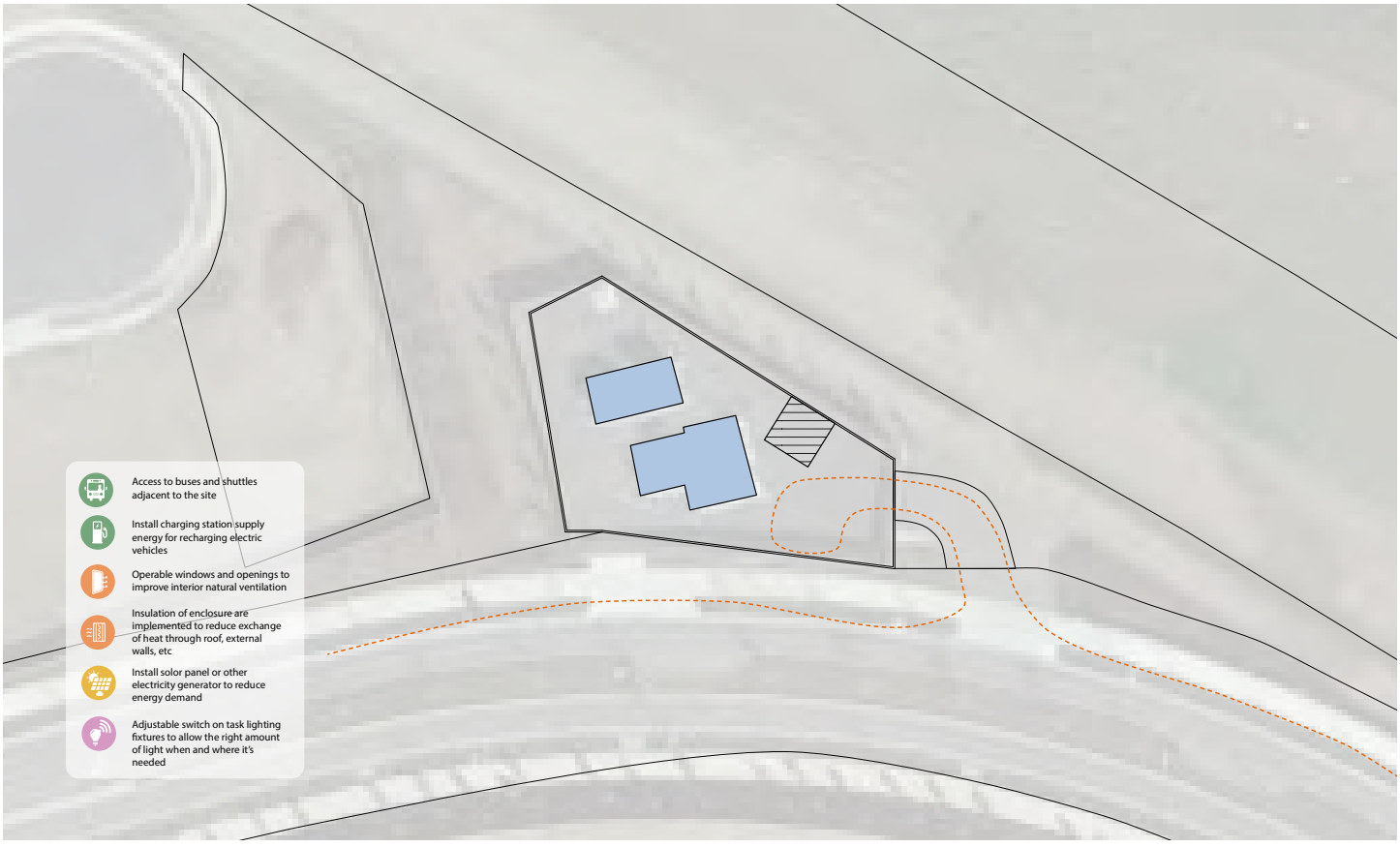
- Reduce open offices.
- Spread workstations farther apart in open offices
- Utilize automation to mitigate contagion.
  - Automatic doors
  - Voice-activated elevators
  - Cellphone-controlled room entry
  - Hands-free light switches and temperature controls
- Specify antibacterial fabrics and finishes.
- Reduce the number of flat surfaces where germs can sit.
- Install ventilation systems that allow for removing potentially contaminated air from any given area.
- Upgrade air-filtration systems
- Considering lightweight architecture which are portable and easy to assemble to respond to disaster and crisis.
- Flexible building design



Illustrations by Emma Roulette
https://www.newyorker.com/culture/dept-of-design/how-the-coronavirus-will-reshape-architecture

Additional Considerations - Administration Building and Tracy Hills Operations & Utilities Facility





Additional Considerations - Bus Maintenance Facility / Corp Yard





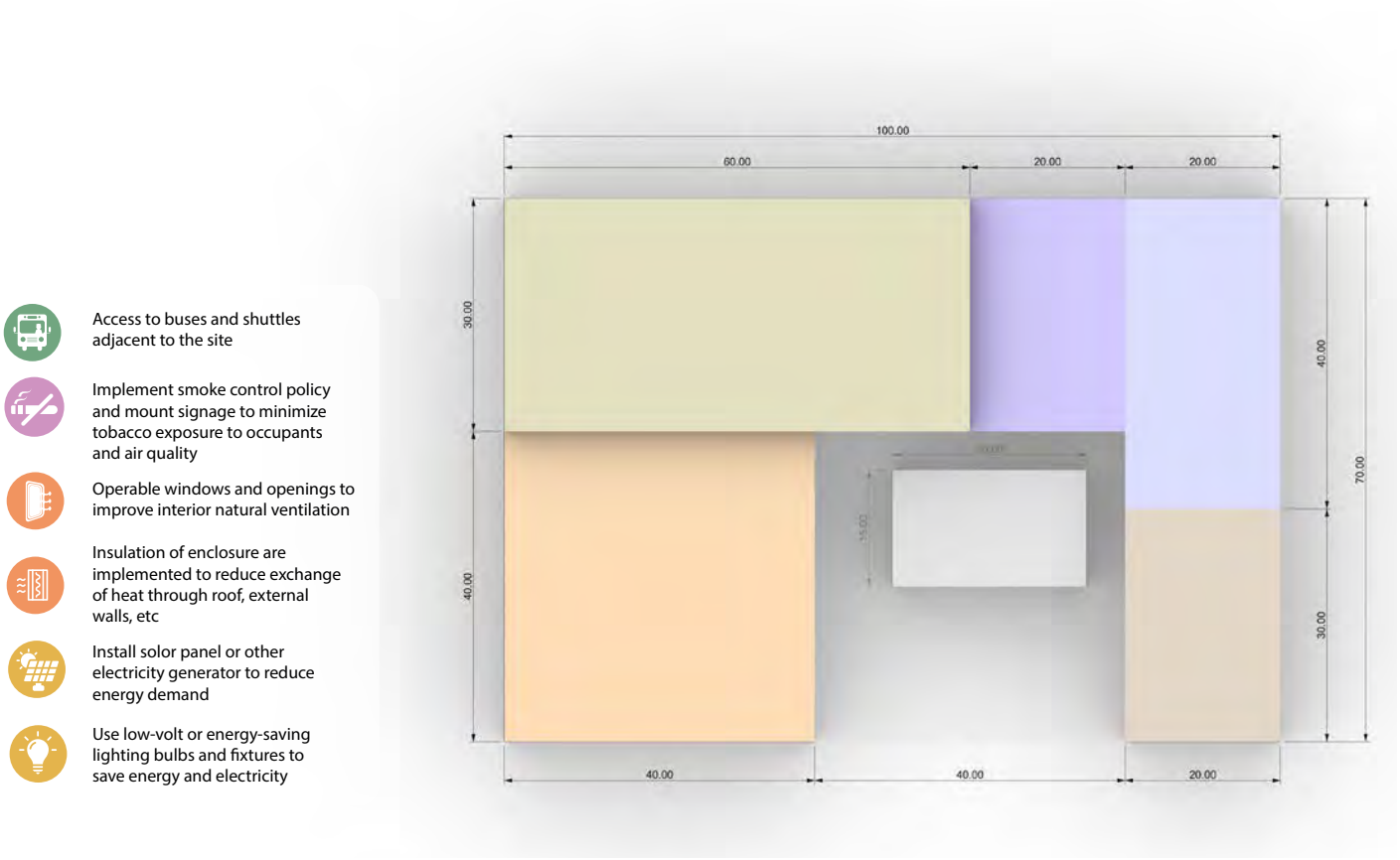
Additional Considerations - Aquatic Center and Temporary Homeless Shelter





Additional Considerations - Tracy Library and Multi-Generational Community Facility





VI. COST AND FUNDING OPTIONS

Cost Summary 439

Funding Options 442

Deferred Maintenance Cost Estimates 443

Cost Summary

SUMMARY

The proposed City Wide Public Facilities Master Plan Update carries project cost summaries, which includes:

NEW FACILITY PROJECTS

- Administration Building
- Bus Maintenance Facility/Corp Yard
- Tracy Hills Operations & Utilities Facility
- Aquatic Center
- Multi-Generational Recreation Center
- Tracy Library
- Temporary Housing

DEFERRED MAINTENANCE PROJECTS

- Animal Shelter
- Boyd Service Center Vehicle Fleet Shop
- Community Center
- Fire Administration
- Grand Theatre
- Tracy Sports Complex
- Tracy Library
- Tracy Museum

CAPITAL IMPROVEMENT PROJECTS

- Animal Shelter
- Boyd Service Center
- City Hall
- Community Center
- Fire Administration
- Grand Theatre
- Police Annex
- Senior Center
- Support Services Building
- Tracy Library
- Tracy Museum
- Tracy Transit Station (New)

The following renovation projects are not estimated but included as recommended projects for rearrangement of personnel.

RENOVATION PROJECTS

- City Hall Renovation
- Grand Theatre Renovation
- Boyd Service Center Renovation
- Airport Office Renovation

New Capital Projects

NEW FACILITIES

Attached below is a cost breakdown for new capital projects related to proposed new public facility buildings in the City of Tracy. This analysis is based on facilities needs and resulting building programs discussed as part of the Plan and contained in this report. The purpose of these preliminary order-of-magnitude cost estimates are to provide Tracy with a ballpark figure of construction costs for desired capital projects. The estimates include a 15% general contingency as well as a 10% design contingency and a 10% construction management contingency. Costs shown in this report are total costs, including all above contingencies, in 2021 dollars.

Building	Start Year	Proposed Area (Sqft)	Unit Cost per Sqft	Cost Estimate	Site Development	General Contingency (15%)	Design Contingency (10%)	Construction Management Contingency (10%)	FF&E & Vehicles	Land Acquisition	Other Identified Funding Sources	Total Cost to City of Tracy	Project Description
Administration Building	**2026**	21,000	$833	$17,493,000	$200,000	$2,653,950	$1,769,300	$1,769,300	$357,000			$24,242,550	The new Administration building will allow for more organization and tailored workspaces for city staff currently split between the Social Services Building, Police Annex and Social Services Trailer.
Bus Maintenance Facility/ Corp Yard	**2024**	17,400	$1,121	$19,500,000	$4,500,000	$3,600,000	$2,400,000	$2,400,000	$4,000,000			$36,400,000	This new facility will allow improved vehicle maintenance, storage, office and shops space for both the Transit Division and Public Works. Potential items to be programmed include Bus Maintenance Bays, Transit office and training space, electric charging infrastructure for buses, bus wash, and parking for multiple buses. Public Works spaces may include new shops, offices, parking and support spaces. The new facility will supplement existing operators at the Tracy Transit Station and Boyd Service Center.
Civic Center Parking Garage	**N/A**	60,000	$130	$7,800,000	$300,000	$1,215,000	$810,000	$810,000	$1,020,000	$625,000		$12,580,000	The new Parking Garage will provide additional parking stalls for civic center and surrounding neighborhoods.
Tracy Hills Operations and Utilities Facility	**2021**	400	$778	$311,200		$46,680	$31,120	$31,120	$6,800			$426,920	The Tracy Hills Operations & Utilities Annex site will provide parking and office space for one to two employees. This office space will be designed to be sharable with the ability to let staff sit down and work for short periods as necessary throughout the day.
Aquatic Center	**2025**	16,134	$2,394	$38,632,659	$7,600,000	$6,934,899	$4,623,266	$4,623,266	$274,278		($53,007,854)	$9,680,514	The Aquatic Center will supplement the Joe Wilson Pool as another recreational aquatic offering for the City of Tracy's community. The aquatic center will have various items including multiple pools, waterslides and a lazy river. The space may have employees from the Parks & Recreation department.

Building	Start Year	Proposed Area (Sqft)	Unit Cost per Sqft	Cost Estimate	Site Development	General Contingency (15%)	Design Contingency (10%)	Construction Management Contingency (10%)	FF&E & Vehicles	Land Acquisition	Other Identified Funding Sources	Total Cost to City of Tracy	Project Description
Multi-Generational Recreation Center	**2023**	52,637	$1,051	$55,305,357	$7,800,000	$9,465,804	$6,310,536	$6,310,536	$2,385,000		($73,000,000)	$14,577,232	The Multi-Generational Community Facility will supplement the existing Community Center and Senior Center with increased City space for community recreation and gathering opportunities. Potential spaces to be programmed include a gymnasium multi-purpose rooms, tech offerings, educational kitchen, administrative space and support spaces.
Community Center	**2036**	9,000	$739	$6,648,333	$225,000	$1,031,000	$687,333	$687,333	$221,000			$9,500,000	The new Community-oriented Center will combine the existing Community Center and Senior Center for community services and public activities.
Senior Center	**2038**	5,000	$760	$3,798,519	$200,000	$599,778	$399,852	$399,852	$102,000			$5,500,001	The Senior Center will be expanded to provide additional space for community gathering and events. The increased size of the Senior Center will allow Tracy to properly serve its senior population through buildout.
Tracy Library	**2029**	20,000	$840	$16,800,000	$1,425,000	$2,733,750	$1,822,500	$1,822,500	$340,000	$633,250		$25,577,000	A new City of Tracy library would supplement the existing library which is undersized to continue to provide library services to Tracy's expanding population. Potential program offerings at the new library include educational space and a teen center. Familiar library offerings would be provided.
Temporary Emergency Housing Ph 2	**2021**	9,596	$603	$5,786,569	$1,500,000	$1,092,985	$728,657	$728,657	$163,132			$10,000,000	Construction of a temporary homeless shelter will allow the city to respond to increased levels of homelessness in the area in current years. The temporary shelter is proposed to be located on the site of the current Waste Waters Treatment facility. Numbers of residents to house will be decided upon further program analysis. Construction of this facility will allow the City of Tracy to form more accurate future predictions and provide better service related to the needs of the homeless community.
Boyd Service Center													The Boyd Service Center renovation includes the expansion for additional Operations & Utilities facilities on the existing site. Those new facilities will serve Public Works to accommodate increasing number of staff in the future and provide adequate storage space.
Overall	**N/A**	28,370	$705	$20,000,000	$1,900,000	$3,285,000	$2,190,000	$2,190,000	$482,290			$30,047,290	
Administration	**N/A**	2,500	$2,060	$5,150,000	$129,150	$791,873	$527,915	$527,915	$127,347			$7,254,200	
TOTAL		**242,037**	**$12,013**	**$197,225,637**	**$25,779,150**	**$33,450,718**	**$22,300,479**	**$22,300,479**	**$9,478,847**	**$1,258,250**	**($126,007,854)**	**$185,785,705**	

Funding Options

The City of Tracy may consider a number of funding options to pay for the proposed public facilities. Following is an overview of options that may be available to the City, arranged according to whether costs are attributable to existing development or to new development.

FUNDING FOR COSTS ATTRIBUTABLE TO EXISTING DEVELOPMENT

The primary restriction on funding for the costs of facilities that are attributable to existing development is that these costs cannot be included in the calculation of impact fees that will be charged to new development. The following are a number of options that the City could consider:

The City's General Plan Land Use Element includes goals, objectives, policies and actions for all public facilities and specified private improvements:

- Existing Public Safety Facilities Impact Fee Fund Balance
  - Establish a clearly defined urban form and city structure.
  - Comprehensively plan for new development in the City's Sphere of Influence.
  - Ensure that the public facilities such as schools, parks, and other community facilities are accessible and distributed evenly and efficiently throughout the City.
  - Promote efficient residential development patterns and orderly expansion of residential areas to maximize the use of existing public services and infrastructure.
  - Encourage development near transit stations including the multi-modal station in Downtown, and the Altamont Commuter Express (ACE) station or stations.
- Funds Collected as Part of Development Agreements
  - Balance residential development with jobs, retail growth and the ability to provide services.
  - Expand the City's retail base.
  - Expand the City's industrial base.
  - Ensure adequate land for office development.
- Grants from Other Governmental or Charitable Sources
  - Expand the City's cultural and arts facilities.
- Parcel Taxes, Assessment Districts and Other Funding Mechanisms Requiring Voter Approval
  - Create a mix of housing types in neighborhoods.
  - Locate services and amenities within walking distance of neighborhoods.
- A physically, socially, and economically vibrant Downtown.
  - Target new uses for the Downtown to reinforce its role as the heart of the City.
  - Establish the Downtown as the governmental and cultural focus for the City and the region.
- Land development that mitigates its environmental, design and infrastructure impacts.
  - Minimize the impact of industrial development or aggregate mining on adjacent uses.
  - Ensure land use patterns that minimize conflicts between transportation corridors and neighboring uses.
  - Ensure that development near the Tracy Municipal Airport is compatible with airport uses and conforms to safety requirements.
- A citizenry that is involved in the City's planning process.
  - Provide opportunities for participation in the City's planning processes.
- No urbanization in unincorporated County areas as defined by this General Plan or the San Joaquin County General Plan, whichever is more restrictive, without annexation to the city, a pre-annexation agreement, or a letter of support from the City.
  - Participate proactively in land use decision making within Tracy's Planning Area in pursuit of the above-stated goal.
- Leadership in environmental, economic and social sustainability.
  - Undertake measures to reduce greenhouse gas emissions and improve the sustainability of actions by City government, residents and businesses in Tracy.

Deferred Maintenance Projects - 10 Years

EXISTING FACILITIES

Attached below is a cost breakdown for deferred maintenance projects related to proposed existing public facility buildings in the City of Tracy. This analysis is based on facilities needs and resulting building programs discussed as part of the Plan and contained in this report. The estimates include a 15% general contingency as well as a 10% design contingency and a 10% construction management contingency. All costs are in 2022 dollars and do not include escalation.

Building		Cost Estimate (Including 15% General Contingency)	Design Contingency (10%)	Construction Management Contingency (10%)	Total Cost
Animal Shelter		$1,029,250	$102,925	$102,925	$1,235,100
Boyd Service Center			**$709,550**	**$709,550**	**$8,514,600**
	Administration	$258,750	$25,875	$25,875	$310,500
	Maintenance Shops B	$759,000	$75,900	$75,900	$910,800
	Maintenance Shops C	$971,750	$97,175	$97,175	$1,166,100
	Warehouse D	$937,250	$93,725	$93,725	$1,124,700
	Vehicle Fleet Shop E	$4,168,750	$416,875	$416,875	$5,002,500
City Hall		$1,707,750	$170,775	$170,775	$2,049,300
Community Center		$1,057,138	$105,714	$105,714	$1,268,565
Fire Administration		$1,329,400	$132,940	$132,940	$1,595,280
Grand Theatre		$3,266,000	$326,600	$326,600	$3,919,200

Building		Cost Estimate (Including 15% General Contingency)	Design Contingency (10%)	Construction Management Contingency (10%)	Total Cost
Joe Wilson Pool		$138,000	$13,800	$13,800	$165,600
Lammersville School		$624,450	$62,445	$62,445	$749,340
Old Corp Yard		$276,000	$27,600	$27,600	$331,200
Police Annex		$756,125	$75,613	$75,613	$907,350
Police Station		$1,242,000	$124,200	$124,200	$1,490,400
Senior Center		$238,625	$23,863	$23,863	$286,350
Sports Complex Meeting Room		$553,150	$55,315	$55,315	$663,780
Support Services Building		$1,242,000	$124,200	$124,200	$1,490,400
Tracy Library		$948,750	$94,875	$94,875	$1,138,500
Tracy Municipal Airport					
	3 Series Hangars	$1,127,000	$112,700	$112,700	$1,352,400
	4 Series Hangars	$862,500	$86,250	$86,250	$1,035,000

Building		Cost Estimate (Including 15% General Contingency)	Design Contingency (10%)	Construction Management Contingency (10%)	Total Cost
	B Series Hangars	$202,975	$20,298	$20,298	$243,570
	F Series Hangars	$894,125	$89,413	$89,413	$1,072,950
	G Series Hangars	$284,625	$28,463	$28,463	$341,550
	Skyview Aviation	$1,371,375	$137,138	$137,138	$1,645,650
Tracy Historical Museum		$782,000	$78,200	$78,200	$938,400
Tracy Town Hall & Jail		$293,250	$29,325	$29,325	$351,900
Tracy Transit Station		$1,167,250	$116,725	$116,725	$1,400,700

Deferred Maintenance Project Cost - City Hall

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
City Hall									
	I	$15,000	$2,250	$17,250	Site paint		X		Painting of site elements including passenger loading zone near fountain at main entrance.
	I	$3,000	$450	$3,450	Repaint signage		X		Painting of facility signage.
			$0	$0	Exterior project (none)				
	I	$25,000	$3,750	$28,750	Reapply roof sealant		X		Clean roof and reapply sealant.
	I	$30,000	$4,500	$34,500	Foundation investigation	X			Investigation of cause of cracking around foundation at all buildings at Civic Center.
	I	$200,000	$30,000	$230,000	Foundation crack repair	X		X	Repair to minimal cracking at base of foundation at City Hall.
	MR	$85,000	$12,750	$97,750	HVAC study	X			HVAC study to identify proper needs for HVAC replacement.
	MR	$850,000	$127,500	$977,500	HVAC Equipment replacement	X		X	Replacement of rooftop mounted HVAC equipment.
	ADA	$30,000	$4,500	$34,500	Toilet ADA relocation	X		X	Relocation of some toilet room elements to be made ADA compliant.
	ADA	$250,000	$37,500	$287,500	Repaint signage		X		Rearrangement of cabinetry and furniture throuhgout the building to be made ADA compliant
	CIP	$3,500,000	$525,000	$4,025,000	CIP Space Renovation	X		X	Capital dedicated to interior space renovations at City Hall

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA
$1,711,200	$17,250	$0	$28,750	$264,500		$1,075,250	$322,000

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$1,075,250	$313,950	$322,000	$4,025,000	**$5,736,200**

Deferred Maintenance Project Cost - Support Services Building

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Support Services Building									
	I	$50,000	$7,500	$57,500	Site improvements	X			Repair chipping at landscape wall corners near main entrance. Repair asphalt chipping. Repaint crosswalk. Clean green site lighting units. Repair cracking at emergency generator CMU enclosure.
	I	$5,000	$750	$5,750	Trailer exterior maintenance		X		Replace window grate screws and clean lighting lenses at trailer.
	I	$15,000	$2,250	$17,250	Trailer roof maintenance		X		Replace rubber seals and clean tin roof.
	I	$60,000	$9,000	$69,000	Roof renovations	X		X	Repair multiple aspects of built-up roofing system. Clean drains of buildup.
	MR	$800,000	$120,000	$920,000	Interior remodel	X		X	Reapply window tint at interior. Replace wood door frames and window sills. Replace carpet tiles and rolled carpet. Modernize restroom surfaces, fixtures and finishes. Clean large scuff in floor length mirror in male restroom. Clean stains from restroom floor tile in general. Realign acoustic ceiling system. Replace gate separating reception from main staff area.
	I	$25,000	$3,750	$28,750	MEP improvements		X		
	ADA	$125,000	$18,750	$143,750	ADA improvements	X		X	Modify counter height dimensions and provide knee space in break areas to meet ADA.
	CIP		$0	$0	CIP Expansion Renovation	X		X	

Deferred Maintenance Project Cost - Support Services Building (Continued)

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA
$1,242,000	$57,500	$5,750	$86,250		$920,000	$28,750	$143,750

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$920,000	$178,250	$143,750	$0	**$1,242,000**

Deferred Maintenance Project Cost - Community Center

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Community Center									
	I	$5,000	$750	$5,750	Striping repair	X			Repaint yellow striping near Police Annex.
	I	$10,000	$1,500	$11,500	Site sealant repair		X		Repair cracks in sealant at areas between large concrete pours.
	I	$15,000	$2,250	$17,250	Landscape maintenance		X		Trim landscaping near double door entrance and landscape unfinished strip of dirt.
	MR	$175,000	$26,250	$201,250	Parking lot resurfacing	X			Resurface main parking lot.
	I	$20,000	$3,000	$23,000	Parking lot painting		X		Repaint parking lot striping
	I	$17,500	$2,625	$20,125	Wall and door maintenance		X	X	Repair damaged portions of walls and doors.
	MR	$100,000	$15,000	$115,000	Double pane windows	X		X	Replace single pane windows with double pane.
	I	$25,000	$3,750	$28,750	Exterior envelope repair		X		Repair exterior stucco at base of roof area and ground level.
	I	$50,000	$7,500	$57,500	Roof improvement project		X		Clean TPO roof surface at areas of high use and water ponding. Replace faded and rusting portions of peaked metal roof. Repair roof drains.
	I	$100,000	$15,000	$115,000	Foundation crack repair	X		X	Repair to minimal cracking at base of foundation at Community Center.
	I	$8,000	$1,200	$9,200	Floor tile addition		X		Add missing floor tiles at entrances to some building areas.
	I	$60,000	$9,000	$69,000	Interior finish improvements		X		Repaint walls in storage areas and fix scratches on other wall surfaces. Replace acoustic ceiling tile. Replace stovetop burners in kitchen and clean grout at ceramic tile. Repair lobby baseboards. Clean restroom tile flooring.
	I	$75,000	$11,250	$86,250	Snack service window	X			Finish components of snack service window and room.
	I	$25,000	$3,750	$28,750	Interior MEP maintenance		X		Clean and repaint floor vents. Clean air supply vents. Repair metal at exterior MEP area.
	MR	$225,000	$33,750	$258,750	Electrical switchboard	X		X	Replace main electrical switchboard.
	ADA	$2,250	$338	$2,588	Storage access		X		Provide wheelchair access for storage area in main hall.
	ADA	$3,000	$450	$3,450	Clear floor space		X		Clear floor space in storage areas.
	ADA	$3,500	$525	$4,025	ADA Parking repaint		X		Repaint ADA parking symbol and striping.

Deferred Maintenance Project Cost - Community Center (Continued)

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
	CIP		$0	$0	CIP Expansion Renovation	X		X	Capital dedicated to expansion of Community Center

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA
$1,057,138	$258,750	$163,875	$57,500	$115,000	$164,450	$287,500	$10,063

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$575,000	$472,075	$10,063	$0	**$1,057,138**

Deferred Maintenance Project Cost - Senior Center

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Senior Center									
	I	$7,500	$1,125	$8,625	Site maintenance		X		Clean bricks at exterior patio to improve physical appearance.
	I	$5,000	$750	$5,750	Site improvements		X		Repaint passenger loading zone striping.
	I	$20,000	$3,000	$23,000	Exterior maintenance		X		Repaint stucco where walls meet foundation. Replace exterior metal doors with scratches and dents.
	MR	$100,000	$15,000	$115,000	Structural Renovations				Repair cracking at foundation surrounding the Senior Center.
	ADA	$75,000	$11,250	$86,250	ADA improvements	X			Relocate toilet accessories for compliant mounting heights. Replacee kitchen appliances to meet ADA.
	CIP		$0	$0	CIP Expansion Renovation	X		X	

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA
$238,625	$14,375	$23,000		$115,000			$86,250

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$115,000	$37,375	$86,250	$0	**$238,625**

Deferred Maintenance Project Cost - Police Station

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Police Station									
	I	$140,000	$21,000	$161,000	Parking site improvements	X		X	Repave and restripe parking areas. Relocate Police cars for duration of parking lot improvements.
	I	$5,000	$750	$5,750	Roof cleaning		X		Clean roof surface. Repaint gutters and downspouts.
	I	$30,000	$4,500	$34,500	Structural investigation	X		X	Continue to monitor state of building cracking and flooring cracks. Perform structural investigation if cracks continue to grow.
	I	$40,000	$6,000	$46,000	Interior improvements	X		X	Provide door seals at bottoms of exterior doors that lack them including jail area. Paint interior walls throughout building. Replace stained ceiling tiles and investigate cause of staining.
	MR	$80,000	$12,000	$92,000	MEP Renovation Design	X		X	Design for replacement of failing heat exchanger units from closed water loop HVAC system.
	MR	$250,000	$37,500	$287,500	MEP Renovation Construction	X			Installation of new heat exchanger units for closed water loop HVAC system.
	ADA	$500,000	$75,000	$575,000	ADA Interior Improvements	X			Provide ADA compliant stair handrais and drinking fountains, as well as below counter space. Some interior renovations and room modifications including in break area are recommended. Provide ADA compliant locker room showers.
	ADA	$35,000	$5,250	$40,250	ADA Parking Improvements	X			Revise ADA parking stalls with new striping and loading areas.
	CIP	$33,000,000	$4,950,000	$37,950,000	CIP Expansion Renovation	X		X	Capital dedicated to expansion of the Police Station at the Civic Center site as described in the Public Safety Master Plan.

Deferred Maintenance Project Cost - Police Station (Continued)

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA
$1,242,000	$161,000		$5,750	$34,500	$46,000	$379,500	$615,250

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$379,500	$247,250	$615,250	$37,950,000	**$39,192,000**

Deferred Maintenance Project Cost - Police Annex

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Police Annex									
	I	$150,000	$22,500	$172,500	Parking site improvements	X		X	Repave lot, repaint striping and control box for electronic gate in police service vehicle parking area. Replace garage door.
	I	$50,000	$7,500	$57,500	Exterior renovations		X	X	Repaint concrete masonry exterior. Replace mounted light fixtures. Provide protection for exterior door sills.
	MR	$200,000	$30,000	$230,000	Interior renovations	X		X	Repair cracks in concrete flooring and utility closet wall in previous jail area. Repair and repaint metal doors, replace sink, and add lighting in same area. Remove ceiling stains and replace tiles. Clean carpeting and replace VCT flooring. Add lighting to public lobby area.
	I	$12,500	$1,875	$14,375	MEP maintenance		X		Add bracing to exposed ductwork.
	MR	$150,000	$22,500	$172,500	Boiler replacement	X		X	Replace boiler system.
	I	$75,000	$11,250	$86,250	Fire sprinkler renovations	X		X	Re-plumb some fire sprinkler heads and replace exterior sprinkler valves.
	ADA	$20,000	$3,000	$23,000	ADA improvements		X		Rebuild kitchenettes to provide adequate knee space.
	CIP	$3,000,000	$450,000	$3,450,000	CIP Space Renovation	X		X	Capital dedicated to future swing space renovations.

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA
$756,125	$172,500	$57,500			$230,000	$273,125	$23,000

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$402,500	$330,625	$23,000	$3,450,000	**$4,206,125**

Deferred Maintenance Project Cost - Fire Administration

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Fire Administration									
	I	$4,000	$600	$4,600	Railing painting		X		Repaint railings near main public entrance.
	I	$7,500	$1,125	$8,625	Site Cleaning		X		Clean rest area with bench and site signage.
	I	$10,000	$1,500	$11,500	Parking lot painting		X		Repaint parking lot striping and symbols.
	I	$25,000	$3,750	$28,750	Exterior envelope painting		X		Repaint exterior envelope including metal door at rear of building.
	I	$1,000	$150	$1,150	Porch maintenance		X		Clean floor surface of porch at second story.
	I	$15,000	$2,250	$17,250	Roof maintenance		X		Power wash roof surface and provide new sealant where required.
	I	$75,000	$11,250	$86,250	Structural investigation	X			Investigate cause of cracking at interior and exterior locations.
	MR	$750,000	$112,500	$862,500	Structural repair	X		X	Repair cracking at interior and exterior of facility.
	I	$65,000	$9,750	$74,750	Interior renovations		X		Clean light floor scuffing at kitchen. Reattach lighting at painted ceiling in living area and provide protection to wall corners in same area. Clean stain at seams under drinking fountain and clean baseboards. Replace break room flooring. Clean and tighten light fixture lenses. Replace stained acoustic ceiling tile by reception.
	I	$3,500	$525	$4,025	MEP insulation		X		Add weatherproofing protection for exterior MEP piping.
	MR	$150,000	$22,500	$172,500	Boiler installation	X		X	Provide new boiler system.
	ADA	$50,000	$7,500	$57,500	ADA improvements		X	X	Clear floor space. Relocate and repair elements of break areas in living space and main facility.
	CIP	$1,600,000	$240,000	$1,840,000	CIP Interior Renovation	X		X	Capital dedicated to interior renovations outlined in the Public Safety Master Plan.

Deferred Maintenance Project Cost - Fire Administration (Continued)

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA
$1,329,400	$24,725	$29,900	$17,250	$948,750	$74,750	$176,525	$57,500

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$1,035,000	$236,900	$57,500	$1,840,000	**$3,169,400**

Deferred Maintenance Project Cost - Transit Station (New)

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Tracy Transit Station (New)									
	MR	$350,000	$52,500	$402,500	Site renovations	X		X	Repair cracks in parking pavement. Repaint markings throughout same area. Repair and clean concrete tile. Clean all present vandalism and repaint trash receptacles. Fill in cracking at exterior wall structures.
	I	$75,000	$11,250	$86,250	Exterior improvements		X		Repaint exterior window grames. Clean water marks below windowsills. Replace exterior doors and hardware.
	MR	$175,000	$26,250	$201,250	Roofing improvements	X		X	Repair chipped clay roof tiles. Replace roof drains at access platform. Repair cracking in parapets of roof structure.
	I	$100,000	$15,000	$115,000	Interior improvements		X		Clean clay tile flooring. Replace roof drains at access platform. Repair cracking in parapets at roof structure.
	I	$65,000	$9,750	$74,750	Leakage investigation	X		X	Investigate causes of leakage and repair all leaks in office area and all gender restroom. Repair other leaks within ceiling system.
	I	$50,000	$7,500	$57,500	Water piping relocation	X		X	Relocate water piping in Room 109
	I	$100,000	$15,000	$115,000	HVAC improvements	X		X	Renovate HVAC system to meet needs.
	ADA	$100,000	$15,000	$115,000	ADA improvements	X		X	Provide appropriate truncated domes or other detectable warning at site or parking area. Flatten ADA parking stalls. Add restroom signage in main hallway. Relocate restroom accessories to be compliant.
	CIP		$0	$0	CIP Expansion Renovation	X		X	

Deferred Maintenance Project Cost - Transit Station (New) (Continued)

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA
$1,167,250	$402,500	$86,250	$201,250		$115,000	$247,250	$115,000

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$603,750	$448,500	$115,000	$0	**$1,167,250**

Deferred Maintenance Project Cost - Animal Shelter

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Animal Shelter									
	I	$100,000	$15,000	$115,000	Site Resurfacing and Paint	X		X	Resurface tanbark areas, place non-toxic rodent traps, repaint curbing.
	I	$25,000	$3,750	$28,750	Landscape structure refinish		X		Resurface landscape walls and repaint.
	I	$15,000	$2,250	$17,250	Paint exterior		X		Paint exterior envelope.
	I	$45,000	$6,750	$51,750	Attic roof access	X			Provide roof access for attic.
	I	$40,000	$6,000	$46,000	Minor structural improvements	X			Repair cracking at soffit of women's restroom and utilize non-structural seismic hold downs for laundry equipment.
	MR	$125,000	$18,750	$143,750	Interior renovations	X			See Project AS -1
	MR	$350,000	$52,500	$402,500	Non-structural E support	X			Provide new HVAC system for the facility.
	ADA	$20,000	$3,000	$23,000	ADA Reconfiguration Design	X			Design for ADA Reconfiguration
	ADA	$175,000	$26,250	$201,250	ADA Reconfiguration Project	X		X	Reconfigure various elements restrooms to meet ADA, as well as animal intake and housing.
	CIP	$5,000,000	$750,000	$5,750,000	CIP Expansion Renovation	X		X	Capital dedicated to expansion of Animal Shelter.

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA
$1,029,250	$143,750	$17,250	$51,750	$46,000	$143,750	$402,500	$224,250

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$546,250	$258,750	$224,250	$5,750,000	**$6,779,250**

Deferred Maintenance Project Cost - Tracy Library

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Tracy Library									
	MR	$300,000	$45,000	$345,000	Site renovations	X		X	Repave adjacent parking lot. Repair ground cover around children's play area. Resurface area by building to avoid ponding.
	I	$50,000	$7,500	$57,500	Exterior improvements		X		Properly attach gutters and add downspout at facility rear. Replace exterior lighting and drinking fountains. Clean masonry surface and paint exterior.
	I	$15,000	$2,250	$17,250	Roof inspection	X		X	Investigate light cracking at roof connections to eaves.
	I	$75,000	$11,250	$86,250	Interior renovations		X		Replace some ceiling tiles. Clean carpeting throughout. Replace restoom tile flooring. Replace restroom sinks. Repair leakage under restroom sinks.
	MR	$350,000	$52,500	$402,500	HVAC Equipment replacement	X		X	Replace rooftop mounted HVAC equipment.
	I	$20,000	$3,000	$23,000	MEP Maintenance		X		Repair and reattach loose plumbing lines from HVAC units.
	ADA	$15,000	$2,250	$17,250	ADA improvements		X	X	Rearrange interior furniture to meet ADA. Install truncated domes at front of site at passenger loading zone.
	CIP		$0	$0	CIP Expansion Renovation	X		X	Capital dedicated to XXXXXXXXX

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA
$948,750	$345,000	$57,500	$17,250		$86,250	$425,500	$17,250

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$747,500	$529,000	$17,250	$0	**$1,293,750**

Deferred Maintenance Project Cost - Joe Wilson Pool

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Lammersvile Historic Schoolhouse									
	MR	$250,000	$37,500	$287,500	Provide parking lot	X		X	Provide a dedicated parking lot.
	I	$40,000	$6,000	$46,000	Site renovations		X		Replace rotted canopy posts. Repaint canopy post signage. Clean and maintain adjacent ground cover.
	I	$60,000	$9,000	$69,000	Landscaping renovations	X			Renovate landscaping around schoolhouse.
	I	$90,000	$13,500	$103,500	Exterior renovations		X		Repair damaged wooden floorboards at porch and ramp. Repaint boards and exterior envelope. Replace roof shingles and gutters.
	I	$8,000	$1,200	$9,200	Structural investigation	X			Perform investigation related to minor cracking at exterior foundation.
	I	$75,000	$11,250	$86,250	Structural Renovations	X		X	Repair minor cracking surrounding foundation.
	I	$5,000	$750	$5,750	Interior renovations		X		Polish wood flooring at entrance.
	I	$5,000	$750	$5,750	Handrail addition		X		Install handrails at stairs.
	ADA	$10,000	$1,500	$11,500	ADA improvements		X		Move furniture to allow accessible path. Adjust mounting heights for interior accessories.

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA
$624,450	$402,500	$103,500		$95,450	$11,500		$11,500

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$287,500	$325,450	$11,500	N/A	**$624,450**

Deferred Maintenance Project Cost - Sports Complex

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Sport Complex									
	MR	$250,000	$37,500	$287,500	Site renovations	X		X	Repave parking lot. Repaint striping, pavement parking and curb paint. Repaint adjacent sidewalk and short black gate.
	I	$8,000	$1,200	$9,200	Landscape improvements		X		Re-seed grass areas
	I	$40,000	$6,000	$46,000	Exterior maintenance		X		Clean roof surface. Paint chipped areas. Clean exterior siding. Replace exterior mounted lighting fixtures. Replace awning surfaces.
	I	$20,000	$3,000	$23,000	Door maintenance		X		Replace aluminum entrance doors including locksets. Reseal lsealants at door thresholds to main restrooms. Resurface interior doors.
	I	$8,000	$1,200	$9,200	Structural investigation	X			Investigate cause of foundation cracking and CMU siding cracking.
	I	$75,000	$11,250	$86,250	Structural improvements	X		X	Repair to cracking at foundation and exterior.
	I	$35,000	$5,250	$40,250	Interior renovations		X		Replace interior vinyl tile flooring. Replace ceiling tile system
	I	$5,000	$750	$5,750	MEP maintenance		X		Replace housing for exterior AC unit.
	ADA	$40,000	$6,000	$46,000	ADA improvements		X	X	Replace and relocate main restroom fixturues and replace accessibility signage at parking lot asphalt.

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA
$553,150	$296,700	$69,000		$95,450	$40,250	$5,750	$46,000

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$287,500	$219,650	$46,000	N/A	**$553,150**

Deferred Maintenance Project Cost - Tracy Museum

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Tracy Museum									
	MR	$200,000	$30,000	$230,000	Site renovations	X		X	Refine landscaping. Repave and resurface adjacent portions of road. Repair cracking at concrete steps. Clean rusted wheel mechanicm and repair metal fencing at sliding gate.
	I	$150,000	$22,500	$172,500	Exterior renovations	X			Clean and paint exterior envelope including frames. Replace single pane windows with double paned glass.
	I	$35,000	$5,250	$40,250	Roof maintenance		X		Repair damage at roof
	I	$20,000	$3,000	$23,000	Roof structure	X		X	Assess structural integrity of roofing system and repair cracking.
	I	$100,000	$15,000	$115,000	Interior renovations	X			Replace stained ceiling tiles. Replace flooring at museum level.
	MR	$125,000	$18,750	$143,750	Plumbing system	X			Investigate and repair causes of leakage.
	ADA	$50,000	$7,500	$57,500	ADA improvements	X		X	Resurface sidewalk slope and ramp towards entrance. Install additional truncated domes.
	CIP		$0	$0	CIP Expansion Renovation	X		X	

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA
$782,000	$230,000	$172,500	$63,250		$115,000	$143,750	$57,500

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$373,750	$350,750	$57,500	$0	**$782,000**

Deferred Maintenance Project Cost - Grand Theatre

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Grand Theatre									
	I	$150,000	$22,500	$172,500	Site renovations	X		X	Repair cracking at exterior site curbing, and re-surface alleyway.
	MR	$350,000	$52,500	$402,500	Exterior renovations	X		X	Modernize exterior signage. Add exterior lighting. Replace the large metal door located at the alley area including track components.
	I	$130,000	$19,500	$149,500	Structural investigation	X			Perform structural investigation as to cracking.
	MR	$750,000	$112,500	$862,500	Structural maintenance	X		X	Protect exposed structure in mechanical areas. Reconstruct wood structure where needed. Repair cracking in concrete at office area. Repair cracking of concrete flooring in orchestra pit.
	MR	$1,000,000	$150,000	$1,150,000	Interior renovations	X		X	Realign ceiling tiles. Repace worn theatre seats. Reapply sound deadening material at stage. Refinish flooring at Black Box Theatre. Replace VCT at restroom floors. Replace ceiling tiles in gift shop. Clean grout at tile in art area and restroom at 2nd story.
	I	$60,000	$9,000	$69,000	MEP maintenance		X		Add lateral and longitudinal non-structual bracing to large ductwork in MEP access area. Replace backflow preventer in same area.
	MR	$300,000	$45,000	$345,000	New fire sprinklers	X		X	Replace RCM fire sprinkler system located in alleyway.
	ADA	$100,000	$15,000	$115,000	ADA improvements	X			Make minor dimensional fixes to handrails throughout lobby and clear floor spaces in work areas to meet ADA requirement.
	CIP	$5,000,000	$750,000	$5,750,000	CIP Space Renovation	X		X	Capital dedicated to rearrangement of interior office spaces aligning to future needs.

Deferred Maintenance Project Cost - Grand Theatre (Continued)

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Joe Wilson Pool									
	I	$25,000	$3,750	$28,750	Exterior maintenance		X		Clean out gutters and paint metal fascia and re-grout some exterior tiles.
	I	$15,000	$2,250	$17,250	Cracking investigation			X	Investigate cause of cracking. Repair not anticipated.
	I	$75,000	$11,250	$86,250	Interior renovations		X		Replace tiling at kitchen flooring. Update lighting system at reception. Repaint concrete blocks and grout in locker rooms.
	ADA	$5,000	$750	$5,750	ADA improvements		X		Repaint ADA parking stalls and symbols.

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA
$3,266,000	$172,500	$402,500		$1,012,000	$1,150,000	$414,000	$115,000

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$2,760,000	$391,000	$115,000	$5,750,000	**$9,016,000**

Deferred Maintenance Project Cost - Lammersville School

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Old Corp Yard									
	I	$100,000	$15,000	$115,000	Repave Corporation Yard Site	X			
	UR&R		$0	$0	Exterior envelope improvements	X		X	Replace entrance doors on both facilities.
	I	$40,000	$6,000	$46,000	Roofing improvements				Provide new roof for both facilities.
	UR&R		$0	$0	Structural Repair - Design Only				
	I	$100,000	$15,000	$115,000	Interior Renovations	X		X	Renovate ACT ceiling tile system. Remove rust stains from interior walls and paint. Provide other modernizations as needed.
	ADA		$0	$0	ADA improvements		X		

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA
$276,000	$115,000	$0	$46,000	$0	$115,000		$0

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
N/A	$276,000	$0	N/A	**$276,000**

Deferred Maintenance Project Cost - Tracy Townhall & Jail

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Tracy Townhall & Jail									
	I	$5,000	$750	$5,750	Site renovations		X		Paint side gate and clean concrete.
	I	$120,000	$18,000	$138,000	Exterior renovations	X		X	Fill grout between bricks that are beginning to separate. Paint or repair discolored or chipped masonry. Replace window frames. Add exterior lighting.
	I	$100,000	$15,000	$115,000	Interior renovations	X		X	Refinish hardwood floors. Repair ceiling cracks. Modernize restroom. Refinish walls of storage area.
	ADA	$30,000	$4,500	$34,500	ADA improvements	X		X	Improve entrance threshold. Relocate and replace various restroom elements.

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA
$293,250	$5,750	$138,000			$115,000		$34,500

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
N/A	$258,750	$34,500	N/A	**$293,250**

Deferred Maintenance Project Cost -Old Corp Yard

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Police Annex									
	I	$150,000	$22,500	$172,500	Parking site improvements	X		X	Repave lot, repaint striping and control box for electronic gate in police service vehicle parking area. Replace garage door.
	I	$50,000	$7,500	$57,500	Exterior renovations		X	X	Repaint concrete masonry exterior. Replace mounted light fixtures. Provide protection for exterior door sills.
	MR	$200,000	$30,000	$230,000	Interior renovations	X		X	Repair cracks in concrete flooring and utility closet wall in previous jail area. Repair and repaint metal doors, replace sink, and add lighting in same area. Remove ceiling stains and replace tiles. Clean carpeting and replace VCT flooring. Add lighting to public lobby area.
	I	$12,500	$1,875	$14,375	MEP maintenance		X		Add bracing to exposed ductwork.
	MR	$150,000	$22,500	$172,500	Boiler replacement	X		X	Replace boiler system.
	I	$75,000	$11,250	$86,250	Fire sprinkler renovations	X		X	Re-plumb some fire sprinkler heads and replace exterior sprinkler valves.
	ADA	$20,000	$3,000	$23,000	ADA improvements		X		Rebuild kitchenettes to provide adequate knee space.
	CIP	$3,000,000	$450,000	$3,450,000	CIP Space Renovation	X		X	Capital dedicated to future swing space renovations.

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA
$756,125	$172,500	$57,500			$230,000	$273,125	$23,000

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$402,500	$330,625	$23,000	$3,450,000	**$4,206,125**

Deferred Maintenance Project Cost - Boyd Service Center

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Boyd Service Center - Overall									
	CIP	$20,000,000	$3,000,000	$23,000,000	CIP Expansion Renovation	X		X	Capital dedicated to reorganize Boyd Service Center site and expand with new shops.

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$23,000,000	_	_	$23,000,000	**$46,000,000**

Deferred Maintenance Project Cost - Boyd Service Center A - Administration

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Boyd Service Center - Overall									
	CIP	$20,000,000	$3,000,000	$23,000,000	CIP Expansion Renovation	X		X	Capital dedicated to reorganize Boyd Service Center site and expand with new shops.

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$23,000,000	_	_	$23,000,000	**$46,000,000**

Deferred Maintenance Project Cost - Boyd Service Center B - Maintenance Shops

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Boyd Service Center - Overall									
	CIP	$20,000,000	$3,000,000	$23,000,000	CIP Expansion Renovation	X		X	Capital dedicated to reorganize Boyd Service Center site and expand with new shops.

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$23,000,000	_	_	$23,000,000	**$46,000,000**

Deferred Maintenance Project Cost - Boyd Service Center C - Maintenance Shops

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Boyd Service Center - Overall									
	CIP	$20,000,000	$3,000,000	$23,000,000	CIP Expansion Renovation	X		X	Capital dedicated to reorganize Boyd Service Center site and expand with new shops.

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$23,000,000	_	_	$23,000,000	**$46,000,000**

Deferred Maintenance Project Cost - Boyd Service Center D - Warehouse Building

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Boyd Service Center - Overall									
	CIP	$20,000,000	$3,000,000	$23,000,000	CIP Expansion Renovation	X		X	Capital dedicated to reorganize Boyd Service Center site and expand with new shops.

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$23,000,000	_	_	$23,000,000	**$46,000,000**

Deferred Maintenance Project Cost - Boyd Service Center E - Fleet Shop

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Boyd Service Center - Overall									
	CIP	$20,000,000	$3,000,000	$23,000,000	CIP Expansion Renovation	X		X	Capital dedicated to reorganize Boyd Service Center site and expand with new shops.

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$23,000,000	_	_	$23,000,000	**$46,000,000**

Deferred Maintenance Project Cost - Boyd Service Center - Old Transit Center Shops

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Boyd Service Center - Overall									
	CIP	$20,000,000	$3,000,000	$23,000,000	CIP Expansion Renovation	X		X	Capital dedicated to reorganize Boyd Service Center site and expand with new shops.

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$23,000,000	_	_	$23,000,000	**$46,000,000**

Deferred Maintenance Project Cost - 3 Series Hangars

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
3 Series Hangars									
	MR	$500,000	$75,000	$575,000	Site improvements	X		X	Resurface site pavement. Site drainage improvements.
	I	$10,000	$1,500	$11,500	Exterior envelope and signage		X		Paint exterior envelope and provide new signage.
	I	$75,000	$11,250	$86,250	Structural refinish	X		X	Refinish rusted structural elements.
	I	$10,000	$1,500	$11,500	Ceiling completion - Office		X		Provide completed acoustic ceiling tile system in airport office.
	MR	$250,000	$37,500	$287,500	Site water line (3 &4)	X			Provide a water line at site for 3 and 4 Series hangars.
	I	$15,000	$2,250	$17,250	Conduit replacement		X		Replace rusted conduit at exterior.
	ADA	$20,000	$3,000	$23,000	ADA Design	X			ADA Design for required improvements to Airport Office and Pilot's Lounge
	ADA	$100,000	$15,000	$115,000	ADA Project	X		X	ADA project for required improvements to Airport Office and Pilot's Lounge.

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA
$1,127,000	$575,000	$11,500		$86,250	$11,500	$304,750	$138,000

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$862,500	$126,500	$138,000	N/A	**$1,127,000**

Deferred Maintenance Project Cost - 4 Series Hangars

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
4 Series Hangars									
	MR	$500,000	$75,000	$575,000	Site improvements	X		X	Resurface site pavement. Site drainage improvements.
	I	$10,000	$1,500	$11,500	Exterior envelope and signage		X		Paint exterior envelope and provide new signage.
	I	$75,000	$11,250	$86,250	Structural rusting refinish	X		X	Refinish rusted structural elements.
	I	$50,000	$7,500	$57,500	Pilot's Lounge Interior Renovations	X		X	Provide upgrade to Pilot's lounge interior.
	I	$15,000	$2,250	$17,250	Conduit replacement		X		Replace rusted conduit at exterior.
	ADA	$100,000	$15,000	$115,000	Pilot's Lounge ADA Project	X		X	ADA project for required improvements to Airport Office and Pilot's Lounge.

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA
$862,500	$575,000	$11,500		$86,250	$57,500	$17,250	$115,000

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$75,000	$172,500	$115,000	N/A	**$362,500**

Deferred Maintenance Project Cost - B Series Hangars

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
B Series Hangars									
	I	$10,000	$1,500	$11,500	Structural rot investigation	X		X	Investigation of extent of structural rot and rehabilitation options.
	I	$100,000	$15,000	$115,000	Structural Rehab Design	X		X	Replacement of rotted structural elements.
	I	$7,500	$1,125	$8,625	Floor stain refinish		X		Clean stains on interior concrete flooring.
	I	$4,000	$600	$4,600	Non-structural E support		X		Replace rusted support elements from exterior ground mounted transformer.
	ADA	$50,000	$7,500	$57,500	Provide accessible parking	X		X	
	ADA	$5,000	$750	$5,750	Clear floor space		X	X	Clear floor space to meet ADA.

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA
$202,975				$126,500	$8,625	$4,600	$63,250

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
N/A	$139,725	$63,250	N/A	**$202,975**

Deferred Maintenance Project Cost - F Series Hangars

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
F Series Hangars									
	I	$15,000	$2,250	$17,250	Repaint exterior		X		Repaint exterior façades in the same color.
	I	$10,000	$1,500	$11,500	Roofing maintenance		X		Clean and apply protection to flat roofs.
	I	$15,000	$2,250	$17,250	Structural Repair - Design Only	X			Design for rust repair for various elements.
	I	$100,000	$15,000	$115,000	Rust removal	X		X	Repair rusted areas of the hangar including entrance thresholds and door components.
	I	$15,000	$2,250	$17,250	Door latches		X	X	Replace rusted door latch system.
	I	$100,000	$15,000	$115,000	Parts fabrication	X		X	Order fabricated parts for rusted components throughout hangar including tow hitches.
	I	$7,500	$1,125	$8,625	Interior cleaning		X		Clean interior floors and interior lighting lenses.
	I	$5,000	$750	$5,750	Lighting fixture addition		X		Add photocell lighting fixtures directly to hangars.
	I	$35,000	$5,250	$40,250	Site utility and MEP investigation	X			Investigate cause of and repair for leaks.
	MR	$350,000	$52,500	$402,500	Site utility and MEP repair	X			Repair related to underground leaks.
	ADA	$125,000	$18,750	$143,750	ADA improvements	X			Clear floor space and modify door operations and threshold to meet ADA.

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA
$894,125		$17,250	$11,500	$132,250	$140,875	$448,500	$143,750

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$402,500	$347,875	$143,750	N/A	**$894,125**

Deferred Maintenance Project Cost - G Series Hangars

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
G Series Hangars									
	I	$100,000	$15,000	$115,000	Sliding door repair	X		X	Repair mechanical issues with exterior sliding door tracks.
	I	$15,000	$2,250	$17,250	Weatherproofing maintenance		X		Repair weatherproofing at door bases to be plumb.
	I	$7,500	$1,125	$8,625	Floor stain refinish		X		Clear stains on interior concrete flooring.
	ADA	$125,000	$18,750	$143,750	ADA improvements	X		X	Clear floor space and modify door threshold to meet ADA requirements.

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA
$284,625		$132,250			$8,625		$143,750

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
N/A	$140,875	$143,750	N/A	**$284,625**

Deferred Maintenance Project Cost - Skyview Aviation

Building	Priority	Base Cost	General Contingency (15%)	Escalated Cost w/ General Contingency	Project	CIP	Maintenance	Further Analysis	Additional Project Description
Skyview Aviation									
	MR	$500,000	$75,000	$575,000	Site improvements	X		X	Alter site drainage so water flows away from the building and repaint parking stalls.
	I	$17,500	$2,625	$20,125	Exterior renovations		X		Repaint exterior metal siding.
	I	$20,000	$3,000	$23,000	Door Tracks	X		X	Install properly sized tracks for large sliding doors.
	I	$85,000	$12,750	$97,750	Roof renovations	X			Replace roof and skylight panels.
	I	$15,000	$2,250	$17,250	Structural investigation	X			Investigate proper repair to unique structural deterioration.
	MR	$200,000	$30,000	$230,000	Structural Repair	X		X	Tighten straps holding arch of structure at exterior and perform additional structural investigation at gate tracks. Repair hangar structure.
	I	$80,000	$12,000	$92,000	Interior improvements	X		X	Modernize interior lighting. Provide new flooring for admin and office areas.
	MR	$150,000	$22,500	$172,500	MEP Renovations	X		X	Replace out of service HVAC units located on-site near parking.
	ADA	$125,000	$18,750	$143,750	ADA improvements	X	X	X	Replace and relocate many toilet accessories. Create new ADA compliant restroom.

Summary by Project Type

DEFFERED MAINTENANCE TOTAL	Site	Exterior Envelope	Roofing	Structure	Interior Elements	MEP systems	ADA
$1,371,375	$575,000	$43,125	$97,750	$247,250	$92,000	$172,500	$143,750

Summary by Priority

Major Renovations	Infrastructure Improvements	ADA Compliance	CIP	TOTAL
$977,500	$250,125	$143,750	N/A	**$1,371,375**



Water and Recycled Water Impact Fee Nexus Study

City of Tracy
Master Plan Area

June 2025

Prepared for:

Prepared by:

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EXECUTIVE SUMMARY AND INTRODUCTORY SECTIONS

INTRODUCTION

The City of Tracy (City) is located in the Central Valley and is the second most populated city in San Joaquin County (County). The City spans an area of about 26 miles within a triangle formed by Interstate 205 to the north, Interstate 580 to the southwest, and Interstate 5 to the east. The City is located near both fertile and infertile agricultural lands, due to a region of hills west of Tracy. The City is a railroad town that came from the mid-19th century construction.

The City was founded in 1878 and incorporated as a city in 1910. The City of Tracy grew rapidly and prospered as the center of an agricultural area, even when larger railroad operations began to decline in the 1950s. Competition with trucking and automobiles resulted in widespread railroad restructuring. The City has its origins associated with the Central Pacific Railroad, which ran from Sacramento through Stockton to the San Francisco Bay area. The City's ties to the agriculture industry allowed for steady growth in early to mid-20th century but growth accelerated starting in the 1980's as the City served as an extended bedroom community to the San Francisco, Oakland, and Silicon Valley metropolitan areas.

The City is part of the San Jose-San Francisco-Oakland, California Combined Statistical Area, an extension of the Bay Area. At the time of the 2020 U.S. Census, the City population was 93,000. The California Department of Finance estimates that as of January 1, 2023, the City population is 95,615, incorporating the 2020 Census benchmark.

As the resident population and non-resident employment in the City increase, there exists a correlating rise in the demand for public infrastructure and services to support the increased demand on the City. California's Assembly Bill 1600 (AB 1600) adopted in 1987 and codified as California Government Code Section 66000 et. seq., allows the City to impose Development Impact Fees on new development within the City. Development Impact Fees (DIFs) are one-time charges on new development that is collected and used by the City to cover the cost of capital facilities, vehicles, and equipment that are required to serve new growth.

In December 2012, the City adopted the Citywide Water System Master Plan completed by West Yost Associates. In August of 2013, a Technical Memorandum was issued by West Yost Associates calculating the development impact fees that were necessary to fund the infrastructure improvements required at buildout for water distribution, water supply, water treatment and recycled water. The Water and Recycled Water Impact Fees were adopted in January of 2014 along with other Master Plan Fees and established the fees for development in the new areas of the City that were not already covered in one of the City's existing fee programs. The Water Fee is comprised of three components: Water Distribution, Water Supply, and Water Treatment plus the Recycled Water Fee. In the years since, the City has applied an annual Engineering News

Record (ENR) Construction Cost Index (CCI) increase to the fees but has not completed a comprehensive update.

The City subsequently hired West Yost Associates to complete the Citywide Water System Master Plan Update (May 2023), (WMP). The WMP was adopted at City Council on April 16, 2024. The purpose of this Nexus Study is to incorporate the findings from the WMP and update the Water and Recycled Water Impact Fees.

The goal of the City is to develop a fee program that achieves the funding objectives required to fund facilities identified in the master plans, balances fee levels with desired economic growth, and complies with the legal requirements of Assembly Bill 1600 (AB 1600) and Assembly Bill 602 (AB 602).

NEXUS STUDY SUMMARY

Purpose

As development occurs in the City, new backbone infrastructure and capital facilities are required to mitigate the increased demand created by new residents and workers. DIFs fund this required backbone infrastructure and capital facilities as well as the related administrative costs through the City's fee program. The Master Plan fee program area contains separate fee categories for each type of infrastructure and capital facilities. This Nexus Study updates the Water and Recycled Water Impact Fee.

This report is designed to satisfy AB 1600 Nexus requirements, AB 602 guidance, and provide the necessary technical analysis to support the adoption of the updated fees. The fees will be effective 60 days after the City's final action establishing and authorizing the collection of the fees.

Fee Program Costs

The Water Fee is based on the cost of the water projects identified as attributable to new development in the WMP. The WMP groups the potable water facility projects collectively, but due to pre-existing development agreements, not all new development within the Master Plan fee program area pay all three components (Water Supply, Water Distribution, and Water Treatment) and thus individual fee components are calculated that collectively make up the Water Fee. The identified Water projects needed to serve new development and the associated estimated CIP costs, identified in Table 10-2 and Table 10-3 in the WMP, amount to $233.9 million (in 2020 dollars). Costs were escalated to 2025 dollars and a 15% additional increase was applied to construction projects based on West Yost's recommendation to account for material costs increasing greater than the ENR indices. Due to the delay in the adoption of the Nexus Study, the ENR CCI change from 2024 to April of 2025 was analyzed and it was determined that there has not been a significant change in the index, therefore, the costs are not further being updated.

After accounting for the projects completed, expenditures to date, existing fund balance, outstanding credits/reimbursements, and deferred payments, the remaining cost to fund the collective Water Fee facilities needed to serve future development amounts to almost $301.48 million. This does not account for any future inflationary escalation of fees.

The Recycled Water Fee is based on the cost of recycled water projects identified as attributable to new development in the WMP. The identified Recycled Water projects needed to serve new development and the associated estimated CIP costs, identified in Table 10-4 and Table 10-5 in the WMP, amount to $93.45 million (in 2020 dollars). Costs were escalated to 2024 dollars and a 15% additional increase was applied to recycled water projects based on West Yost's recommendation to account for materials costs increasing greater than the ENR indices. Estimated construction costs have been escalated to current dollars using the San Francisco ENR CCI. Due to the delay in the adoption of the Nexus Study, the ENR CCI change from 2024 to April of 2025 was analyzed and it was determined that there has not been a significant change in the index, therefore, the costs are not further being updated. After accounting for expenditures to date, the existing fund balance, outstanding credits/reimbursements, deferred payments, ROW credits, and grant funding, the remaining cost to fund Recycled Water facilities needed to serve future development amounts to $76.5 million. This does not account for any future inflationary escalation of fees.

Updated Fees

Pursuant to AB 602, residential development fees are to be assessed on a per square foot basis. To yield consistency across fees assessed on non-residential land uses, non-residential development fees will be assessed per 1,000 building square foot.

Table ES-1 shows the proposed updated Water and Recycled Water Impact Fees.

Table ES-1: Proposed Water and Recycled Water Impact Fees

	Water			
Land Use	**Distribution**	**Supply**	**Treatment**	**Recycled Water**
Residential (per SF)[1]				
Single Family Residential	$1.69	$0.93	$1.30	$0.87
Multi-Family Residential (Attached 2-4)	$2.31	$1.27	$1.78	$1.19
High Density Residential (Attached 4+)	$2.49	$1.37	$1.92	$1.28
Non-Residential (per 1,000 Bldg SF)[1]				
Office	$849	$466	$654	$436
Commercial	$1,447	$794	$1,115	$743
Industrial	$696	$382	$536	$357

[1] Residential fees rounded to the nearest hundredths. Non-Residential fees rounded to the nearest dollar.

Proposed Fees Comparison with Existing Fees

Table ES-2 compares the proposed Water Fees to the Existing Water fees (as of July 1, 2024). The existing residential per unit fees were converted to fees per square foot using the same average unit sizes as the proposed fees. The existing non-residential fees were converted from a per acre fee to a per 1,000 building square feet (SF) fee using the FAR assumptions in this Nexus Study. The Program Management component of the existing Water and Recycled Water Fee were removed to provide an accurate comparison as the Program Management components of each Master Plan Fee has been consolidated into one Program Management standalone fee. To account for new development's fair share of the facilities since the start of the fee program, fund balances and expenditures to date were incorporated into the fee calculation and removed from the remaining costs before dividing by the remaining new development. Further information on the comparison is described within Section 2 and Section 3 of this report.

Table ES-2: Proposed Water Fee Comparison to Existing Water Fee

	Total Water Fee		
Land Use	**Proposed Fee**	**Existing Fee [1]**	**Percent Change**
Residential (per SF)			
Single Family Residential	$3.92	$5.08	-23%
Multi-Family Residential (Attached 2-4)	$5.36	$6.10	-12%
High Density Residential (Attached 4+)	$5.78	$6.82	-15%
Non-Residential (per 1,000 Bldg SF)			
Office	$1,969.00	$2,021.59	-3%
Commercial	$3,356.00	$4,043.39	-17%
Industrial	$1,614.00	$1,819.43	-11%

[1] Program Management (5%) removed from Construction Cost of Existing Fee for an accurate comparison.

Table ES-3 compares the proposed Recycled Water Fee to the existing Recycled Water Fee (as of July 1, 2024). The existing per unit fee was converted to a fee per square foot using the same average unit sizes as the proposed fees. The existing non-residential fees were converted from a per acre fee to a per 1,000 building SF fee using the FAR assumptions in this Nexus Study. Further information on the comparison is described within **Section 4** of this report.

Table ES-3: Proposed Recycled Water Fee Comparison to Existing Recycled Water Fee

Land Use	Proposed Recycled Water	Existing Recycled Water [1]	Percent Change
Residential (per SF)			
Single Family Residential	$0.87	$1.44	-40%
Multi-Family Residential (Attached 2-4)	$1.19	$2.07	-42%
High Density Residential (Attached 4+)	$1.28	$2.20	-42%
Non-Residential (per 1,000 Bldg SF)			
Office	$436.00	$844.79	-48%
Commercial	$743.00	$1,554.24	-52%
Industrial	$357.00	$760.32	-53%

[1] Program Management (5%) removed from Construction Cost of Existing Fee for an accurate comparison.

NEXUS STUDY REQUIREMENTS (ASSEMBLY BILL 1600)

AB 1600 was enacted by the State of California in 1987 creating the Mitigation Fee Act - Section 66000 et seq. of the Government Code. The Mitigation Fee Act requires that all public agencies satisfy the following requirements when establishing, increasing, or imposing a fee as a condition of approval of a development project:

1. Identify the purpose of the fee.
2. Identify the use to which the fee is to be put. If the use is financing public facilities, the facilities shall be identified.
3. Determine how there is a reasonable relationship between the fees use and the type of development project on which the fee is imposed.
4. Determine how there is a reasonable relationship between the need for the public facility and the type of development project on which the fee is imposed.
5. Determine how there is a reasonable relationship between the amount of the fee and the cost of the public facility or portion of the public facility attributable to the development on which the fee is imposed.

The purpose of this report is to demonstrate that the Water Fee and Recycled Water Fee comply with the Mitigation Fee Act. The assumptions, methodologies, facility standards, costs, and cost allocation factors that were used to establish the nexus between the fees and the development on which the fees will be charged are summarized in the subsequent sections of this report.

ASSEMBLY BILL 602

Assembly Bill (AB) 602, enacted by the State of California in 2021, amended Sections 65940.1 and 66019 of, and added Section 66016.5 to the Government Code. AB 602 requires that if a local

agency conducts and adopts an impact fee nexus study after January 1, 2022, the local agency shall follow all of the following standards and practices:

1. Before the adoption of an associated development fee, an impact fee nexus study shall be adopted.
2. When applicable, the nexus study shall identify the existing level of service for each public facility, identify the proposed new level of service, and include an explanation of why the new level of service is appropriate.
3. A nexus study shall include information that supports the local agency's actions, as required by subdivision (a) of Section 66001 of the Government Code.
4. If a nexus study supports the increase of an existing fee, the local agency shall review the assumptions of the nexus study supporting the original fee and evaluate the amount of fees collected under the original fee.
5. A nexus study adopted after July 1, 2022, shall calculate a fee imposed on a housing development project proportionately to the square footage of proposed units of the development. A local agency that imposes a fee proportionately to the square footage of the proposed units of the development shall be deemed to have used a valid method to establish a reasonable relationship between the fee charged and the burden posed by the development. A nexus study is not required to comply with the requirements to calculate a fee imposed on a housing development project proportionally to the square footage of the proposed units if the local agency makes the following findings:
    - An explanation as to why square footage is not appropriate metric to calculate fees imposed on housing development project.
    - An explanation that an alternative basis of calculating the fee bears a reasonable relationship between the fee charged and the burden posed by the development.
    - That other policies in the fee structure support smaller developments or otherwise ensure that smaller developments are not charged disproportionate fees.
6. Large jurisdictions shall adopt a capital improvement plan as a part of the nexus study.
7. All studies shall be adopted at a public hearing with at least 30 days' notice, and the local agency shall notify any member of the public that requests notice of intent to begin an impact fee nexus study of the date of the hearing.
8. Studies shall be updated at least every eight years, beginning on January 1, 2022.
9. The local agency may use the impact fee nexus study template developed by the Department of Housing and Community Development pursuant to Section 50466.5 of the Health and Safety Code.

This report demonstrates that all fee components comply with AB 602.

Section 1 POPULATION AND LAND USE ASSUMPTIONS

LAND USE TYPES

To ensure a reasonable relationship between each fee and the type of development paying the fee, different land use types must be distinguished. The land use categories used in this analysis are defined below.

- **Single Family Residential (SFR)**: Detached single-family dwelling units. Includes very low density, low density, and age-restricted units.
- **Multi-Family Residential (MFR)**: Attached residential project consisting of 2 to 4 units.
- **High Density Residential (HDR)**: Attached residential project consisting of 4 or more attached units.
- **Accessory Dwelling Unit (ADU)**: A second unit, attached or detached from a SFR.
- **Office**: All general, professional, and medical office development.
- **Commercial**: All commercial, retail, educational, hotel/motel development, and mixed-use development.
- **Industrial**: All manufacturing and warehouse development.

Some developments may include more than one land use type, such as an industrial warehouse with living quarters (a live-work designation) or a planned unit development with both Single and Multi-Family uses. In these cases, the fees will be calculated separately for each land use type.

GROWTH FORECASTS

Growth projections are used as indicators of demand. The City's existing population, as well as buildout population projections, are critical assumptions used to calculate the Water and Recycled Water Fees. The following resources were used as a part of this analysis:

- Estimates of population projections and total development through buildout were based on the City's Land Use Plan by TAZ provided by the City's Planning Department and updated to remove permits that were pulled between the time the projections were made and May 23rd, 2025. Estimated persons per household data were based on the 2021 US Census American Community Survey.
- Worker projections were based on the employment density per worker identified in the U.S. Green Building Council LEED BD+C Default Occupancy Counts.

Table 1-1 identifies the estimated growth projections to buildout.

Table 1-1: Projected New Population and Employee Growth

Land Use	Density	Total Projected New Development at Buildout	
Residential	*Persons Per Household*[1]	*Dwelling Units*	*New Population*
Single Family Residential[2]	3.50	15,539	54,387
Multi-Family Residential (Attached 2-4)	2.80	875	2,450
High Density Residential (Attached 4+)[3]	2.60	3,871	10,065
Subtotal Residential		**20,285**	**66,902**
Non-Residential	*Employment Density*[4]	*Square Feet*	*New Employees*
Office	300	4,952,249	16,507
Commercial	500	12,225,611	24,451
Industrial	1,500	70,832,851	47,222
Subtotal Non-Residential		**88,010,711**	**88,180**

Source: City provided land use TAZ data. Updated to remove developments that have pulled permits as of 05/23/2025.

[1] Persons per household assumption using data from the US Census American Community Survey (2021).

[2] Includes Very Low Density, Low Density Residential, and Single Family Age Restricted.

[3] Includes High Density and Very High Density Residential. 1,685 units shifted from Buildout to 2040 to match Master Plan assumptions.

[4] Employment density is the square feet per worker based on U.S. Green Building Council LEED BD+C Default Occupancy Counts.

SERVICE POPULATION

The Water System Master Plan is intended to serve as a guiding document for the planning and implementation of water system improvements to accommodate future growth at buildout. In calculating the service demand for new growth, land uses were assigned a water demand factor identified by the Water Master Plan update based on water usage. Due to pre-existing development agreements and planning, not all new development within the Master Plan program area will pay all three components of the Water Fee (Water Supply, Water Distribution, and Water Treatment).

The Tracy Hills development is excluded from the Water Distribution Fee as they are building their own potable water system that is detached from the rest of the City and will be responsible for funding those facilities separately.

The Tracy Hills areas that receive water from the Byron Bethany Irrigation District ("BBID") are excluded from the Water Supply Fee as they have secured their own water supply source. The Developer has worked directly with BBID on funding improvements needed. Only a" Sub Area"

of the Developer Phases in Tracy Hills will be responsible to pay the Water Fee. This "Sub Area" from the Tracy Hills FIP is shown in **Figure A-3** in **Appendix A**.

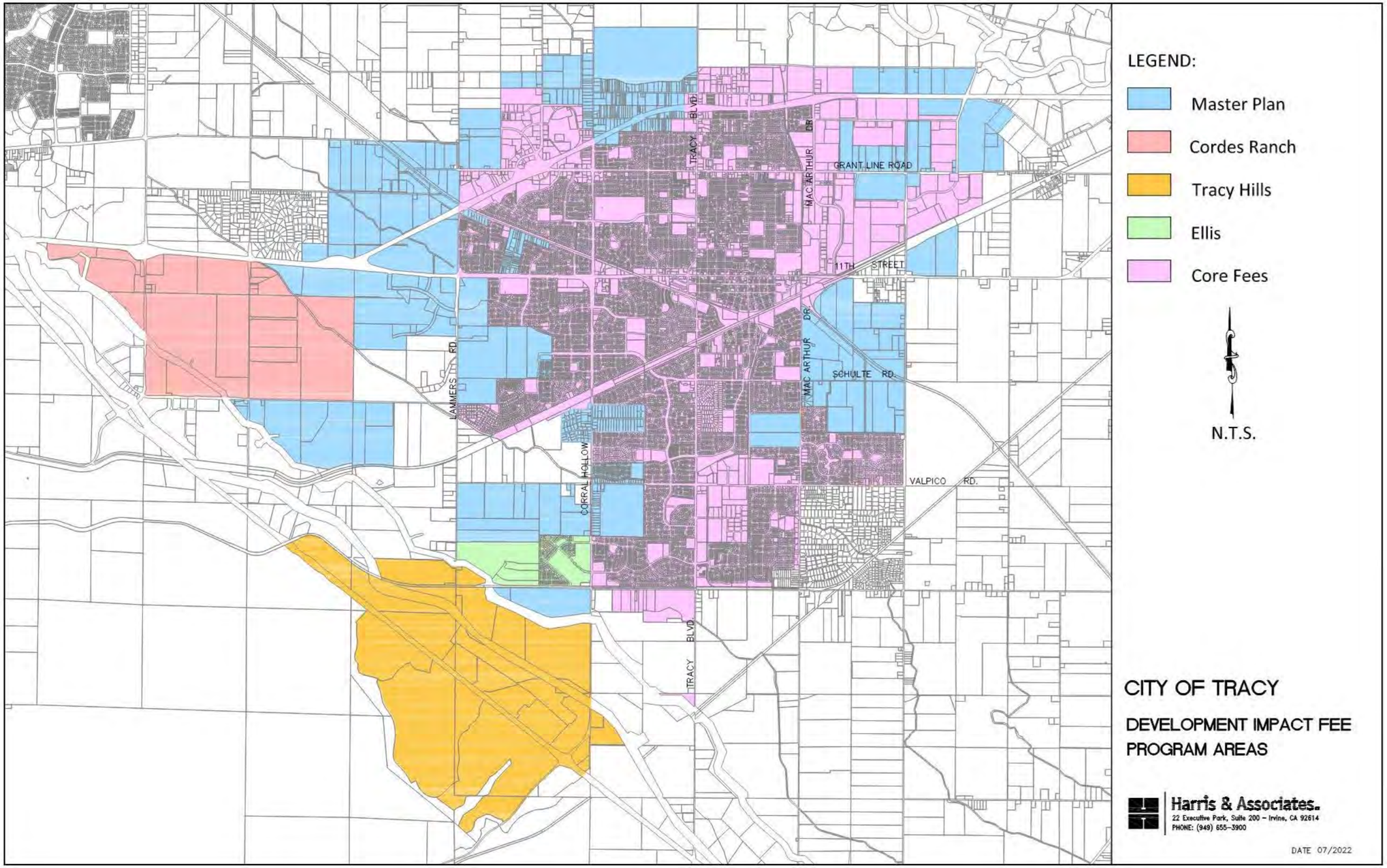
All new development in the Master Plan program area will pay the Water Treatment Fee.

All new development within the Master Plan program area will pay the Recycled Water Fee. Demand for Recycled Water services and the associated facilities are based on the City's future service demand at Buildout, so the projections identified in **Table 1-1** are used as the service population assumptions.

Figure 1-1 shows the Master Plan fee program areas. Cordes Ranch and Tracy Hills are depicted in separate colors to differentiate that while they are generally subject to the Master Plan fees, they have agreements in place with the City that details their specific fees. The Core Fees program area has their own set of fees as outlined in the "Core Fees Development Impact Fee Study" adopted August 2021 and the Ellis program area has their own set of fees as outlined in the "Ellis Program Area Finance and Implementation Plan" adopted August 2013.

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Figure 1-1: City of Tracy Fee Program Areas



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RESIDENTIAL DENSITY

Using persons per household (PPH) data for residential units is a common metric used to establish a reasonable relationship between the demand created by the development project and the fees charged. The residential density factors were derived using information from the US Census American Community Survey (2021). The following average density factors are used for each land use type.

Residential	Density
Single Family	3.50 residents per dwelling unit
Multi-Family (Attached 2-4)	2.80 residents per dwelling unit
High Density (Attached 4+)	2.60 residents per dwelling unit

FLOOR AREA RATIO

For non-residential land uses, the estimated building square footage is determined by using an average Floor Area Ratio (FAR). The FAR assumptions are based on assumptions the Tracy Travel Demand Model used in the *Citywide Roadway & Transportation Master Plan Update*, prepared by Kimley-Horn (August 2022, Revised Costs June 2023), and is calculated based on the proportion of the total building floor area to the building's lot size. The FARs used in this analysis are shown below.

Non-residential fees are now assessed per 1,000 building SF. Calculations performed in this study require the conversion of a non-residential fee per acre to a fee per 1,000 building SF. This conversion is calculated by dividing the fee per acre by a FAR conversion factor shown below. The FAR conversion factors are calculated by converting 1 acre to 43,560 SF, multiplying by the corresponding FAR and then dividing by 1,000. These factors are rounded to the nearest hundredth. The FAR conversion factors are shown below.

Non-Residential	FAR	FAR Conversion
Office	0.45	19.60
Commercial	0.30	13.07
Industrial	0.50	21.78

AVERAGE UNIT SIZES

To meet AB 602 requirement five (5), that states that a fee imposed on a housing development project shall be calculated proportionately to the square footage of proposed units of the development, this Nexus Study calculates a fee per unit and then uses the average unit size for Single Family Residential, Multi-Family Residential (Attached 2-4), and High Density Residential (Attached 4+) based on the estimated average size of planned new development within each land use category in the City to convert to a fee per square foot. The average unit size is based on the livable square footage of the residential units.

Basing the average unit size on livable square footage for all residential units is not only consistent with industry standard for fee calculations, but it also provides a strong nexus between the impact of the unit and the fee amount. A good example of industry standard are school fees in California. In California, school fees are based on assessable space, which means a quantity equal to the area (expressed in square feet) within the perimeter of a residential structure, not including the carport, communal walkway, garage, overhang, patio, enclosed patio, detached accessory structure or similar structure.

Multi-Family and High Density Residential projects that include communal spaces (i.e., clubhouse, maintenance facility, gym, etc.) will not be assessed impact fees on such areas as the impact is considered to be captured within the residential fees. Areas that contain employees and are accessible by the public will be charged impact fees according to use (i.e., leasing office would pay office fees).

Based on the estimated average size of planned new development within each land use category in the City of Tracy, the following average unit sizes are utilized in this study.

Single Family Residential…… 2,500 Square Feet Per Unit
Multi-Family Residential (Attached 2-4)…….. 1,500 Square Feet Per Unit
High Density Residential (Attached 4+)...……. 950 Square Feet Per Unit

The City will monitor the average size of new housing units in the City on an annual basis and if the average size of units is significantly less than anticipated, the fees will be updated as part of the annual update to reflect this change in order to ensure the fee program does not fall short.

As detailed in the next sections, the fee per square foot is calculated by dividing the fee per unit by the average size shown above for each residential unit type. Fees for Multi-Family Residential and High Density Residential result in a higher fee per square foot than Single Family Residential due to the higher density of people per square foot of space.

Section 2 WATER SYSTEM

COST SUMMARY AND CIP

The Tracy *Citywide Water System Master Plan Update* (WMP) identified the need for new backbone potable water facilities (including pipelines, storage facilities and pumping facilities) to serve buildout of the City's General Plan. The WMP identified future system improvements that are triggered by additional demands from new development (Chapter 8 in WMP), separate from the improvements identified as existing deficiencies (Chapter 7 in WMP). The Water System Fee costs were split between the three fee components: Water Distribution, Water Supply, and Water Treatment.

The WMP provided cost estimates for the facilities necessary to serve new development through buildout. The costs in the WMP were provided in 2020 dollars and are being escalated in the Nexus Study to 2024 dollars using the ENR CCI for San Francisco (November 2020 to February 2024). Based on conversations with West Yost, the escalated water improvement construction costs are still below the costs of recent bids and therefore were increased by an additional 15 percent. Due to the delay in the adoption of the Nexus Study, the ENR CCI change from 2024 to April of 2025 was analyzed and it was determined that there has not been a significant change in the index, therefore, the costs are not further being updated.

Water Distribution

The fee program funds the improvements necessary to support the City's projected future potable water demands based on evaluations of the existing and future potable water system's treatment, storage and pumping capacities and ability to meet recommended performance and operational criteria under maximum day demand plus fire flow and peak hour demand scenarios. The facilities in the fee program do not include required on-site infrastructure. The City has three main pressure zones, that are highly integrated with each other, therefore all new development, with the exception of Tracy Hills, pay the same fee. Tracy Hills contains 3 separate pressure zones that service Tracy Hills only and the infrastructure is funded separately by the development in that specific plan area only.

Table 2-1 shows the water distribution facilities that are funded through the Water Distribution Fee. These facilities are shown on **Figure A-1** and **Figure A-2** in **Appendix A.**

Water Supply

The City has a projected potable water supply production requirement of 33,500 acre-feet per year (af/yr) at Buildout of the City's General Plan. The City will need to develop future water supplies to meet these projected future demands. This will include expansion of its Aquifer Storage and

Recovery (ASR) Program (up to 1,000 af/yr) and implementation of a proposed Recycled Water Exchange Program (up to 7,500 af/yr) to meet its projected future potable water demands. Furthermore, 6,300 af/yr of recycled water will be needed to meet landscape irrigation demands at Buildout.

The City's participation in the Phase 2 Los Vaqueros Reservoir Expansion Project would increase the City's water supply reliability by providing storage of supplies for use in dry years. The estimated cost for 5,000 acre-feet of storage for the City is approximately $10 million plus an additional $1.5 million for implementation and will be shared by existing rate payers and new development. The City's participation in the B.F. Sisk Dam Raise & Reservoir Expansion Project would also increase the City's water supply reliability by providing an additional 5,000 acre-feet of storage. The estimated cost for this project is approximately $38 million and will be shared by existing rate payers and new development. Since both the Phase 2 Los Vaqueros Reservoir Expansion Project and the B.F. Sisk Dam Raise & Reservoir Expansion Project will provide water supply reliability to all of the City's water customers, costs are allocated proportionately to existing users and future users (using the ratio of the existing water demand to the future water demand). Per the demand split at Buildout, 33% would be allocated to existing rate payers, and 67% would be allocated to future development.

To ensure water supply demands of the City could be met, the City purchased Water Supply from other water sources. In 2004, the United States Bureau of Reclamation (USBR) approved the assignment of 5,000 af/yr of Ag-reliability Central Valley Project (CVP) contract entitlement to the City from the Banta-Carbona Irrigation District (BCID). Also in 2004, the USBR approved the assignment of an additional 2,500 af/yr of Ag-reliability CVP contract entitlement water to the City from the West Side Irrigation District (WSID) with the option to purchase an additional 2,500 af/yr of CVP contract entitlement from the WSID. The purchase of the additional 2,500 af/yr was approved in December 2013, increasing the City's assignment of WSID water to 5,000 af/yr. The costs of these water supply buy-in contracts are shared between existing and future users.

Table 2-2 and Table 2-3 show the water supply projects that are to be funded through the Water Supply Fee. **Figure A-1** and **Figure A-2** in **Appendix A** show the location of proposed water supply facilities. It should be noted that updates were made to the cost estimate for the master plan facilities to account for facilities that have been completed since the adoption of the plan and facilities that were shown as completed in the master plan but for which a developer has not yet entered into an approved agreement with the City for credits or reimbursements of the facilities. In addition, the City requested the addition of a hydrologic study which is required every five years due to new development's impact on the system.

Water Treatment - John Jones Water Treatment Plant (JJWTP) Expansion

A future 10 million gallons per day (mgd) expansion of the JJWTP (for a total treatment capacity of 40 mgd) is recommended to provide the City with additional water treatment capacity, as well as operational flexibility and reliability. The expansion would also include a new administration/ maintenance building to accommodate future staffing needs and maintenance activities. This new capacity is 100 percent allocated to new development.

New development is also responsible for funding a portion of the $45 million capacity increasing measures completed in 2008 when the JJWTP was expanded by 15 mgd. Of the 15 mgd, 9 mgd was available to future users, therefore future users fair share is $27 million.

Table 2-4 shows the water treatment projects that are to be funded through the Water Treatment Fee.

Table 2-1, Table 2-2, Table 2-3, and Table 2-4 also serve as the CIP List as required by AB 602. The tables identify each of the facilities that will be paid for by the Water Fee and the estimated construction timeframe, as identified in the WMP. The improvements are broken down between improvements anticipated to be needed by 2025 and the improvements needed between 2025 and buildout, based on the adopted master plan. The exact start date is difficult to determine due to the fact that revenue collection varies based on the timing of new development and the needed facilities depend on the location of new development within the City. The City will use the CIP facilities identified here to guide their five-year Capital Improvement Plan based upon city need and timing of securing adequate revenue.

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Table 2-1: Water Distribution Facilities Summary

Improvement Type	Improvement Description	Construction Timeframe	CIP ID	Quantity		Estimated Construction Cost ($2020)[1]	Estimated Construction Cost ($2025)[2]	CIP Cost ($2025)[3,4]
Pipeline Improvement	Replace existing 12-inch diameter pipeline crossing railroad track with 18-inch diameter pipe. Replace existing 12-inch diameter pipelines in Sixth Street, Tracy Boulevard, and Eleventh Street with 24-inch diameter pipe.	2025	NCIP-PI-1	1,389	L.F.	$627,574	$850,786	$1,149,000
Jack and Bore Improvement	18-inch diameter (24-inch casing)	2025	NCIP-PI-2	159	L.F.	$109,451	$148,380	$200,000
New Pipeline (Developed Area)	12-inch diameter	2025	NCIP-PD-12	2,013	L.F.	$523,453	$709,632	$958,000
New Pipeline (Developed Area)	16-inch diameter	2025	NCIP-PD-16	1,051	L.F.	$351,924	$477,095	$644,000
New Pipeline (Developed Area)	20-inch diameter	2025	NCIP-PD-20	609	L.F.	$243,594	$330,234	$446,000
New Pipeline (Developed Area)	24-inch diameter	2025	NCIP-PD-24	3,426	L.F.	$1,593,146	$2,159,788	$2,916,000
New Pipeline (Developed Area)[5]	Lammers Road Transmission Main Additional Costs	2025	N/A	1	L.S.	$740,915	$1,004,440	$1,356,000
New Pipeline (Undeveloped Area)	12-inch diameter	2025	NCIP-PU-12	18,666	L.F.	$4,199,794	$5,693,555	$7,686,000
New Pipeline (Undeveloped Area)	16-inch diameter	2025	NCIP-PU-16	9,270	L.F.	$2,642,003	$3,581,697	$4,835,000
New Pipeline (Undeveloped Area)[6]	20-inch diameter	2025	NCIP-PU-20	3,024	L.F.	$1,656,156	$2,245,209	$3,031,000
Jack and Bore	Boring and receiving Pits	2025	NCIP-JB-PIT	5	EACH	$200,000	$271,135	$366,000
Jack and Bore	16-inch diameter (24-inch casing)	2025	NCIP-JB-16	374	L.F.	$258,046	$349,826	$472,000
Jack and Bore	24-inch diameter (36-inch casing)	2025	NCIP-JB-24	677	L.F.	$673,911	$913,604	$1,233,000
Interconnection	PRV at Schulte Road & Bud Lyons Way	2025	NCIP-PRV-1	1	L.S.	$125,000	$169,459	$229,000
Interconnection	PRV at Schulte Road & Pavilion Pkwy	2025	NCIP-PRV-2	1	L.S.	$125,000	$169,459	$229,000
Land Acquisition[7]	Tank Sites	Buildout	BCIP-LA-T	1	SITE	$375,000	$375,000	$375,000
Storage Reservoir[8]	1.0 MG Clearwell No. 3 at JJWTP	Buildout	BCIP-T-CW3	1	L.S.	$3,008,250	$4,078,209	$5,506,000
Storage Reservoir[8]	1.0 MG Westside Tank	Buildout	BCIP-T-WS	1	L.S.	$3,008,250	$4,078,209	$5,506,000
Booster Pump Station[9]	2.16 mgd at Zone 3 Clearwell (JJWTP)	Buildout	BCIP-PS-Z3	1	L.S.	$1,554,755	$2,107,742	$2,845,000
Booster Pump Station[9]	6.48 mgd at Westside Zone 1 Tank	Buildout	BCIP-PS-WSZ1	1	L.S.	$2,263,735	$3,068,889	$4,143,000
Booster Pump Station[9]	3.46 mgd at Westside Zone 2 Tank	Buildout	BCIP-PS-WSZ2	1	L.S.	$1,767,450	$2,396,088	$3,235,000
New Pipeline (Developed Area)	8-inch diameter	Buildout	BCIP-PD-8	11	L.F.	$2,090	$2,833	$4,000
New Pipeline (Developed Area)	16-inch diameter	Buildout	BCIP-PD-16	11,349	L.F.	$3,801,881	$5,154,115	$6,958,000
New Pipeline (Developed Area)	20-inch diameter	Buildout	BCIP-PD-20	1,132	L.F.	$452,853	$613,921	$829,000
New Pipeline (Undeveloped Area)	12-inch diameter	Buildout	BCIP-PU-12	84,957	L.F.	$19,115,431	$25,914,311	$34,984,000
New Pipeline (Undeveloped Area)	16-inch diameter	Buildout	BCIP-PU-16	27,691	L.F.	$7,891,999	$10,698,985	$14,444,000
New Pipeline (Undeveloped Area)	20-inch diameter	Buildout	BCIP-PU-20	6,148	L.F.	$2,090,151	$2,833,565	$3,825,000
Jack and Bore	Boring and receiving Pits	Buildout	BCIP-JB-PIT	11	EACH	$440,000	$596,497	$805,000
Jack and Bore	12-inch diameter (21-inch casing)	Buildout	BCIP-JB-12	1,489	L.F.	$885,921	$1,201,021	$1,621,000
Jack and Bore	16-inch diameter (24-inch casing)	Buildout	BCIP-JB-16	1,257	L.F.	$867,182	$1,175,617	$1,587,000
Interconnection	Westside PRS (12-inch)	Buildout	BCIP-PRS-WS	1	L.S.	$250,000	$338,919	$458,000
Interconnection	Avenues PRV (12-inch)	Buildout	BCIP-PRV-AV	1	L.S.	$125,000	$169,459	$229,000
Interconnection[10]	Plan C PRVs (8-inch to 12-inch)	Buildout	BCIP-PRV-C	6	VALVES	$0	$0	$0

Table 2-1 Continued: Water Distribution Facilities Summary

SCADA	Pressure Regulating Station No. 1	Buildout	BCIP-S-1	1	L.S.	$125,000	$169,459	$229,000
SCADA	Pressure Regulating Station No. 2	Buildout	BCIP-S-2	1	L.S.	$125,000	$169,459	$229,000
SCADA	Pressure Regulating Station No. 3	Buildout	BCIP-S-3	1	L.S.	$125,000	$169,459	$229,000
SCADA	Pressure Regulating Station No. 4	Buildout	BCIP-S-4	1	L.S.	$125,000	$169,459	$229,000
SCADA	Pressure Regulating Station No. 5	Buildout	BCIP-S-5	1	L.S.	$125,000	$169,459	$229,000
SCADA	Pressure Regulating Station No. 6	Buildout	BCIP-S-6	1	L.S.	$125,000	$169,459	$229,000
Water Master Plan Updates[11]	Future updates to Water Master Plan	Buildout	BCIP-WMP	3	EACH	$1,000,000	$1,000,000	$1,000,000
Water Hydrologic Study[12]	Future Hydrologic Study	Buildout	n/a	1	EACH	$150,000	$150,000	$150,000
Improvements Shown as Built but Not Accepted[13]	n/a	n/a	n/a	n/a	n/a	$1,228,044	$1,228,044	$1,228,044
					Total	**$65,097,959**	**$87,272,483**	**$116,856,044**

Source: Tracy Citywide Water System Master Plan Update, Prepared by West Yost Associates (May 2023).

[1] Costs shown are from Water Master Plan and presented in 2020 dollars.

[2] Estimated construction costs have been escalated to current dollars using the San Francisco ENR CCI. Costs were escalated from 2020 to 2024 using ENR plus an additional 15% (based on West Yost's recommendation to account for materials cost increases exceeding the ENR indices). There has not been a significant change in the index from 2024 to 2025, therefore, the costs have not been further updated.

[3] Costs include mark-ups equal to 35 percent (General Contingency: 15 percent; Design and Planning: 10 percent; and Construction Management: 10 percent).

[4] Total rounded to nearest $1,000.

[5] Additional costs for the Lammers Road transmission main from north of Schulte Road to Ellis Town Drive based on the West Yost Engineer's opinion of probable cost dated 09/06/23 due to necessary corrosion protection, above average construction costs, specific site conditions, and two complex utility crossings.

[6] Ellis completed the 20-inch diameter pipe that goes through the Ellis development to Lammers Road, as such the 4,951 LF has been removed from the cost.

[7] Assumes each tank site is 1.5 acres. Cost includes Westside Tank site. Nexus Study land acquisition assumption uses $250,000 per acre.

[8] Recommended volume based on active volume. Cost assumes the construction of a partially buried pre-stressed concrete tank.

[9] Recommended capacity based on firm pumping capacity.

[10] The Plan C PRV is needed to resolve an existing pressure issue and the issue is not caused by future development and therefore the cost is excluded.

[11] Three updates assumed at $500,000 per update. Costs split two-thirds to the potable water system and one-third to the recycled water system.

[12] Added per City of Tracy to evaluate new development's impact on the system.

[13] Includes multiple improvement that have been constructed and are shown as built in the master plan but which have not yet been accepted by the City and therefore are not currently included in an approved reimbursement/credit agreement.

Table 2-2: Water Supply Facilities Summary

Improvement Type	Improvement Description	Construction Timeframe	CIP ID	Quantity	Estimated Construction Cost ($2020)[1]	Estimated Construction Cost ($2025)[2]	CIP Cost ($2025)[3,4]	Attributable to New Development	Cost Attributable to Fee Program
Groundwater Wells	Equip Lincoln Well, Park & Ride Well, Ball Park Well and Lewis Manor Well with ammonia addition	2025	NCIP-GW-1	1 L.S.	$1,500,000	$2,033,512	$2,745,000	100%	$2,745,000
ASR Expansion Study	Evaluate future ASR well sites and operation scenarios	2025	NCIP-ASR	1 L.S.	$350,000	$350,000	$350,000	100%	$350,000
Land Acquisition[5]	ASR Well Sites	Buildout	BCIP-LA-W	4 SITES	$190,000	$250,000	$250,000	100%	$250,000
Groundwater Well	2,500 gpm ASR Well in Westside	Buildout	BCIP-W-WS	1 L.S.	$3,900,000	$5,287,132	$7,138,000	100%	$7,138,000
Groundwater Well	2,500 gpm ASR Well in Wainwright	Buildout	BCIP-W-WA	1 L.S.	$3,900,000	$5,287,132	$7,138,000	100%	$7,138,000
Groundwater Well	2,500 gpm ASR Well in Larsen Park	Buildout	BCIP-W-LP	1 L.S.	$3,900,000	$5,287,132	$7,138,000	100%	$7,138,000
Groundwater Well	1,000 gpm ASR Well in Ellis	Buildout	BCIP-W-EL	1 L.S.	$2,500,000	$3,389,187	$4,575,000	100%	$4,575,000
SCADA	Well No. 8	Buildout	BCIP-S-W8	1 L.S.	$125,000	$169,459	$229,000	100%	$229,000
Los Vaqueros Reservoir Participation (2021)[6,7]	5,000 acre-feet of storage for dry year use	Buildout	BCIP-LVE	1 L.S.	$11,500,000	$11,500,000	$11,500,000	67%	$7,705,000
B.F. Sisk Dam Raise & Reservoir Expansion Project[7]	5,000 acre-feet of storage for dry year use	Buildout	BCIP-SISK	1 L.S.	$38,000,000	$38,000,000	$38,000,000	67%	$25,460,000
				Total	**$65,865,000**	**$71,553,556**	**$79,063,000**		**$62,728,000**

Source: Tracy Citywide Water System Master Plan Update, Prepared by West Yost Associates (May 2023).

[1] Costs shown are from Water Master Plan and presented in 2020 dollars.

[2] Estimated construction costs have been escalated to current dollars using the San Francisco ENR CCI. Costs were escalated from 2020 to 2024 using ENR plus an additional 15% (based on West Yost's recommendation to account for materials cost increases exceeding the ENR indices). There has not been a significant change in the index from 2024 to 2025, therefore, the costs have not been further updated.

[3] Costs include mark-ups equal to 35 percent (General Contingency: 15 percent; Design and Planning: 10 percent; and Construction Management: 10 percent).

[4] Total rounded to nearest $1,000.

[5] Assume each ASR well site is 0.25 acres. Cost includes Westside, Wainwright, Larsen Park, and Ellis ASR Well sites. Nexus Study land acquisition assumption uses $250,000 per acre.

[6] From the City of Tracy Los Vaqueros Reservoir Participation Agenda Item 1. B (October 5, 2021). The estimated maximum cost of $10 million was increased by 15 percent per the City to cover associated costs.

[7] Per West Yost Associates, participation in these projects should be shared between existing and future users based on existing potential water shortage versus future water shortage.

Table 2-3: Water Supply Buy-In Facilities Summary

Supply Source	Assignment (af/yr)	Normal Year Availability (af/yr) (Reliability,%)		Dry Year Availability (af/yr) (Reliability,%)		Cost (Principal and Estimated Interest Payments)
WSID Assignment (2004)[1]	2,500	1,250	50%	375	15%	$3,062,500
WSID Assignment (2014)[2]	2,500	1,250	50%	375	15%	$3,625,000
BCID Assignment (2004)[3]	5,000	2,500	50%	750	15%	$6,670,000
Semitropic[4]	-	-	-	3,500	100%	$5,506,691
Total	**10,000**	**5,000**		**5,000**		**$18,864,191**
Existing Users Share[5]						($6,036,541)
Fee Program Funding						**$12,827,650**

Source: Tracy Citywide Water System Master Plan – Tier 1 Development Impact Fee Analysis for the Backbone Buildout Potable and Recycled Water Systems, prepared by West Yost (August 28, 2013), City of Tracy Los Vaqueros Reservoir Participation Agenda Item 1. B (October 5, 2021), and Tracy Citywide Water System Master Plan Update, Prepared by West Yost Associates (May 2023).

[1] Cost was $1,000/af ($2,500,000); City paid in several installments and paid 5% interest on unpaid balance ($125,000 in interest payments for 10 years).

[2] Cost is $1,000/af ($2,500,000) with 5% interest on unpaid balance.

[3] Cost was $1,000/af ($5,000,000); City obtained a 5-year loan from BCID at 5% interest; at the end of five years, the loan was extended at an interest rate of 3%; after two more years, a principle payment of $2,000,000 was made; and $3,000,000 was paid in 2014.

[4] Purchase price was $5,506,691.

[5] Per City of Tracy Public Works Department. Represents the amount of WSID Assignments, BCID Assignment, and Semitropic Source allocated to existing users prior to the formation of the fee study per the 2013 West Yost Fee Technical Memo.

Table 2-4: Water Treatment Facilities Summary

Improvement Type	Estimated Construction Cost ($2020)[1]	Estimated Construction Cost ($2025)[2]	CIP Cost ($2025)[3,4]
Expand Water Treatment Plant (JJWTP) from 30 mgd to 40 mgd and new administration/maintenance building [4]	$52,000,000	$70,495,097	$95,168,000
Water Treatment Plant Expansion Cost (JJWTP) Buy-In [5]	-	-	$27,000,000
Total			**$122,168,000**

Source: Tracy Citywide Water System Master Plan Update, Prepared by West Yost Associates (May 2023).

[1] Costs shown are from Water Master Plan and presented in 2020 dollars.

[2] Estimated construction costs have been escalated to current dollars using the San Francisco ENR CCI. Costs were escalated from 2020 to 2024 using ENR plus an additional 15% (based on West Yost's recommendation to account for materials cost increases exceeding the ENR indices). There has not been a significant change in the index from 2024 to 2025, therefore, the costs have not been further updated.

[3] Costs include mark-ups equal to 35 percent (General Contingency: 15 percent; Design and Planning: 10 percent; and Construction Management: 10 percent).

[4] A future additional 10 mgd expansion of the JJWTP (for a total treatment capacity of 40 mgd) is recommended to provide the City with additional water treatment capacity, as well as operational flexibility and reliability.

[5] In 2008 the JJWTP was expanded by 15 mgd to provide additional treatment capacity for future development. While some of this capacity is now utilized by the City's existing water users, it is estimated that 9 mgd of the expansion capacity is still available for future developments to use and represents the buy-in cost for the portion of the expanded capacity to be utilized by new developments (estimated to be 9 mgd). The cost of the 2008 expansion was $45 million, or $3 million per mgd of capacity. Therefore, the remaining JJWTP expansion cost to be allocated amongst future developments is $27 million for the 9mgd.

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FEE METHODOLOGY

The Water Fee uses the Planned Facility methodology for calculating the fee. As stated in the "Impact Fee Nexus Study Template" prepared for the California Department of Housing and Community Development by Terner Center for Housing Innovation at UC Berkeley, the Planned Facility Method "Estimates the costs for future facilities needed to serve new development based on a long range expenditure plan for these future facility costs."

In order to distribute the share of project costs to each land use type, the total water demand of new development must be calculated. The water demand factors were calculated using Table 4-15 "Adopted Unit Water Demand Factors" from the Water Master Plan, page 4-28. The water demand factor for each land use is then converted into an equivalent dwelling unit (EDU) factor, which is the estimated average water demand for each land use as compared to the average water demand of a single-family unit. This EDU factor is then multiplied by the residential units or the non-residential acreage to determine the total EDUs.

EDU calculations are calculated separately for each fee type as not all new development pays all three components as described in the Service Population section above.

Table 2-5 shows the EDU calculation for the Water Distribution Fee. **Table 2-6** shows the EDU calculation for the Water Supply Fee. **Table 2-7** shows the EDU calculation for the Water Treatment Fee.

Table 2-5: Water Distribution Fee EDU Calculation

Land Use	Water Demand Factor	EDU Factor	Units/ Acres[2,3]	Total EDUs
Residential [1]	*gpd/du*		*Units*	
Single Family Residential	365	1.00	9,942	9,942
Multi-Family Residential (Attached 2-4)	300	0.82	875	718
High Density Residential (Attached 4+)	204	0.56	3,746	2,098
Subtotal Residential			**14,563**	**12,758**
Non-Residential [1]	*gpd/ac*		*Acres*	
Office	1,438	3.94	191	754
Commercial	1,635	4.48	895	4,009
Industrial	1,309	3.59	2,944	10,570
Subtotal Non-Residential			**4,030**	**15,333**
Total				**28,091**

Source: Tracy Citywide Water System Master Plan Update, Prepared by West Yost Associates (May 2023).

[1] Includes exterior water use.

[2] Tracy Hills is excluded from this fee as they are not part of the City Distribution System and will be responsible for their own facilities separately

[3] Ellis units are not included as they will receive water credits.

Table 2-6: Water Supply Fee EDU Calculation

Land Use	Water Demand Factor	EDU Factor	Units/ Acres[2,3,4]	Total EDUs
Residential [1]	*gpd/du*		*Units*	
Single Family Residential	365	1.00	11,533	11,533
Multi-Family Residential (Attached 2-4)	300	0.82	875	718
High Density Residential (Attached 4+)	204	0.56	3,746	2,098
Subtotal Residential			**16,154**	**14,349**
Non-Residential [1]	*gpd/ac*		*Acres*	
Office	1,438	3.94	191	754
Commercial	1,635	4.48	934	4,186
Industrial	1,309	3.59	3,052	10,956
Subtotal Non-Residential			**4,178**	**15,896**
Total				**30,245**

Source: Tracy Citywide Water System Master Plan Update, Prepared by West Yost Associates (May 2023).

[1] Includes exterior water use.

[2] Removes portion of Tracy Hills that is served by water from the Byron Bethany Irrigation District ("BBID") as they will not be subject to Water Supply Fees.

[3] Ellis units are not included as they will receive water credits.

[4] Removes the Cordes Ranch land uses that will not pay the Water Supply Fee based on the first purchase of the Lathrop Water Supply and Treatment.

Table 2-7: Water Treatment Fee EDU Calculation

Land Use	Water Demand Factor	EDU Factor	Units/ Acres [2, 3]	Total EDUs
Residential [1]	*gpd/du*		*Units*	
Single Family Residential	365	1.00	15,539	15,539
Multi-Family Residential (Attached 2-4)	300	0.82	875	718
High Density Residential (Attached 4+)	204	0.56	3,871	2,168
Subtotal Residential			**20,285**	**18,425**
Non-Residential [1]	*gpd/ac*		*Acres*	
Office	1,438	3.94	253	995
Commercial	1,635	4.48	936	4,191
Industrial	1,309	3.59	3,087	11,081
Subtotal Non-Residential			**4,275**	**16,267**
Total				**34,692**

Source: Tracy Citywide Water System Master Plan Update, Prepared by West Yost Associates (May 2023).

[1] Modified from Master Plan to include exterior water use.

[2] Ellis units are not included as they will receive water credits.

[3] Removes the Cordes Ranch land uses that will not pay the Water Treatment Fee based on the first purchase of the Lathrop Water Supply and Treatment.

The cost per EDU of each fee component is calculated by taking the Remaining Cost to Fund divided by the total EDUs within each fee component. The Remaining Cost to Fund is the cost attributable to the fee program, from **Table 2-1, Table 2-2, Table 2-3, and Table 2-4**, less expenditures to date, less the existing fund balance, plus any outstanding fee credits, and less the Cordes Ranch deferred fees. **Table 2-8** calculates the cost per EDU for each fee component.

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Table 2-8: Water Cost per EDU Calculation

Fee	Cost Attributable to Fee Program	Expenditures to Date[1]	Fund Balance[2]	Outstanding Credits/ Reimb.[3]	Cordes Ranch Deferred Payment[4]	Remaining Cost to Fund	Total EDUs	Cost/ EDU[5]
Distribution[6]	$116,856,044	($253,063)	($10,199,927)	$13,102,067	($896,430)	$118,608,691	28,091	$4,222
Supply[7]	$75,555,650	($333,751)	($5,151,376)	$0	$0	$70,070,523	30,245	$2,317
Treatment[8]	$122,168,000	$0	($9,365,928)	$0	$0	$112,802,072	34,692	$3,252
Total	**$314,579,694**	**($586,814)**	**($24,717,231)**	**$13,102,067**	**($896,430)**	**$301,481,286**		**$9,791**

1 Some costs included in the Master Plan were already spent and need to be removed from the remaining cost. This includes work on the water master plan, water lines in lammers, Los Vaqueros Reservoir, BF Sisk Dam, and Airport water line.

2 Fund balance provided by the City of Tracy (as of 05/20/2025). The fund balance was split proportional to the current fee split.

3 Remaining credits due to developers as of 5/20/2025.

4 Cordes Ranch Deferred fees per DA Section 6.3C (September 2013). Does not include Project Management.

5 Cost per EDU rounded to the nearest dollar.

6 Tracy Hills Phases 1A, 1B, 2-4, and Hillview are not part of the City Distribution System and will not pay the Water Distribution Fee.

7 Tracy Hills areas that receive BBID water are excluded from the calculation and will not pay Water Supply Fee.

8 Treatment capacity is based on buildout EDUs.

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FEE SUMMARY

The Water Fee is based on new development's fair share of the facilities identified in the Water Master Plan and buy-in to existing water supply and treatment facilities that were designed to accommodate future development.

The Water Fee is converted into a fee per square foot for residential land uses by multiplying the cost per EDU times the EDU factor and then dividing by the average unit size of each land use in the City. The Water Fee is converted into a fee per 1,000 building SF for non-residential land uses by multiplying the cost per EDU times the EDU per acre factor and then dividing by the floor area ratio conversion assumptions in this Nexus Study. **Table 2-9** summarizes the Water Fee for the three components.

It should be noted that there are additional specific plan Water Fees that apply to NEI Future Phases per the "City of Tracy's Northeast Industrial Area Future Phases Water and Wastewater Development Impact Fee Technical Memorandum" dated September 4, 2019. In addition to the Master Plan Fees, the developers in NEI Future Phases are required to fund their fair share of the localized water distribution infrastructure.

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Table 2-9: Total Water Fee

Land Use	EDU Factor	Distribution Fee	Supply Fee	Treatment Fee	Total Fee	Average Size/ FAR Conversion [1]	Distribution Fee	Supply Fee	Treatment Fee	Total Fee
Residential [3]		*(per Unit)*					*(per SF)* [2]			
Single Family Residential	1.00	$4,222	$2,317	$3,252	**$9,791**	2,500	$1.69	$0.93	$1.30	**$3.92**
Multi-Family Residential (Attached 2-4)	0.82	$3,462	$1,900	$2,667	**$8,029**	1,500	$2.31	$1.27	$1.78	**$5.36**
High Density Residential (Attached 4+)	0.56	$2,364	$1,298	$1,821	**$5,483**	950	$2.49	$1.37	$1.92	**$5.78**
Non-Residential		*(per Acre)*					*(per 1,000 Bldg SF)* [2]			
Office	3.94	$16,635	$9,129	$12,813	**$38,577**	19.60	$849	$466	$654	**$1,969**
Commercial	4.48	$18,915	$10,380	$14,569	**$43,864**	13.07	$1,447	$794	$1,115	**$3,356**
Industrial	3.59	$15,157	$8,318	$11,675	**$35,150**	21.78	$696	$382	$536	**$1,614**

[1] Average size based on the average unit size of planned new development in the City of Tracy. Floor Area Ratios used to convert EDU per Acre to per KSF: Office (0.45), Commercial (0.3), and Industrial (0.5).

[2] Residential fee rounded to nearest hundredth. Non-Residential fee rounded to the nearest dollar.

[3] The fee for residential will be applied to the livable square footage.

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FEE COMPARISON

Table 2-10 compares the proposed water fees to the existing water fees (as of July 1, 2024). The existing residential per unit fees were converted to fees per square foot using the same average unit sizes as the proposed fees. The existing non-residential fees were converted from a per acre fee to a per 1,000 building SF fee using the FAR assumptions in this Nexus Study. The reason the water distribution and water treatment components of the Water Fee are decreasing while the water supply portion increases (with the exception of the single-family land use) as compared to existing fees are described in the Water Master Plan and below:

1. Reduction in Water Demands: Due to changes in water use trends and habits resulting from improved water use efficiency, water demand factors are lower for most land use categories.
2. Reduction in Maximum Day and Peak Hour Demand Factors: Due to changes in water use trends and habits from improved water use efficiency, maximum day and peak hour demand factors are lower.
3. Proposed Recycled Water Exchange Agreement: The City is evaluating the potential for indirect reuse of its available recycled water through an exchange agreement with the United States Bureau of Reclamation (USBR) whereby a portion of the City's tertiary-treated wastewater (recycled water) would be discharged to the Delta Mendota Canal (DMC) and a like amount of water (i.e., a one-to-one exchange) could then be diverted from the DMC by the City for treatment at the City's John Jones Water Treatment Plant (JJWTP) for potable use. Such supplies would be 100 percent reliable and would not be subject to drought cutbacks. With the potential reduction in reliability of the City's surface water supplies from the CVP and SSJID, this proposed recycled water exchange agreement will be a critical component of the City's future water supply portfolio.
4. Reduction in Emergency Storage Requirement: The 2012 Water Supply MP used an emergency storage volume requirement of two (2) times the average day demand. After reviewing emergency storage criteria for other similar water systems within the region, and taking into account the City's redundant sources of supply (CVP, SSJID, and groundwater), it was recommended that the City reduce the minimum quantity of emergency storage volume required to 1.5 times the average day demand for this Citywide Water System Master Plan Update
5. Completion of New Water System Facilities: Several new water system facilities have been recently completed which provide for added water system capabilities. These include the Cordes Ranch water storage tank and pump station, the Tracy Hills water storage tank and pump station, and new pump stations at the City's JJWTP to serve the City's Pressure Zone 3 and initial phases of the Tracy Hills development.

6. Shift in Supply Facilities: The wells and associated facilities were moved from the water distribution fee to the water supply fees, since wells are used to meet water supply.
7. Reduction in Water Treatment Plant Size: There was a reduction in the estimated size of the water treatment plant expansion due to the planned increase in groundwater pumping, thus reducing the estimated size and cost of expansion.

Table 2-10: Water Fee Comparison

Land Use	Water Distribution			Water Supply			Water Treatment			Total Water Fee		
	Proposed Fee	Existing Fee [1]	Percent Change	Proposed Fee	Existing Fee [1]	Percent Change	Proposed Fee	Existing Fee [1]	Percent Change	Proposed Fee	Existing Fee [1]	Percent Change
Residential (per SF)												
Single Family Residential	$1.69	$2.30	-27%	$0.93	$0.99	-6%	$1.30	$1.79	-27%	$3.92	$5.08	-23%
Multi-Family Residential (Attached 2-4)	$2.31	$2.76	-16%	$1.27	$1.18	7%	$1.78	$2.15	-17%	$5.36	$6.10	-12%
High Density Residential (Attached 4+)	$2.49	$3.09	-19%	$1.37	$1.32	4%	$1.92	$2.40	-20%	$5.78	$6.82	-15%
Non-Residential (per 1,000 Bldg SF)												
Office	$849.00	$916.47	-7%	$466.00	$392.21	19%	$654.00	$712.91	-8%	$1,969.00	$2,021.59	-3%
Commercial	$1,447.00	$1,833.01	-21%	$794.00	$784.61	1%	$1,115.00	$1,425.76	-22%	$3,356.00	$4,043.39	-17%
Industrial	$696.00	$824.82	-16%	$382.00	$353.00	8%	$536.00	$641.62	-16%	$1,614.00	$1,819.43	-11%

[1] Program Management (5%) removed from Construction Cost of Existing Fee for an accurate comparison.

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EXISTING AND PROPOSED LEVEL OF SERVICE

AB 602 states, "When applicable, the nexus study shall identify the existing level of service for each public facility, identify the proposed new level of service and include an explanation of why the new level of service is appropriate."

A standard of service refers to adopted policies in law or practice that are either in place for a particular service or are intended to be. Water service is unique in that each new user creates a direct, immediate impact on water distribution, supply, and treatment. There must be sufficient capacity in the water systems to provide a consistent level of service for all customers at the appropriate service standard. When the existing standards of service are not being met, a deficiency exists.

Based on available information on the City's existing water system and existing water demands, the Water Master Plan identified hydraulic pipeline improvements that do not meet the standard of service needed to serve the existing population. The existing deficiency improvements can be found in Chapter 7.5 of the WMP. These deficiencies are not triggered by future development and were not included in the list of identified CIP facilities used to calculate the Water Fee in this Nexus Study. This ensures that new development is only funding their fair share of the facilities based on their impact on the system.

The planned capital projects in **Table 2-1**, **Table 2-2**, **Table 2-3**, and **Table 2-4** were identified in the WMP to either maintain existing levels of service as growth occurs or to not perpetuate deficiencies.

NEXUS REQUIREMENT SUMMARY

AB 1600 requires that public agencies satisfy five requirements when establishing, increasing, or imposing a fee as a condition of approval of a development project. The required findings are as follows.

Requirement 1: Identify the purpose of the fee.

The purpose of the Water Supply, Water Distribution and Water Treatment Fees (Water Fees) are to fund the facilities in each category that are necessary to provide water to future development in the Master Plan fee program area. To accommodate this increased demand, new facilities must be built and/or existing facilities expanded.

Requirement 2: Identify the use of the fee.

The Water Fees will be used to fund the water projects shown in **Table 2-1**, **Table 2-2**, **Table 2-3**, and **Table 2-4**. These water projects were identified in the *Tracy Citywide Water System Master Plan Update*, prepared by West Yost Associates (May 2023), as the facilities required to mitigate

the impact of new development in the Master Plan fee program area of the City to ensure that the new development would have adequate water supply and pressure.

Requirement 3: Determine how there is a reasonable relationship between the fee's use and the type of development project on which the fee is imposed.

The Water Fees will be used to fund the new water facilities and improvements that are necessary to serve the increase water demands of new development in the Master Plan fee program area of the City to buildout. The fee for each development project is calculated based on the estimated water use of each land use type identified in the Water Master Plan. This correlation ensures that the fee is equal to the water needs generated by that specific land use. The EDU calculations based on the water demand factor for each land use are shown in **Table 2-5**, **Table 2-6,** and **Table 2-7.** The fee calculation is shown in **Table 2-8** and **Table 2-9**.

Requirement 4: Determine how there is a reasonable relationship between the need for the public facility and the type of development project on which the fee is imposed.

New development requires the addition of new or upsized water lines to serve the increased residents and businesses within the City and to ensure that the required water pressure can be met. In addition, new water supply must be secured to meet the water needs of the new development and this water must be treated. Each new residential and non-residential development pays an impact fee based on the amount of water it is expected to use. This calculation is shown in **Table 2-8** and **Table 2-9.**

Requirement 5: Determine how there is a reasonable relationship between the amount of the fee and the cost of the public facility or portion of the public facility attributable to the development on which the fee is imposed.

The water improvements required to serve new development are shown in **Table 2-1**, **Table 2-2**, **Table 2-3**, and **Table 2-4**. Existing deficiencies in the water system improvements were not included in the CIP list, ensuring that Water Fees collected from new development are not funding existing deficiencies. Service populations were identified for each fee category and EDUs were calculated based on the estimated daily demand for the various land uses in **Table 2-5**, **Table 2-6,** and **Table 2-7**. To ensure that each land use only pays their fair share of the water improvements based on their water usage, prior expenditures, the existing fund balance, deferred fees and credits are subtracted out from the total costs of the water facilities attributable to new development as identified in the Water Master Plan, and shown in **Table 2-8**, to calculate costs per EDU for each fee component. The water fee calculation to spread the appropriate costs over the various land uses is shown in **Table 2-9**. The fee methodology ensures that each land use only pays for their fair share of the water improvements based on the amount of water required by that land use.

Section 3 RECYCLED WATER

COST SUMMARY

The Tracy *Citywide Water System Master Plan Update* (WMP) identified the need for new backbone recycled water facilities (including pipelines, storage facilities and pumping facilities) to serve buildout of the City's General Plan. The recycled water system will distribute treated wastewater to meet irrigation and other non-potable water demands in the TIMP program area to offset some existing potable water use.

The City's Water Master Plan also outlines the City's goal to implement a Recycled Water Exchange Program to meet future potable water demands. This program would allow for indirect use of the City's recycled water through an exchange agreement with the USBR whereby a portion of the City's tertiary-treated wastewater (recycled water) would be discharged to the DMC and a like amount of water (i.e., a one-to-one exchange) could then be diverted from the DMC by the City for treatment at the City's JJWTP for potable use. This exchange agreement is an essential part of the City's projected future water supply portfolio.

Due to the nature of the improvements that are being implemented which frees up water supply for future development, there are no recycled water existing deficiencies and as such all listed recycled water facility projects identified in the WMP are attributable to new development.

The WMP provided cost estimates for the facilities necessary to serve new development through buildout. The costs in the WMP were provided in 2020 dollars and are being escalated in the Nexus Study to 2024 dollars using the ENR CCI for San Francisco (November 2020 to February 2024). Based on conversations with West Yost, the escalated recycled water improvement construction costs are still below recent bids and therefore were increased by an additional 15 percent. Due to the delay in the adoption of the Nexus Study, the ENR CCI change from 2024 to April of 2025 was analyzed and it was determined that there has not been a significant change in the index, therefore, the costs are not further being updated.

Table 3-1 shows the recycled water projects that are to be funded through the Recycled Water Fee. These facilities are also shown on **Figure B-1** and **Figure B-2** in **Appendix B**. **Table 3-1** also serves as the Recycled Water Fee CIP List as required by AB 602. The table identifies each of the facilities that will be paid for by the Recycled Water Fee and identifies the estimated construction timeframe, as identified in the WMP. The improvements are broken down between improvements anticipated to be needed by 2025 and the improvements needed between 2025 and buildout based on the adopted master plan. The exact start date is difficult to determine due to the fact that revenue collection varies based on the timing of new development and the needed facilities depend on the location of new development within the City. The City will use the CIP facilities identified here to

guide their five-year Capital Improvement Plan based upon city need and timing of securing adequate revenue.

Table 3-1: Recycled Water Fee Distribution Facilities Summary

Improvement Type	Improvement Description	Timeframe	CIP ID	Quantity		Existing Quantity	Remaining Quantity	Unit Cost	Estimated Construction Cost (2020)[1]	Estimated Construction Cost (2025)[2]	CIP Cost ($2025)[3,4]
Booster Pump Station	2.45 mgd for Zone C	2025	NCIP-PS-C	1	L.S.	0	1	$1,441,820	$1,441,820	$1,954,639	$2,639,000
New Pipeline (Developed Area)	8-inch diameter	2025	NCIP-PD-8	4,962	lf	0	4,962	$175	$868,372	$1,177,230	$1,589,000
New Pipeline (Developed Area)	12-inch diameter	2025	NCIP-PD-12	3,055	lf	0	3,055	$255	$778,900	$1,055,935	$1,426,000
New Pipeline (Developed Area)	24-inch diameter	2025	NCIP-PD-24	131	lf	0	131	$465	$60,939	$82,613	$112,000
New Pipeline (Developed Area)	30-inch diameter	2025	NCIP-PD-30	3,218	lf	0	3,218	$565	$1,818,131	$2,464,795	$3,327,000
New DMC Pipeline (Developed Area)[5]	30-inch diameter	2025	NCIP-PD-DMC-30	23,683	lf	9,347	14,336	$565	$8,099,784	$10,980,674	$14,824,000
Jack and Bore	Boring and Receiving Pits	2025	NCIP-JB-PIT	2	each	0	2	$40,000	$80,000	$108,454	$146,000
Jack and Bore	8-inch diameter (16-inch casing)	2025	NCIP-JB-8	154	lf	0	154	$519	$79,907	$108,328	$146,000
Jack and Bore	30-inch diameter (42-inch casing)	2025	NCIP-JB-30	434	lf	0	434	$1,115	$483,956	$656,087	$886,000
Jack and Bore (DMC Pipeline)	Boring and Receiving Pits	2025	NCIP-JB-DMC-PIT	1	each	0	1	$40,000	$40,000	$54,227	$73,000
Jack and Bore (DMC Pipeline)	30-inch diameter (42-inch casing)	2025	NCIP-JB-DMC-30	178	lf	0	178	$1,115	$198,418	$268,990	$363,000
Land Acquisition[6]	Tank Sites	Buildout	BCIP-LA-T	1	sites	0	1	$375,000	$375,000	$375,000	$375,000
Storage Reservoir[7]	5.7 MG Zone A Tank	Buildout	BCIP-T-A	1	L.S.	0	1	$5,809,500	$5,809,500	$7,875,794	$10,632,000
Storage Reservoir[7]	2.3 MG WWTP Diurnal Storage Tank	Buildout	BCIP-T-DS	1	L.S.	0	1	$4,262,640	$4,262,640	$5,778,754	$7,801,000
Booster Pump Station	5.00 mgd Zone A Expansion	Buildout	BCIP-PS-A	1	L.S.	0	1	$1,818,715	$1,818,715	$2,465,586	$3,329,000
Booster Pump Station	6.34 mgd for Zone F	Buildout	BCIP-PS-F	1	L.S.	0	1	$2,016,095	$2,016,095	$2,733,169	$3,690,000
Booster Pump Station	8.32 mgd for Zone B	Buildout	BCIP-PS-B	1	L.S.	0	1	$2,309,610	$2,309,610	$3,131,080	$4,227,000
Booster Pump Station	3.89 mgd for Zone D	Buildout	BCIP-PS-D	1	L.S.	0	1	$1,654,515	$1,654,515	$2,242,985	$3,028,000
Booster Pump Station	2.88 mgd for Zone E	Buildout	BCIP-PS-E	1	L.S.	0	1	$1,505,630	$1,505,630	$2,041,145	$2,756,000
New Pipeline (Developed Area)	16-inch diameter	Buildout	BCIP-PD-16	2,499	lf	0	2,499	$335	$837,072	$1,134,798	$1,532,000
New Pipeline (Developed Area)	24-inch diameter	Buildout	BCIP-PD-24	21,852	lf	0	21,852	$465	$10,161,175	$13,775,250	$18,597,000
New Pipeline (Undeveloped Area)[8]	12-inch diameter	Buildout	BCIP-PU-12	19,557	lf	18,144	1,413	$220	$310,799	$421,343	$569,000
New Pipeline (Undeveloped Area)	16-inch diameter	Buildout	BCIP-PU-16	5,343	lf	0	5,343	$285	$1,522,836	$2,064,471	$2,787,000
New Pipeline (Undeveloped Area)	18-inch diameter	Buildout	BCIP-PU-18	9,202	lf	9,062	140	$315	$44,004	$59,655	$81,000
New Pipeline (Undeveloped Area)	24-inch diameter	Buildout	BCIP-PU-24	7,219	lf	0	7,219	$395	$2,851,449	$3,865,638	$5,219,000
New Pipeline (Undeveloped Area)	30-inch diameter	Buildout	BCIP-PU-30	5,882	lf	0	5,882	$480	$2,823,234	$3,827,388	$5,167,000
Jack and Bore	Boring and Receiving Pits	Buildout	BCIP-JB-PIT	5	each	0	5	$40,000	$200,000	$271,135	$366,000
Jack and Bore	24-inch diameter (36-inch casing)	Buildout	BCIP-JB-24	1,234	lf	0	1,234	$995	$1,227,805	$1,664,504	$2,247,000
Jack and Bore	30-inch diameter (42-inch casing)	Buildout	BCIP-JB-30	359	lf	0	359	$1,115	$400,168	$542,498	$732,000
Water Master Plan Updates[9]	Future updates to Water Master Plan	Buildout	BCIP-WMP	3	each	0	3	n/a	$500,000	$500,000	$500,000
Additional Studies, Legal Costs and Staff and Consultant Time[10]	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	$1,000,000	$1,000,000	$1,000,000
Improvements Shown as Built but Not Accepted[11]	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	$538,605	$538,605	$538,605
								Total	**$56,119,079**	**$75,220,770**	**$100,704,605**

Source: Tracy Citywide Water System Master Plan Update, prepared by West Yost Associates (May 2023, Revised 2025).

[1] Costs shown are from the Water Master Plan and are presented in 2020 dollars.

[2] Estimated construction costs have been escalated to current dollars using the San Francisco ENR CCI. Costs were escalated from 2020 to 2024 using ENR plus an additional 15% (based on West Yost's recommendation to account for materials cost increases exceeding the ENR indices). There has not been a significant change in the index from 2024 to 2025, therefore, the costs have not been further updated.

[3] Costs include mark-ups equal to 35 percent (General Contingency: 15 percent; Design and Planning: 10 percent; and Construction Management: 10 percent).

[4] Total rounded to nearest $1,000.

[5] The 30-inch recycled water line in Valpico from Lammers to Corral Hollow and Corral Hollow to Tracy Lakes, has been completed, as such the 9,347 LF has been removed.

[6] Assumes each tank site is 1.5 acres. Cost includes Westside Tank Site. Nexus Study land acquisition assumption uses $250,000 per acre.

[7] Recommended volume based on active volume. Cost assumes the Zone A tank will be an aboveground welded steel tank, and the WWTP will be a partially buried pre-stressed concrete tank.

[8] Cordes Ranch constructed a portion of this project and received fee credits.

[9] Three updates assumed at $500,000 per update. Costs split two-thirds to the potable water system and one-third to the recycled water system.

[10] Includes the costs to account for additional studies, legal costs and staff and consultant time associated with the recycled water exchange.

[11] Includes multiple improvement that have been constructed and are shown as built in the master plan but which have not yet been accepted by the City and therefore are not currently included in an approved reimbursement/credit agreement.

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FEE METHODOLOGY

The Recycled Water Fee uses the Planned Facility Method to calculate the fee. As stated in the "Impact Fee Nexus Study Template" prepared for the California Department of Housing and Community Development by Terner Center for Housing Innovation at UC Berkeley, the Planned Facility Method "Estimates the costs for future facilities needed to serve new development based on a long range expenditure plan for these future facility costs."

In order to distribute the share of project costs to each land use type, the total water demand of new development must be calculated. The recycled water fee uses the water demand factors in the Water Master Plan as the recycled water program is part of the City's overall water supply solution. The water demand factors were calculated using Table 4-15 "Adopted Unit Water Demand Factors" from the Water Master Plan, page 4-28. The water demand factor for each land use is converted into an EDU factor, which is the estimated average water demand for each land use as compared to the average water demand of a single-family unit. This EDU factor is then multiplied by the residential units or the non-residential acreage to determine the total EDUs. This calculation is shown in **Table 3-2**.

Table 3-2: Recycled Water Fee per EDU Calculation

Land Use	Demand Factor [3]	EDU Factor	Units/ Acres	Total EDUs
Residential [1]	*gpd/du*		*Units*	
Single Family Residential [2]	365	1.00	15,539	15,539
Multi-Family Residential (Attached 2-4)	300	0.82	875	718
High Density Residential (Attached 4+)	204	0.56	3,871	2,168
Subtotal Residential			**20,285**	**18,425**
Non-Residential [1]	*gpd/ac*		*Acres*	
Office	1,438	3.94	253	995
Commercial	1,635	4.48	936	4,191
Industrial	1,309	3.59	3,252	11,675
Subtotal Non-Residential			**4,440**	**16,861**
Total				**35,286**

Source: Tracy Citywide Water System Master Plan Update, prepared by West Yost Associates (May 2023).

[1] Modified from Master Plan to include exterior water use.

[2] Includes very low density and age restricted units.

[3] Based on modified unit water demand factors from the Master Plan.

The cost per EDU for the Recycled Water Fee is calculated by taking the project costs, subtracting out expenditures to date and the current fund balance, adding remaining credits, subtracting Cordes Ranch deferred fees and other funding sources (grants and Ellis contributions), and then dividing by the total water demand expressed in EDUs. This calculation is shown in **Table 3-3**.

Table 3-3: Recycled Water Cost per EDU

Fee Program	Cost Attributable to Fee Program	Expenditures to Date[1]	Fund Balance[2]	Outstanding Credits/ Reimb.[3]	Cordes Ranch/ Tracy Hills Deferred Payment[4]	Less Grant Funding[5]	Ellis Contribution[6]	Remaining Cost Attributable to Fee Program	Total EDUs	Cost/ EDU[7]
Recycled Water	$100,704,605	($1,654,258)	($4,871,815)	$6,618,844	($3,572,535)	($20,000,000)	($717,679)	$76,507,162	35,286	$2,168

[1] Some costs related to the Recycled water System Expansion have already been spent and are being removed from the remaining costs.

[2] Fund balance provided by the City of Tracy and current as of 05/20/2025.

[3] Remaining credits due to developers as of 05/20/2025. Includes costs of projects that were previously adopted in the 2013 Master Plan and have been constructed.

[4] Cordes Ranch Deferred fees of $891,612 (DA Section 6.3C 09/17/2013) plus Tracy Hills deferred fees of $2,680,923. Does not include PM.

[5] Represents grant received from the Department of Water Resources (DWR) through the award of the Urban and Multibenefit Drought Relief Grant.

[6] Represent remaining Ellis development contribution to the Master Plan Recycled Water Fee Program improvements.

[7] Cost per EDU rounded to the nearest dollar.

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FEE SUMMARY

The Recycled Water Fee is calculated by taking the cost per EDU and multiplying by the EDU factor for each land use type. Residential fees per unit are converted to a fee per square foot by dividing the fee per unit by the corresponding square foot assumptions. Non-residential fees are converted to a fee per 1,000 building SF by dividing the cost per acre by the floor area ratio conversion assumptions in this Nexus Study. **Table 3-4** summarizes the Recycled Water Fee for each land use.

Table 3-4: Recycled Water Fee

Land Use	EDU Factor	Recycled Water Fee Per Unit	Average Size/ FAR Conversion [1]	Recycled Water Fee [2]
Residential [3]		*(per Unit)*		*(per SF)*
Single Family Residential	1.00	$2,168	2,500	$0.87
Multi-Family Residential (Attached 2-4)	0.82	$1,778	1,500	$1.19
High Density Residential (Attached 4+)	0.56	$1,214	950	$1.28
Non-Residential		*(per Acre)*		*(per 1,000 Bldg SF)*
Office	3.94	$8,542	19.60	$436
Commercial	4.48	$9,713	13.07	$743
Industrial	3.59	$7,783	21.78	$357

[1] Average size based on the average unit size of planned new development in the City of Tracy. Floor Area Ratios used to convert EDU per Acre to per KSF: Office (0.45), Commercial (0.3), and Industrial (0.5).

[2] Residential fee rounded to nearest hundredth. Non-Residential fee rounded to the nearest dollar.

[3] The fee for residential will be applied to the livable square footage.

FEE COMPARISON

Table 3-5 compares the proposed Recycled Water Fee to the existing Recycled Water Fee (as of July 1, 2024). The existing per unit fee was converted to a fee per square foot using the same average unit sizes as the proposed fees. The existing non-residential fees were converted from a per acre fee to a per 1,000 building SF fee using the FAR assumptions in this Nexus Study.

The Recycled Water Fee is decreasing for a variety of reasons, which are described in the Water Master Plan and summarized below:

1. Reduction in Water Demands: Due to changes in water use trends and habits resulting from improved water use efficiency, unit water demand factors have been reduced for most land use categories.
2. Reduction in Maximum Day and Peak Hour Demand Factors: Due to changes in water use trends and habits from improved water use efficiency, maximum day and peak hour demand factors have been reduced.
3. Changes in Recycled Water System Planning: Previously, the City was considering implementing the proposed Gateway Exchange Program, under which recycled water service would be extended to most of the existing parks and large irrigated areas in the City to offset the potable water demands from the Gateway development (now called Westside). The Gateway Exchange Program is no longer being considered, and it is projected that only a few existing parks and irrigated areas will receive recycled water supply. Expansion of the recycled water system will focus on extending service to newly developed areas thus streamlining the need for new facilities.
4. Completion of New Recycled Water System Facilities: New recycled water system facilities have been recently completed which provide for added recycled water system capabilities. This includes a recycled water pump station and pipeline on the west side of the City to distribute recycled water supplies from the City's Wastewater Treatment Plant to recycled water users on the western side of the City.
5. The City secured Grant Funding that was used to build recycled water facilities thus offsetting impact fee funding needs. The City was awarded the Urban and Multibenefit Drought Relief Grant from the Department of Water Resources (DWR).

Table 3-5: Recycled Water Fee Comparison

Land Use	Proposed Recycled Water	Existing Recycled Water [1]	Percent Change
Residential (per SF)			
Single Family Residential	$0.87	$1.44	-40%
Multi-Family Residential (Attached 2-4)	$1.19	$2.07	-42%
High Density Residential (Attached 4+)	$1.28	$2.20	-42%
Non-Residential (per 1,000 Bldg SF)			
Office	$436.00	$844.79	-48%
Commercial	$743.00	$1,554.24	-52%
Industrial	$357.00	$760.32	-53%

[1] Program Management (5%) removed from Construction Cost of Existing Fee for an accurate comparison.

EXISTING AND PROPOSED LEVEL OF SERVICE

AB 602 states, "When applicable, the nexus study shall identify the existing level of service for each public facility, identify the proposed new level of service and include an explanation of why the new level of service is appropriate."

A standard of service refers to adopted policies in law or practice that are either in place for a particular service or are intended to be. Recycled water service is unique in that its' purpose is to free up potable water in order to supply new development with needed water. The use of recycled water is new and is being implemented as a way to meet new developments' water demands. Each new user creates a direct, immediate impact on the need for water supply and there must be sufficient capacity in the water system to provide a consistent level of service for all customers at the appropriate service standard.

The Recycled Water CIP list identifies the facilities needed to serve new development in order to meet water supply needs for new development. This ensures that new development is only funding their fair share of the facilities based on their impact on the system.

The planned capital projects in **Table 3-1** were identified in the WMP to maintain existing water supply as growth occurs.

NEXUS REQUIREMENT SUMMARY

AB 1600 requires that public agencies satisfy five requirements when establishing, increasing, or imposing a fee as a condition of approval of a development project. The required findings are as follows.

Requirement 1: Identify the purpose of the fee.

The purpose of the Recycled Water Fee is to fund the recycled water facilities that are necessary to offset potable water needs with non-potable water in order to secure adequate potable water for future development in the Master Plan fee program area. In order to accommodate this need, new facilities must be built and/or existing facilities expanded.

Requirement 2: Identify the use of the fee.

The Recycled Water Fee will be used to fund the recycled water projects shown in **Table 3-1**. These recycled water projects were identified in the *Tracy Citywide Water System Master Plan Update*, prepared by West Yost Associates (May 2023) as the facilities required to mitigate the impact of new development in the Master Plan fee program area of the City. These facilities will provide distribution of treated wastewater to offset potable water needs.

Requirement 3: Determine how there is a reasonable relationship between the fee's use and the type of development project on which the fee is imposed.

The Recycled Water Fee will be used to fund the new recycled water facilities and improvements that are necessary to transport treated wastewater to various future development areas to help offset potable water irrigation demands and to provide the facilities necessary for the City to implement the Recycled Water Exchange Program with USBR. The fee for each land use is calculated based on the estimated water use of each development, as shown in **Table 3-2**, since the Recycled Water Fee will be used to help offset potable water supply. This correlation ensures that the fee is equal to the proportional share of water that is necessary to serve that specific land use. These calculations are shown in **Table 3-3** and **Table 3-4**.

Requirement 4: Determine how there is a reasonable relationship between the need for the public facility and the type of development project on which the fee is imposed.

New development requires additional water supply in order for the City to meet the average daily demands of the new development. In order to help meet these supply needs, the City will install a recycled water system that transports treated wastewater to various locations within the City, thus replacing potable water use with non-potable water use. This in turn frees up water supply to be used by new developments. In addition, the City is proposing a Recycled Water Exchange program with USBR where the recycled water would be discharged to the DMC and a like amount of raw water would be diverted to the City for potable use. Because all new development creates the need for

potable water, the recycled water fee is being charged to each land use based on their water demands as shown in **Table 3-2** This methodology ensures each land use is paying a fee based on their fair share of the recycled water system. These calculations are shown in **Table 3-3** and **Table 3-4**.

Requirement 5: Determine how there is a reasonable relationship between the amount of the fee and the cost of the public facility or portion of the public facility attributable to the development on which the fee is imposed.

The recycled water improvements required to serve new development are shown in **Table 3-1**. Each land use pays their fair share of costs based on the estimated average daily demand for water as shown in **Table 3-2**. The Recycled Water Fee calculation is shown in **Table 3-3** and **Table 3-4**. The fee methodology ensures that each land use only pays for their fair share of the recycled water improvements based on the amount of water utilized by that land use. Service populations were identified for each fee category and EDUs were calculated based on the estimated daily demand for the various land uses in **Table 3-2.** To ensure that each land use only pays their fair share of the recycled water improvements, prior expenditures, the existing fund balance, deferred fees and credits are subtracted out from the total costs of the recycled water facilities attributable to new development as identified in the Water Master Plan, and shown in **Table 3-3,** to calculate the cost per EDU. The recycled water fee calculation spreads the appropriate costs over the various land uses is shown in **Table 3-4.** The fee methodology ensures that each land use only pays for their fair share of the recycled water improvements based on the amount of water required by that land use.

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Section 4 IMPLEMENTATION AND ADMINISTRATION

IMPLEMENTATION

According to the California Government Code, prior to levying a new fee or increasing an existing fee, an agency must hold at least one open and public meeting with at least 30 days' notice. In addition, notice of the time and place of the meeting, including a general explanation of the matter to be considered, and a statement that the data required by this section is available, shall be mailed at least 14 days prior to the meeting to any interested party who files a written request with the local agency for mailed notice of the meeting on new or increased fees or service charges. Any written request for mailed notices shall be valid for one year from the date on which it is filed unless a renewal request is filed. At least ten days prior to this meeting, the agency must make data on infrastructure costs and funding sources available to the public. Notice of the time and place of the meeting and a general explanation of the matter are to be published in accordance with Section 6062a of the Government Code, which states that publication of notice shall occur for ten days in a newspaper regularly published once a week or more. Two publications, with at least five days intervening between the dates of first and last publication not counting such publication dates, are sufficient. The period of notice commences upon the first day of publication and terminates at the end of the tenth day, including therein the first day. The new or increased fees shall be effective no earlier than 60 days following the final action on the adoption or increase of the fees. Following adoption of the fees, the fees and supporting information must be placed on the City's website.

FEE PROGRAM ADMINISTRATIVE REQUIREMENTS

The Government Code requires the City to report every year and every fifth-year certain financial information regarding the fees. The City must make available within 180 days after the last day of each fiscal year the following information from the prior fiscal year:

1. A brief description of the type of fee in the account or fund.
2. The amount of the fee.
3. The beginning and ending balance in the account or fund.
4. The amount of the fee collected and the interest earned.
5. An identification of each public improvement for which fees were expended and the amount of expenditures.
6. An identification of an approximate date by which time construction on the improvement will commence if it is determined that sufficient funds exist to complete the project.
7. An identification of each improvement identified pursuant to requirement #6 listed on a previous report and whether construction began on the approximate date noted within that report. If construction did not commence by the approximate date provided in the previous report, identify the reason for the delay and a revised approximate commencement date.

8. A description of each interfund transfer or loan made from the account and when it will be repaid.
9. Identification of any refunds made and the number of persons or entities identified to receive those refunds once it is determined that sufficient monies have been collected to fund all fee related projects.

On October 11, 2023, California Governor Gavin Newsom signed into law AB 516 which amended certain portions of the Mitigation Fee Act related to the annual and five-year reporting requirements. Under AB 516, Requirements 6 and 8 have been expanded to include the following:

> 6a. Identification of each public improvement identified in the previous report and whether construction began on the approximate date noted.
>
> 6b. For previously identified projects that did not start construction on the approximate date in the previous report, the reason for the delay and a revised approximate date that the local agency will commence construction, if applicable.
>
> 6c. For any refunds made, the number of persons or entities identified to receive those refunds.

The City must make this information available for public review and must also present it at the next regularly scheduled public meeting not less than 15 days after this information is made available to the public.

For the fifth fiscal year following the first deposit into the account or fund, and every five years thereafter, the City must make the following findings with respect to any remaining funds in the fee account, regardless of whether those funds are committed or uncommitted:

1. Identify the purpose to which the fee is to be put.
2. Demonstrate a reasonable relationship between the fee and the purpose for which it is charged.
3. Identify all sources and amounts of funding anticipated to complete financing any incomplete improvements.
4. Designate the approximate dates on which funding in item (3) above is expected to be deposited into the fee account.

As with the annual disclosure, the five-year report must be made public within 180 days after the end of the City's fiscal year and must be reviewed at the next regularly scheduled public meeting.

FEE ADJUSTMENT PROCEDURES

The Water and Recycled Water fees may be adjusted periodically to reflect revised facility requirements, receipt of funding from alternative sources (i.e., state or federal grants), revised facilities or costs, changes in demographics, changes in the average unit square footage, or changes in the land use plan. In addition, the fees will be automatically updated each year on July 1st based on the June ENR CCI for San Francisco. Due to the timing of when the fees will take into effect, the next fee adjustment will occur July 2026.

TIMING OF FEE PAYMENT

Fees will be collected at the time the building permit for the project is issued. All residential projects will pay a fee based on the livable square footage of the residential units. For residential projects that include multiple buildings, fees will be due at the time the building permit is issued for each building. The non-residential communal portion for high-density residential projects (i.e., clubhouse, maintenance facility, gym, etc.) will not be assessed impact fees as the impact is considered to be captured in the residential fees. Areas that are accessible by the public (i.e., a leasing office) will be charged impact fees according to use. Further information on what portion of a project may be subject to fees is discussed within Section 2 – Average Unit Sizes.

DESIGNATED RESIDENTIAL PROJECTS DEFERRED FEE PAYMENTS

California Senate Bill 937 (SB 937), which became effective on January 1, 2025, significantly delays the collection of fees for residential projects defined as "Designated Residential Development Projects." Specifically, SB 937 states that public agencies may not impose development impact fees on Designated Residential Development Projects until the project receives a Certificate of Occupancy or Temporary Certificate of Occupancy. Furthermore, local agencies may not charge interest on the delayed fee payments for such projects; rather, the fees must reflect the fee amount in place at the time the project's building permits are issued. In addition, the bill extends housing entitlements by 24 months for projects with entitlements issued prior to January 1, 2024, and set to expire on or before December 21, 2025.

SB 937 was designed to incentivize housing production by mitigating the effects of rising construction costs and interest rates, which hinder the financial feasibility of new housing projects. By deferring fee payments with zero interest, SB 937 can help to incentivize housing developers, who must demonstrate financial feasibility to investors and lending institutions before receiving necessary funding. Additionally, by extending entitlements, the bill allows developers more time to raise funding before constructing the project. By providing these incentives to developers, the bill strives to increase housing production, allowing local jurisdictions to fulfill their housing goals.

Housing projects must meet one of the following conditions to be considered a Designated Residential Development Project:

1. 100% of residential units (excluding the manager's unit) are reserved for low-income households.
2. The project meets the requirements regarding a Low Barrier Navigation Center Developments, per Government Code Section 65662.
3. The project is approved by a local government and meets all site-specific criteria, affordability criteria, and objective development standards pertaining to affordable housing developments located in commercial zones or mixed-income housing developments along commercial corridors, as specified by Article 2 (commencing with Section 65912.110) or Article 3 (commencing with Section 65912.120) of Chapter 4.1 of the Government Code.
4. The project is subject to a streamlined ministerial approval process, per Government Code Section 65913.4.
5. The project meets the criteria specified in the Affordable Housing on Faith and Higher Education Lands Act of 2023 (SB4)
6. The project is entitled to a Density Bonus, per Government Code Section 65915.
7. The project features 10 or fewer units.

Although fees are deferred for Designated Residential Development Projects until the project receives a Certificate of Occupancy or Temporary Certificate of Occupancy, it is important to note that public agencies may still collect utility service fees after receiving an application for utility services. In addition, developers may be required to pay development impact fees prior to the Certificate of Occupancy if construction does not commence within five years of the building permit issue date.

PROGRAM MANAGEMENT

The City, with assistance from consultants, oversees the implementation and administration of the TIMP Fee Program, consistent with the requirements of the Mitigation Fee Act. For all TIMP fees, a Program Management Fee is added to fund the costs of City's management and ongoing fee program administration, collection, and reporting. This includes costs associated with City staff and consultant time, studies, and administration to support the program. Industry standard ranges from three to six percent (3-6%) for the administrative component of a development fee program. The City has historically collected five percent (5%) for administrative costs on each fee, which was previously included as a soft cost mark-up. Administratively, the five percent (5%) charge per fee was difficult to account for throughout the numerous fee funds.

Thus, a separate Program Management Fee will be collected in a separate fund for ease of administration. Additional information regarding the Program Management Fee can be found in the Program Management Impact Fee Nexus Study, prepared by Harris & Associates (March 2024). The administrative functions of the Program Management Fund include, but is not limited to, the following:

- Annual fee adjustments
- Annual fee reporting
- Additional fee reporting every five years
- Application and tracking of fee credits and reimbursements
- Posting of nexus studies and fee schedules on the City's website
- Periodic nexus study updates
- Staff and consultant time related to fee preparation, collection, tracking, and administration

CREDITS AND REIMBURSEMENT POLICIES

Fee credits and reimbursements may be allowed for developer-constructed facilities in compliance with Title 13 of the Tracy Municipal code and other applicable polices. Credits and reimbursements shall be calculated specifically for each project as applicable. It should be noted that per Section 13.08.020 (e) of the Tracy Municipal Code "The Subdivider shall not be entitled to any credit for program implementation or contingencies."

PROGRAMMING REVENUES WITH THE CIP

The City should maintain its Capital Improvement Program (CIP) to adequately plan for future infrastructure needs. The CIP should commit all projected fee revenues and fund balances to specific projects that are necessary to serve growth. The CIP provides documentation necessary for the City to hold funds in a project account for longer than five years if necessary to collect sufficient funds to complete a project. This report outlines the projects that are to be funded with the Water fee program and the Recycled Water fee program and the approximate timing that the improvements are needed. This forms the basis of the respective CIP. The Water Fee CIP is listed in **Table 2-1, Table 2-2, Table 2-3,** and **Table 2-4**. The Recycled Water Fee CIP is listed in **Table 3-1**.

FEE REPORTING

Assembly Bill No. 1483, which became effective January 1, 2020, requires that public agencies make the following information available on their website. The following information must be provided:

1. A current schedule of fees, exactions, and affordability requirements imposed by the city, county, or special district, including any dependent special districts, of the city or county applicable to a proposed housing development project, which shall be presented in a manner that clearly identifies the fees, exactions, and affordability requirements that apply to each parcel.
2. All zoning ordinances and development standards, which shall specify the zoning, design, and development standards that apply to each parcel.
3. The list of information required to be compiled pursuant to Section 65940.

4. The current and five previous annual fee reports or the current and five previous annual financial reports, that were required pursuant to AB 1600.
5. An archive of impact fee nexus studies, cost of service studies, or equivalent, conducted by the city, county, or special district on or after January 1, 2018.

Any updates to the above information must be available within 30 days.

ACCESSORY DWELLING UNITS

An accessory dwelling unit (ADU) is a second unit that is attached or detached from a single-family home. In accordance with Assembly Bill No. 881 approved on October 9, 2019, TIMP fees will not be charged for an ADU that is less than 750 square feet. For an ADU that is 750 square feet or larger, the ADU will be charged proportionately in relation to the square footage of the primary dwelling unit. Since the TIMP residential fees are now being charged on a square footage basis, ADU fees will be calculated by multiplying the TIMP Single Family Residential fee by the ADU's square footage.

SPECIALIZED DEVELOPMENT PROJECTS

The fees in this report may not apply to specialized development projects such as golf courses, cemeteries, sports stadiums, truck lots, or other specialized land uses. For specialized development projects the City will review the development's impacts to determine the applicable fees. The fee rates presented in this Nexus Study may be reduced, exempted, or waived under certain circumstances as determined by the City. Any exemption or reduction in fees will be based on the City's independent analysis and review of the subject property. In addition, specialized land uses may be calculated utilizing the cost per EDU applied to the number of EDUs of the specialized land use as determined by the City's independent analysis.

Some developments may include more than one land use type. In these cases, the fee is calculated separately for each land use. The City has the discretion to impose the fees based on the specific aspects of a proposed development regardless of zoning. The fee imposed should be based on the land use type that most closely represents the impacts of the development.

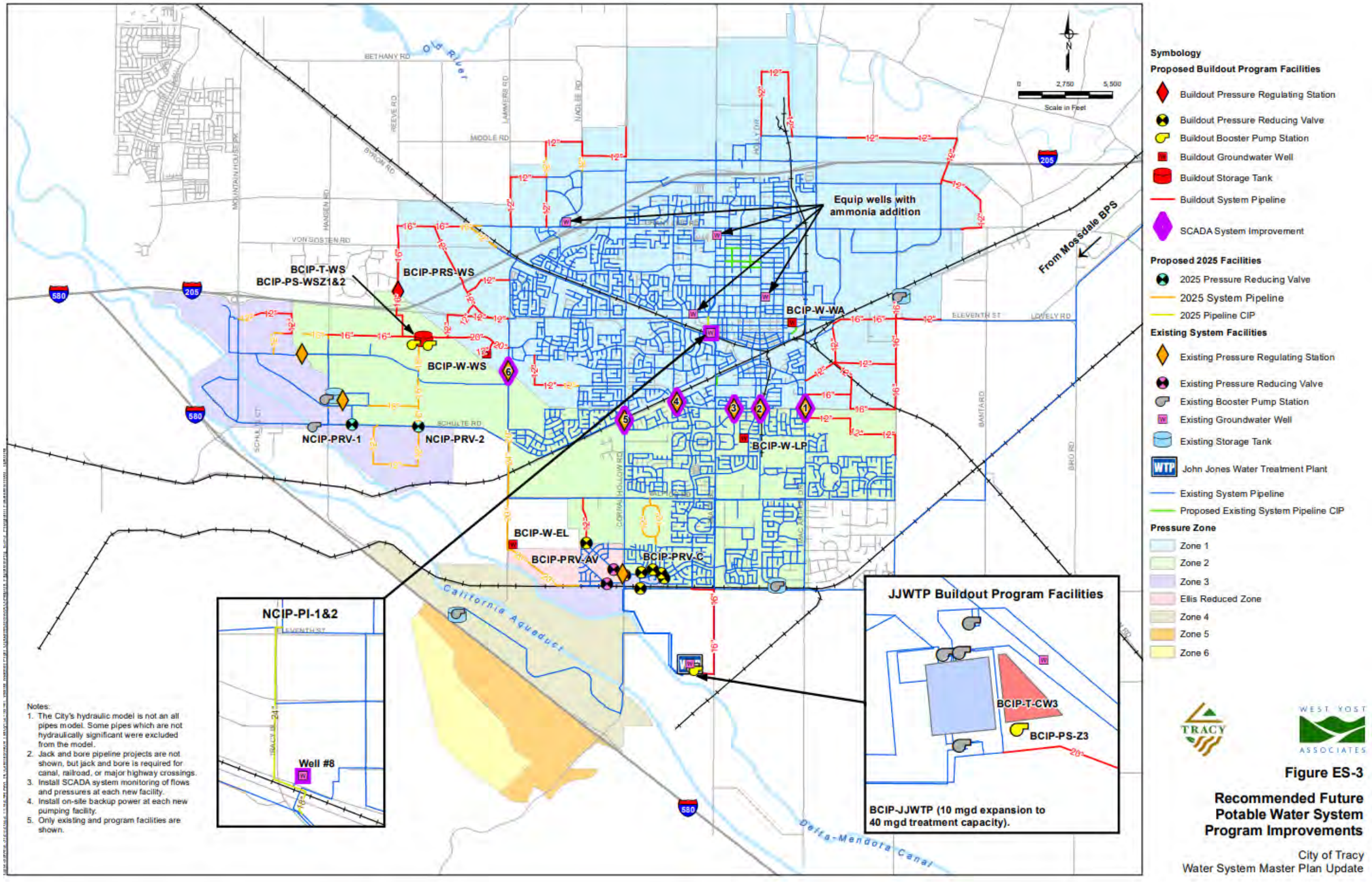
Section 5 APPENDICES

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Appendix A: Water Exhibits

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Figure A-1: Recommended Future Potable Water System Program Improvements – 2025



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Figure A-2: Recommended Future Potable Water System Program Improvements – Buildout

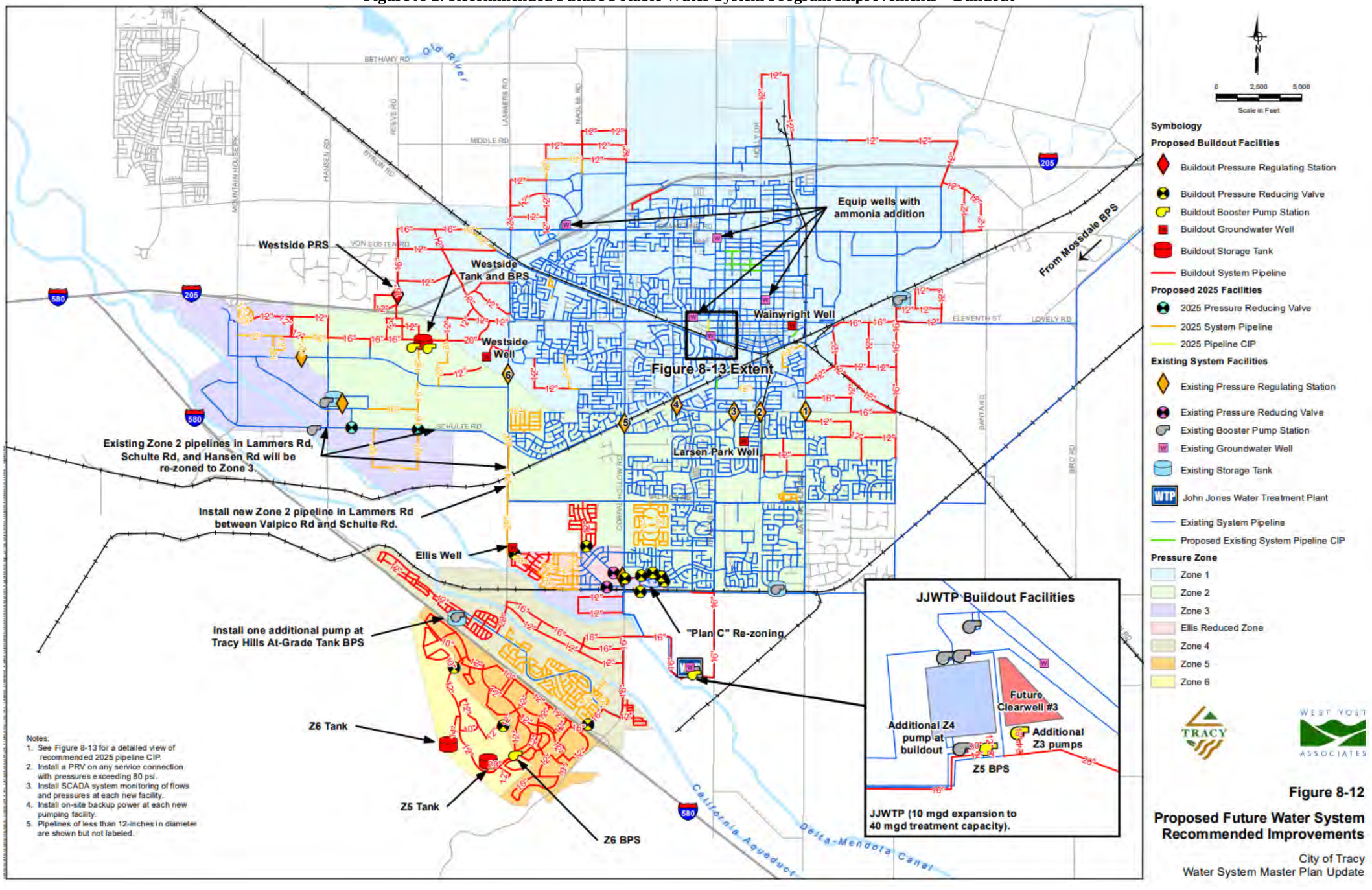
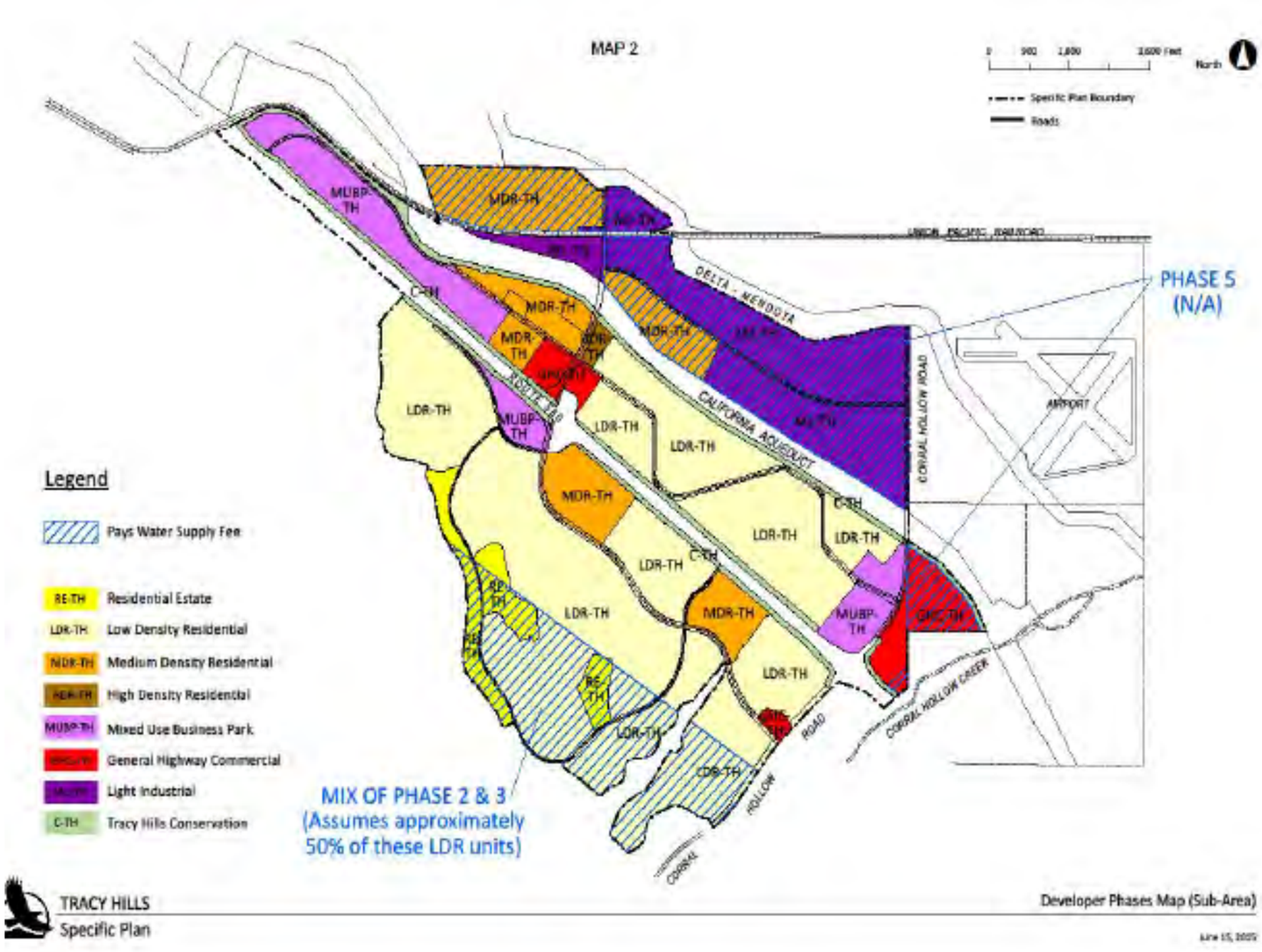


Figure 8-12
Proposed Future Water System Recommended Improvements
City of Tracy
Water System Master Plan Update

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Figure A-3: Tracy Hills Finance and Implementation Plan Water Supply Fee Sub Area (06/21/2018)

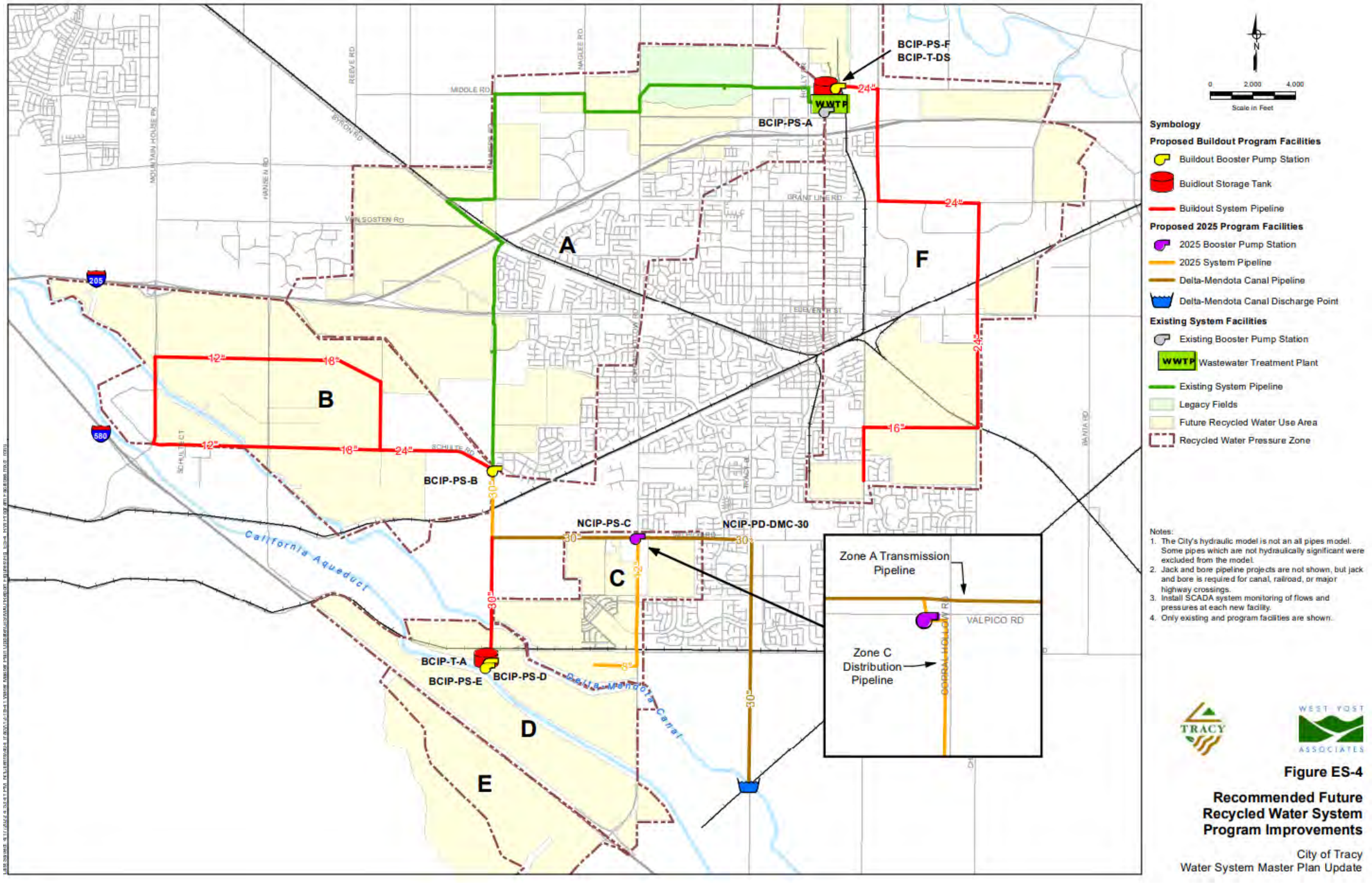


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Appendix B: Recycled Water Exhibits

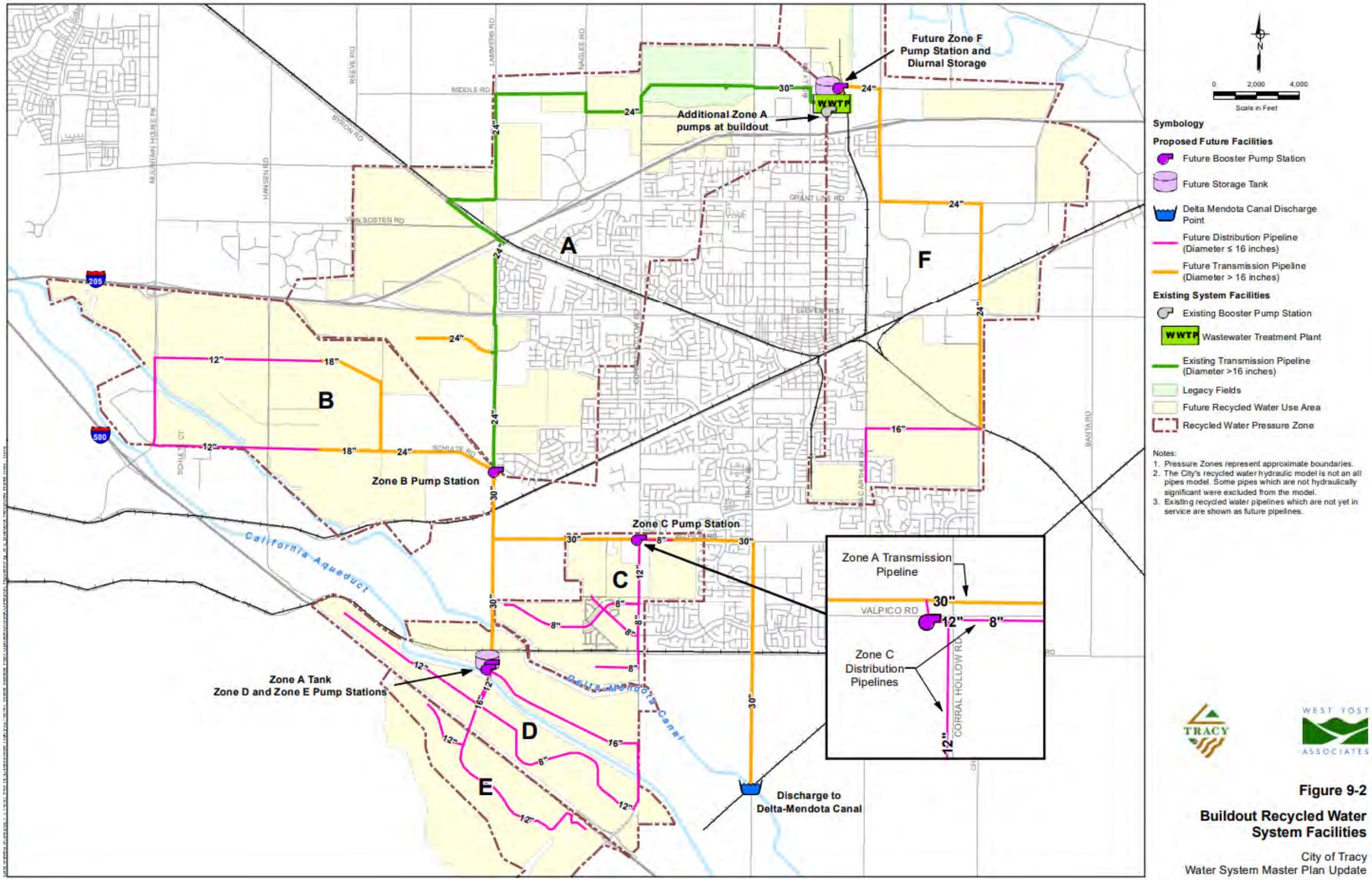
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Figure B-1: Recommended Future Recycled Water System Program Improvements - 2025



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Figure B-2: Recommended Future Recycled Water System Program Improvements – Buildout



TRACY

WEST YOST ASSOCIATES

Figure 9-2

Buildout Recycled Water System Facilities

City of Tracy
Water System Master Plan Update

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Appendix C: Tracy Citywide Water System Master Plan Update (May 2023)

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CITY OF TRACY

Citywide Water System Master Plan Update

FINAL REPORT

MAY 2023







WEST YOST ASSOCIATES

Citywide Water System Master Plan Update

Prepared for

City of Tracy

Project No. 404-12-18-41



May 2023

Project Manager: Amy Kwong, PE — Date

May 2023

QA/QC Review: Elizabeth Drayer, PE — Date

PREFACE

During the time that this Citywide Water System Master Plan was prepared and completed, several development projects have progressed, and some associated water system infrastructure improvements have been completed. As such, tables and figures in this Master Plan showing existing water system facilities may not include all of the current existing water system facilities. Similarly, tables and figures showing future recommended water system facilities may include some water system facilities which have already been constructed. This does not change the results or the recommendations of the Citywide Water System Master Plan.

The Tracy Infrastructure Master Plan (TIMP) Impact Fee Nexus Study, being prepared by Harris & Associates based on this Citywide Water System Master Plan, does consider the recent completion of water system facilities, so that updated water system impact fees reflect only those water system facilities which have not yet been constructed.

The City's progress in completing water system infrastructure improvements is exciting, and we look forward to the completion of additional recommended infrastructure improvements in the coming years.

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List of Acronyms and Abbreviations

2018 Bay-Delta Water Quality Control Plan	2018 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary
AB	Assembly Bill
AC	Asbestos Cement
ADUs	Accessory Dwelling Units
af/ac/yr	Acre-Feet Per Acre Per Year
af/yr	Acre Feet Per Year
ASR	Aquifer Storage and Recovery
AWWA	American Water Works Association
BBID	Byron Bethany Irrigation District
BCID	Banta-Carbona Irrigation District
BMOs	Basin Management Objectives
BMP	Best Management Practices
BPS	Booster Pump Station
CARB	California Air Resources Board
CBSC	California Building Standards Commission
CFC	California Fire Code
CI	Cast Iron
CIP	Capital Improvement Program
City	City of Tracy
CUWCC	California Urban Water Conservation Council
CVP	Central Valley Project
DDW	Division of Drinking Water
DI	Ductile Iron
DMC	Delta-Mendota Canal
DWR	Department of Water Resources
EIRs	Environmental Impact Reports
EPA	Environmental Protection Agency
FAR	Floor to Area Ratios
fps	Feet Per Second
ft/kft	Feet Per Thousand Feet
GEI	GEI Consultants
GHG	Greenhouse Gas
GIS	Geographic Information System
GMO	Growth Management Ordinance
GMP	Groundwater Management Plan
gpcd	Gallons Per Capita Per Day
gpm	Gallons Per Minute
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
IPC	International Park of Commerce
JJWTP	John Jones Water Treatment Plant

K/J/C	Kennedy/Jenks/Chilton
LEED	Leadership in Energy and Environmental Design
Legislature	California State Legislature
lf	Linear Feet
M&I	Municipal & Industrial
MG	Million Gallons
mgd	Million Gallons per Day
MOA	Memorandum of Agreement
MSR	Municipal Service Review
MWELO	Model Water Efficient Landscape Ordinance
NEI	Northeast Industrial Area
NFPA	National Fire Protection Association
NRW	Non-Revenue Water
O&M	Operations and Maintenance
PPBP	Patterson Pass Business Park
PRS	Pressure Regulating Station
PRV	Pressure Reducing Valve
psi	Pounds Per Square Inch
PSV	Pressure Sustaining Valve
R&R	Renewal and Replacement
RGA	Residential Growth Allotment
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SB X7-7	Water Conservation Act of 2009
SCADA	Supervisory Control and Data Acquisition
SCS	Sustainable Community Strategy
SCWSP	South County Water Supply Project
SED	Substitute Environmental Document
SGMA	Sustainable Groundwater Management Act
SOI	Sphere of Influence
SSJID	South San Joaquin Irrigation District
SWRCB	State Water Resources Control Board
TDS	Total Dissolved Solids
Tracy Subbasin	San Joaquin Valley Groundwater Basin-Tracy Subbasin
UAFW	Unaccounted-for Water
USBR	United States Bureau of Reclamation
UWMP	Urban Water Management Plan
VFD	Variable Frequency Drive
VVH	VVH Consulting Engineers
WSCP	Water Shortage Contingency Plan
WSID	West Side Irrigation District
WSMP	Water System Master Plan
WWTP	Wastewater Treatment Plant

CITYWIDE WATER SYSTEM MASTER PLAN UPDATE EXECUTIVE SUMMARY

PURPOSE FOR THE CITYWIDE WATER SYSTEM MASTER PLAN UPDATE

The purpose of this Citywide Water System Master Plan Update for the City of Tracy (City) is to provide an evaluation of the required backbone potable water and recycled water system facilities required to serve existing and future needs. The City's last Citywide Water System Master Plan was completed in 2012 (2012 WSMP) and was based on projected land uses included in the City's 2011 General Plan. Since that time, significant new residential and commercial development has occurred in the City (including the International Park of Commerce within the Cordes Ranch Specific Plan area, Tracy Ellis, Tracy Hills and numerous smaller projects) and planning for future developments has been refined. Also, during that same time, the State endured five years of drought starting in 2012, including the driest four consecutive years in California history. These unprecedented conditions led to statewide mandated water conservation, significant surface water supply reductions and curtailments and legislation establishing new water efficiency standards.

All of these factors have led to a need to reevaluate the City's potable water and recycled water needs, the projected availability and reliability of the City's water supplies and the required water system infrastructure improvements to ensure a safe and reliable water supply for the City's residents and businesses.

OBJECTIVES OF THE CITYWIDE WATER SYSTEM MASTER PLAN UPDATE

This Citywide Water System Master Plan Update has been prepared based on the following overall water system objectives and goals:

- Ensure safe, adequate and reliable water supplies for the City's existing and future residents and businesses.
- Support the goals, objectives and policies of the City's General Plan, particularly those contained in the Public Facilities and Services Element.
- Comply with existing and future legislation and regulations for both potable and non-potable (recycled) water supplies.

Based on the City's water system objectives, the objectives of this Citywide Water System Master Plan Update are to:

- Evaluate existing water demands to understand current water use patterns and trends and project future water demands for near-term (2025), future (2040) and General Plan buildout conditions.
- Provide an updated evaluation of the availability and reliability of the City's existing and future water supplies and their ability to meet existing and future water demands considering recent changes in projected supply reliability.

- Review and refine performance and operational criteria under which the potable and recycled water systems will be analyzed and recommendations for future facilities will be formulated.
- Evaluate the need for new backbone potable water facilities (including pipelines, storage facilities and pumping facilities) to serve buildout of the City's General Plan.
- Evaluate the need for new backbone recycled water facilities (including pipelines, storage facilities and pumping facilities) to serve buildout of the City's General Plan.
- Develop a capital improvement program for recommended potable and recycled water system facilities.

KEY CHANGES FROM THE 2012 CITYWIDE WATER SYSTEM MASTER PLAN

This Cityside Water System Master Plan Update incorporates and considers several changed conditions, new water system facilities, and new water supply opportunities from what was included in the 2012 Citywide Water System Master Plan. A summary of these is provided below:

- Changes in Projected Land Use: Compared to the projected land use in 2012 Citywide Water System Master Plan, there has been a significant shift in the City's projected land use composition towards residential development and away from commercial and industrial development. However, when compared to the City's historical and existing land uses, which were primarily residential, the projected land uses for new development are more heavily skewed to non-residential uses (with almost 60 percent of the projected acres of new development being non-residential uses). The future industrial, commercial, and retail growth anticipated in the City's Sphere of Influence is reflective of the City's goal to bring jobs and economic growth and improve the City's jobs-housing balance (see Chapter 3 for additional information).
- Reduction in Unit Water Demands: Due to changes in water use trends and habits resulting from improved water use efficiency, unit water demand factors have been reduced for most land use categories (see Chapter 4 for additional information).
- Reduction in Maximum Day and Peak Hour Demand Factors: Due to changes in water use trends and habits from improved water use efficiency, maximum day and peak hour demand factors have been reduced (see Chapter 4 for additional information).
- Changes in Recycled Water System Planning: Previously, the City was considering implementing the proposed Gateway Exchange Program, under which recycled water service would be extended to most of the existing parks and large irrigated areas in the City to offset the potable water demands from the Gateway development (now called Westside). The Gateway Exchange Program is no longer being considered, and it is projected that only a few existing parks and irrigated areas will receive recycled water supply. Expansion of the recycled water system will focus on extending service to newly developed areas (see Chapters 4 and 9 for additional information).

- Reduction in Surface Water Supply Reliability: Due to unprecedented drought conditions from 2011 through 2017 and new flow restrictions resulting from the 2018 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary, projected reliabilities of surface water supplies from the Central Valley Project (CVP) and South San Joaquin Irrigation District (SSJID) have been significantly reduced, particularly in dry years. The City has entered into discussions with the Contra Costa Water District and the San Luis & Delta-Mendota Water Authority to explore the City's potential participation in the Phase 2 Los Vaqueros Reservoir Expansion Project to increase the City's water supply reliability by providing storage of supplies for use in dry years (see Chapter 5 for additional information).
- Proposed Recycled Water Exchange Agreement: The City is evaluating the potential for indirect reuse of its available recycled water through an exchange agreement with the United States Bureau of Reclamation (USBR) whereby a portion of the City's tertiary-treated wastewater (recycled water) would be discharged to the Delta Mendota Canal (DMC) and a like amount of water (i.e., a one-to-one exchange) could then be diverted from the DMC by the City for treatment at the City's John Jones Water Treatment Plant (JJWTP) for potable use. Such supplies would be 100 percent reliable and would not be subject to drought cutbacks. With the potential reduction in reliability of the City's surface water supplies from the CVP and SSJID, this proposed recycled water exchange agreement will be a critical component of the City's future water supply portfolio (see Chapter 5 for additional information).
- Reduction in Emergency Storage Requirement: The 2012 WSMP used an emergency storage volume requirement of two (2) times the average day demand. After reviewing emergency storage criteria for other similar water systems within the region, and taking into account the City's redundant sources of supply (CVP, SSJID, and groundwater), it is recommended that the City reduce the minimum quantity of emergency storage volume required to 1.5 times the average day demand for this Citywide Water System Master Plan Update (see Chapter 6 for additional information).
- Addition of New Water System Facilities: Several new water system facilities have been recently completed which provide for added water system capabilities. These include the Cordes water storage tank and pump station, the Tracy Hills water storage tank and pump station (nearing completion as of September 2021), new pump stations at the City's JJWTP to serve the City's Pressure Zone 3 and initial phases of the Tracy Hills development, and a recycled water pump station and pipeline on the west side of the City to distribute recycled water supplies from the City's Wastewater Treatment Plant to recycled water users on the western side of the City (see Chapters 7 and 9 for additional information).

- Renaming of Potable Water Pressure Zones: To minimize confusion when referring to the City's primary potable water system pressure zones, the potable water system pressure zones have been renamed as follows:
  - Pressure Zone 1 – no change
  - Pressure Zone 2 – no change
  - City-side Pressure Zone 3 – now referred to as Pressure Zone 3
  - Tracy Hills Pressure Zone 3 – now referred to as Pressure Zone 4
  - Tracy Hills Pressure Zone 4 – now referred to as Pressure Zone 5
  - Tracy Hills Pressure Zone 5 – now referred to as Pressure Zone 6

  The remainder of this Citywide Water System Master Plan Update, and all subsequent water system evaluations and studies, will utilize these new pressure zone designations.

EXISTING AND PROJECTED FUTURE WATER DEMANDS

The City of Tracy currently serves a population of about 96,000 people. Total potable water production in 2020 was 18,687 acre-feet per year (af/yr), not including water treated and wheeled to the Patterson Pass Business Park, which equates to a per capita water use of about 174 gallons per capita per day (gpcd). This per capita water use is significantly lower than the City's historical per capita water use which was as high as 300 gpcd in the early 1980s. Per capita water use was as low as 144 gpcd in 2015 due to extreme drought conditions which resulted in voluntary and mandatory water conservation. The per capita water use has increased somewhat in recent years as water use restrictions have been lifted and customers have resumed more typical water use behavior.

As described in Chapter 4, future water demands for buildout of the City's General Plan were projected based on revised unit water demand factors reflecting recent water use patterns and trends for the City's various land uses, consistency with the Model Water Efficient Landscape Ordinance (MWELO) for landscape irrigation water use and the use of recycled water for landscape irrigation for selected land use designations.

With the planned buildout of the City's sphere of influence (SOI), the City's population is projected to increase to about 186,000 people. At buildout, potable water demands are projected to be about 33,500 af/yr, while recycled water demands (for irrigation of landscaped areas) are projected to be 6,300 af/yr. As noted in the City's 2012 WSMP, the City's future use of recycled water for non-potable uses such as landscape irrigation is key to the reduction (offset) of the City's future potable water demand, and the City's ability to meet future demands using existing and future available water supplies.

A summary of the projected future water demands and water production at 2025 (near-term), at 2040, and at buildout, is provided in Table ES-1.

Table ES-1. Summary of Future Projected Water Production[a,b,c]

Demand Category	2025 (Near Term)		2040		Buildout	
	Potable Water, af/yr	Recycled Water, af/yr	Potable Water, af/yr	Recycled Water, af/yr	Potable Water, af/yr	Recycled Water, af/yr
Future	3,000	900	10,900	4,100	15,700	6,200
Existing - City[d]	17,800	100	17,800	100	17,800	100
Total to be Met by City Water Supply Contracts and Rights	**20,800**	**1,000**	**28,700**	**4,200**	**33,500**	**6,300**
Existing - PPBP Wheeled Water[e]	600	0	600	0	600	0
Total to be Delivered by City Distribution System	**21,400**	**1,000**	**29,300**	**4,200**	**34,100**	**6,300**

(a) Refer to Appendix A for detailed water demand calculations.
(b) Includes unaccounted for water.
(c) Totals rounded to the nearest hundred.
(d) Includes water delivered to existing buildings in the International Park of Commerce (IPC).
(e) Does not include water delivered to existing buildings in IPC.

As the City continues to develop, potable water consumption between customer classes is expected to shift due to changes in the City's projected land use composition. A comparison of the historical average and projected potable water consumption by customer class is shown in Table ES-2. As shown, the residential customer classes are expected to decrease their overall potable water consumption proportion as water use shifts towards non-residential customer classes. This trend is primarily due to large industrial developments such as Cordes Ranch, West Side Industrial, East Side Industrial, UR 3, and Tracy Hills Phase 5, among others.

Table ES-2. Historical and Projected Potable Water Consumption by Customer Class

Customer Class	Historical Average Annual Consumption[a]	Projected Annual Consumption in 2025[b]	Projected Annual Consumption in 2040[b]	Projected Annual Consumption at Buildout[b]
Single Family Residential[c]	60.1%	58.0%	54.0%	53.3%
Multi-Family Residential[d]	6.7%	7.6%	6.9%	8.5%
Residential Subtotal	66.8%	65.6%	60.9%	61.7%
Commercial[e]	15.4%	13.5%	14.2%	14.2%
Industrial	4.9%	9.3%	16.4%	17.6%
Irrigation[f]	12.9%	11.6%	8.4%	6.5%
Total	**100%**	**100%**	**100%**	**100%**

(a) Refer to Table 4-4.
(b) Includes existing and projected future potable demands.
(c) Includes projected future residential demands (excluding irrigation) for Residential - Very Low Density, Residential - Low Density, and Residential - Medium Density land use types.
(d) Includes projected future residential demands (excluding irrigation) for Residential - High Density and Residential - Very High Density land use types.
(e) Includes projected future demands (excluding irrigation) for Commercial, Office, and Institutional land use types.
(f) Includes projected future irrigation demands to be served by potable water. Accounts for planned conversions of irrigation services to recycled water use.

Landscape irrigation water use is projected to be a much smaller proportion of the City's potable water use at buildout because many new development areas will be served by the recycled water system at buildout, and some of the City's existing irrigated areas will be converted to recycled water use.

EXISTING AND PROJECTED FUTURE WATER SUPPLIES

Chapter 5 of this Citywide Water System Master Plan Update describes updates to the City's water supply availability and reliability which have occurred since the completion of the 2012 WSMP and the City's 2015 Urban Water Management Plan (2015 UWMP). The water supply availability and reliability described in Chapter 5 is consistent with the City's 2020 UWMP, which was adopted in June 2021.

Existing Water Supplies

The City currently receives water supplies from the following sources:

- Untreated surface water from the DMC (CVP) (treated at the City's John Jones Water Treatment Plant (JJWTP))
- Untreated surface water from Byron Bethany Irrigation District (BBID) pre-1914 rights (treated at the City's JJWTP)
- Treated surface water from the Stanislaus River via the South County Water Supply Project (SCWSP) (treated and delivered to the City by the SSJID)
- Groundwater pumped from eight groundwater wells located within the City

Since the completion of the 2012 WSMP and the 2015 UWMP, the availability and reliability of the City's water supplies have been impacted by drought conditions and associated unprecedented cutbacks in surface water supply deliveries. Also, in recent years new legislation has been passed which will impact future water use and future water supply availability and reliability, including the Sustainable Groundwater Management Act (SGMA), SB 606 and Assembly Bill 1668 Making Water Conservation a California Way of Life and most recently the 2018 amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment) which was adopted by the State Water Resources Control Board (SWRCB) in December 2018 and restricts the use of flows from the Lower San Joaquin River and its tributaries (the Stanislaus, Tuolumne and Merced Rivers) to improve conditions for fish and wildlife. Specifically, it restricts the use of flows until 40 percent of unimpaired flows are rededicated for water quality and instream fisheries. The Bay-Delta Plan Amendment, depending on its actual implementation, has potential impacts to the water supplies that the City receives from SSJID.

Also, in 2017, new guidelines and procedures went into effect associated with the updated CVP M&I Water Shortage Policy, which base dry year allocations on a contractor's historical use of CVP supplies, not its contractual amount of CVP supplies.

These changed conditions significantly impact the availability and reliability of the City's surface water supplies in dry years (specifically the City's CVP supplies and SSJID supplies).

Future Water Supplies

The City has a projected potable water supply production requirement of 33,500 af/yr for buildout of the City's General Plan. The City will need to develop future water supplies to meet these projected future demands. This will include expansion of its Aquifer Storage and Recovery Program (up to 1,000 af/yr) and implementation of a proposed Recycled Water Exchange Program (up to 7,500 af/yr) to meet its projected future potable water demands. Furthermore, 6,300 af/yr recycled water will be needed to meet landscape irrigation demands at buildout.

The City's Aquifer Storage and Recovery (ASR) Program should be expanded in the future to provide up to 1,000 af/yr of supply. As described in Chapter 5, an evaluation of potential ASR options and operational scenarios should be conducted as additional ASR wells are planned to determine if dedicated SSJID supply pipelines to the ASR wells will be required if the City's ASR permit cannot be modified to allow for other supplies to be injected.

The proposed Recycled Water Exchange Program would provide for the potential for indirect use of its available recycled water through an exchange agreement with the USBR whereby a portion of the City's tertiary-treated wastewater (recycled water) would be discharged to the DMC and a like amount of water (i.e., a one-to-one exchange) could then be diverted from the DMC by the City for treatment at the City's JJWTP for potable use. Such supplies would be 100 percent reliable and would not be subject to drought cutbacks. The project would require development of a project description, NEPA/CEQA review, approval of an exchange agreement, design and construction of a recycled water pipeline that could discharge recycled water to the DMC downstream of the City's JJWTP intake and expansion of the City's wastewater treatment plant. Additional discussion of the pipeline required for the Recycled Water Exchange Program is provided in Chapter 9. If such a project is approved and implemented, the City anticipates that it would initially provide up to 5,900 af/yr of additional potable water supplies to the City, with future expansion as needed to meet future demands.

As shown on Figure ES-1, even with additional supplies, the City may experience water supply shortages in dry years. Table ES-3 provides a summary of the projected water supply needs to meet the single dry year conditions (the most critical hydrologic condition) under the City's projected near-term (2025), future (2040) and buildout demand conditions. As shown, the projected potable water supplies are less than the projected potable water demands, indicating that the City would need to implement its Water Shortage Contingency Plan to reduce water demands and/or develop additional water supplies to meet the projected water demands. Chapter 5 provides a summary of the City's water management strategies and options, including participation in the Phase 2 Los Vaqueros Reservoir Expansion Project, as described in the City's 2020 UWMP.

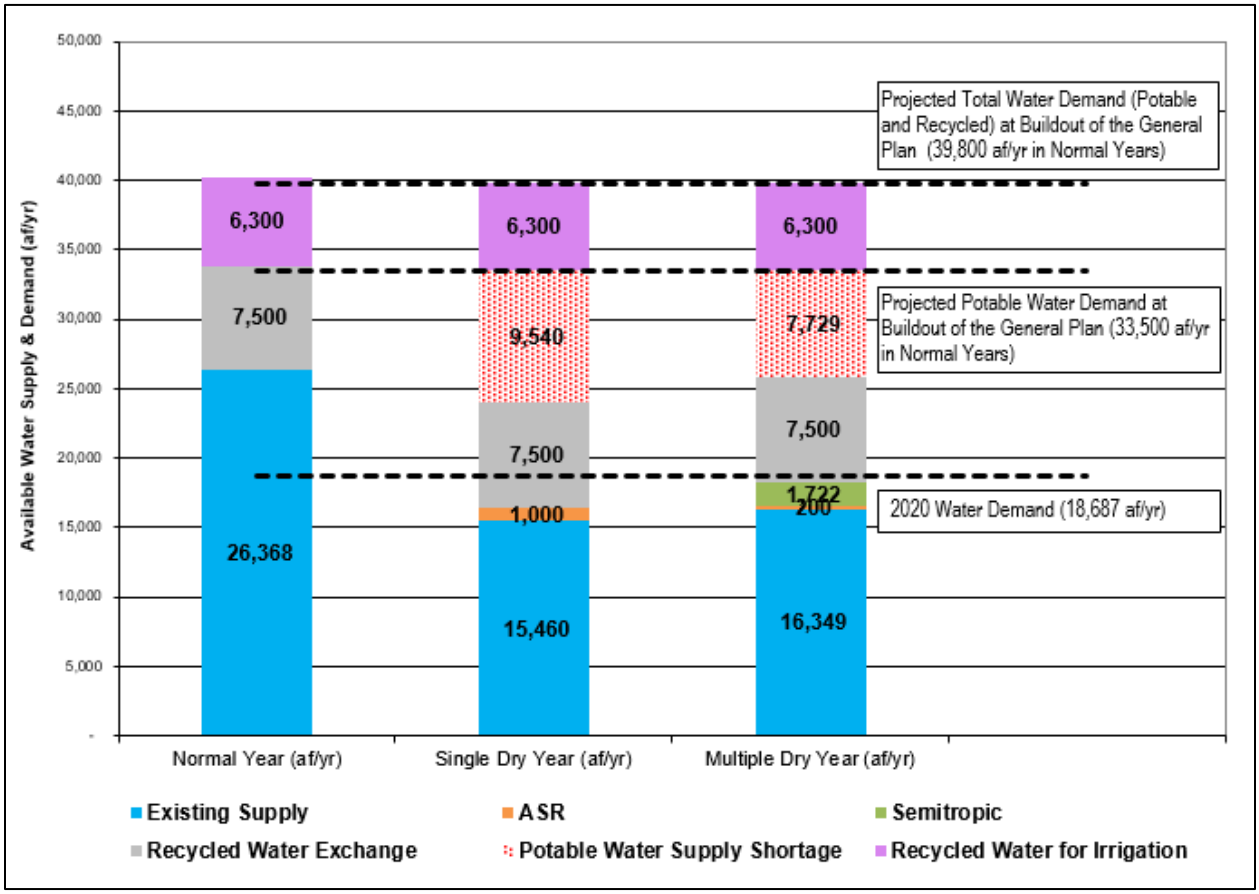


Figure ES-1. Existing and Planned Future Water Supplies vs. Water Demand at Buildout

Table ES-3. Future Water Supply Needs under Single Dry Year Conditions

	Near-Term (2025), af/yr	Future (2040), af/yr	Buildout, af/yr	Comments
Existing Potable Water Supplies				
CVP Surface Water Supplies	1,483	1,483	1,483	Based on 25% of historical use
SSJID Surface Water Supplies	9,974	6,177	6,177	2025 supply includes temporary contract with City of Escalon (which ends in 2025) and a 76% allocation; 2040 and buildout supply assumes a 56% allocation
BBID Pre-1914 (to meet Tracy Hills demand)	800	2,500	3,300	Based on projected potable water demand at Tracy Hills; see Appendix A
Groundwater	4,500	4,500	4,500	Increased from normal year supply of 2,500 af/yr
Total Existing Potable Water Supplies	16,757	14,660	15,460	
Existing Dry Year Water Supplies				
Semitropic Dry Year Supply	0	0	0	Assumed to not be available in Single Dry Years
ASR Dry Year Supply	700	1,000	1,000	Existing capability is 700 af/yr for Well 8; additional ASR wells would be needed for expansion of the ASR program
Total Existing Dry Year Water Supplies	700	1,000	1,000	
Future Potable Water Supplies				
Recycled Water Exchange	0	5,000	7,500	
Total Future Potable Water Supplies	0	5,000	7,500	
Total Potable Water Supplies	**17,457**	**20,660**	**23,960**	
Potable Water Demand	**20,800**	**28,700**	**33,500**	See Table 4-16 in Chapter 4
Recycled Water				
Recycled Water Demand for Landscape Irrigation	**1,000**	**4,200**	**6,300**	See Table 4-16 in Chapter 4
Total Recycled Water Needed, af/yr	1,000	9,200	13,800	As needed to meet needs for Recycled Water Exchange and Landscape Irrigation
Total Recycled Water Needed (average day), mgd	0.9	8.2	12.3	

Subsequent revisions to the projected potable water demand and/or the water supply availability and reliability assumptions may change the required quantities and timing of the proposed Recycled Water Exchange Program. However, even if the required quantities or timing are modified in the future, the direct use of recycled water for landscape irrigation demands and indirect use of recycled water as part of the proposed Recycled Water Exchange Program will be critical components of the City's future water supply portfolio.

The planned future direct and indirect use of recycled water will also require an expansion of the City's Wastewater Treatment Plant (WWTP) to produce adequate quantities of recycled water to meet both the future Recycled Water Exchange Program needs (indirect use), as well as the landscape irrigation demands (direct use), at buildout.

It should also be noted that supply availability and reliability, and actual water demands, may change in the future. As such, the City may need to acquire additional potable water supplies in the future. The City will need to closely track actual potable water demands and supply availability and reliability as future service areas are approved and developed to determine if existing and future supplies are adequate and/or if and when additional potable or recycled water supplies may be required.

EVALUATION OF EXISTING AND FUTURE POTABLE WATER SYSTEM

Chapters 7 and 8 of this Citywide Water System Master Plan Update identify the improvements necessary to eliminate existing deficiencies and support the City's projected future potable water demands, respectively. Recommended improvements are based on evaluations of the existing and future (2025 and buildout) potable water system's treatment, storage, and pumping capacities, as well as its ability to meet recommended performance and operational criteria under maximum day demand plus fire flow and peak hour demand scenarios.

Facility improvements are identified at a Master Plan level and do not necessarily include all required on-site infrastructure nor constitute design of improvements. Subsequent detailed design is required to determine the sizes and locations of the proposed improvements. Further, the hydraulic model is not an "all pipes" model (i.e., not all smaller diameter pipelines are included), so the hydraulic simulations performed may not identify all necessary water system improvements. West Yost recommends conducting additional hydraulic evaluations as development details become available.

The following recommendations exclude non-backbone facilities that only serve a specific development, instead focusing on backbone facility improvements with more widespread system benefit. These shared facilities are designated program facilities.

Existing Potable Water System

The City's existing potable water system includes the following major facilities: JJWTP, eight groundwater wells, clearwells and storage tanks, booster pump stations, pressure regulating stations, and transmission and distribution system pipelines. The City's existing distribution system is divided into four pressure zones. Significant new infrastructure has been constructed in recent years to serve new development projects, including new pump stations at the JJWTP to serve Pressure Zones 3 and 4, a new storage tank and pump station in the Cordes Ranch area, and a new storage tank and pump station in Tracy Hills.

Recommendations for the existing potable water distribution system are shown on Figure ES-2 and described below. These existing system improvements are recommended based on existing water demands, and are not triggered by future new development. The existing water system infrastructure in the areas listed below is insufficient to meet the fire flow requirements based on existing land use and water demands. As such, planning and design for these improvements should be prioritized.

Pipeline Improvements

The following pipeline improvements are recommended:

- Improvement #1:
  - Replace the existing pipelines in 20th Street between Bessie Avenue and Parker Avenue, Wall Street between Lowell Avenue and 20th Street, Emerson Avenue between Bessie Avenue and Holly Drive, Court Drive between Whittier Avenue and Lowell Avenue, and Lowell Avenue between Parker Avenue and Holly Drive with approximately 6,000 linear feet (lf) of new 8-inch diameter pipelines.
- Improvement #2:
  - Install approximately 515 lf of 12-inch diameter pipeline in Ninth Street between School Street and Tenth Street.
- Improvement #3:
  - Replace approximately 485 lf of existing 4-inch diameter pipeline in Tracy Boulevard north of Mount Diablo Avenue with new 12-inch diameter pipeline.

2025 Potable Water System

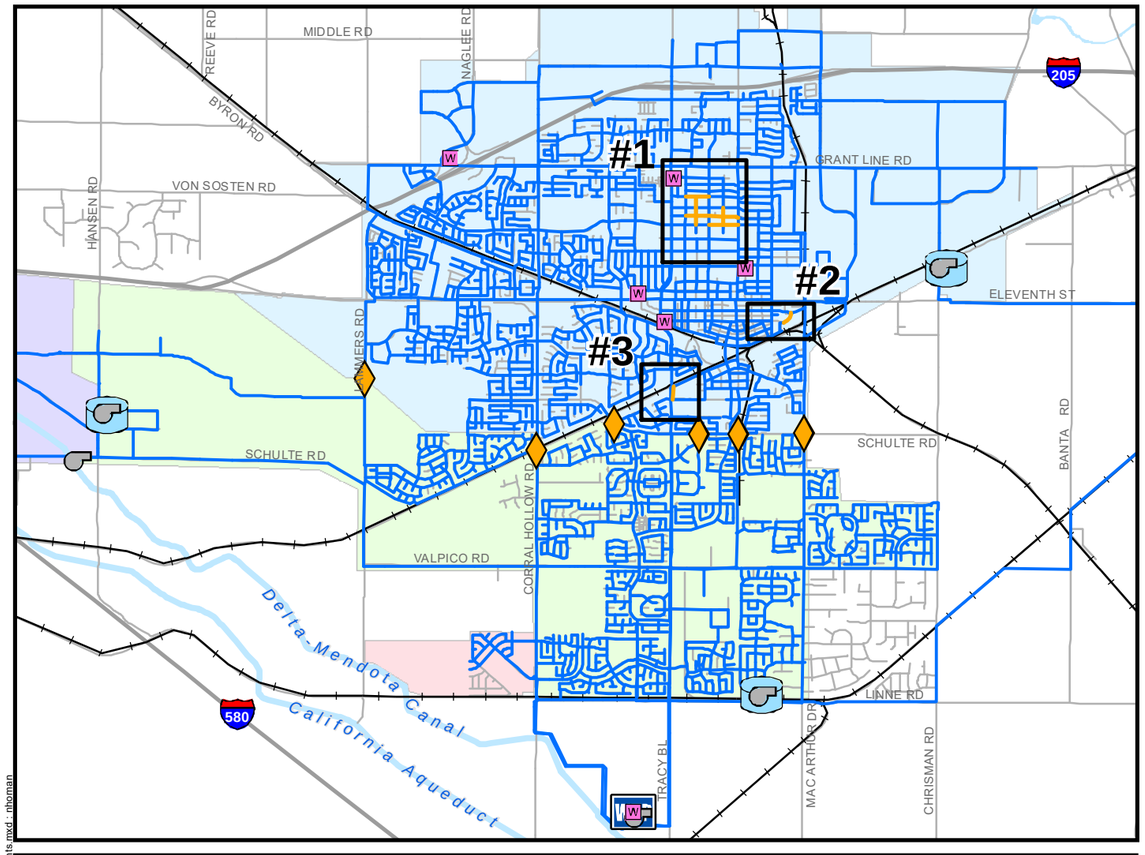
Program facility recommendations for the 2025 potable water system are shown on Figure ES-3 and described below. A complete listing of recommended potable water system improvements (both program and non-program) to serve projected 2025 potable water demands is provided in Chapter 8 along with recommendations for their timing.

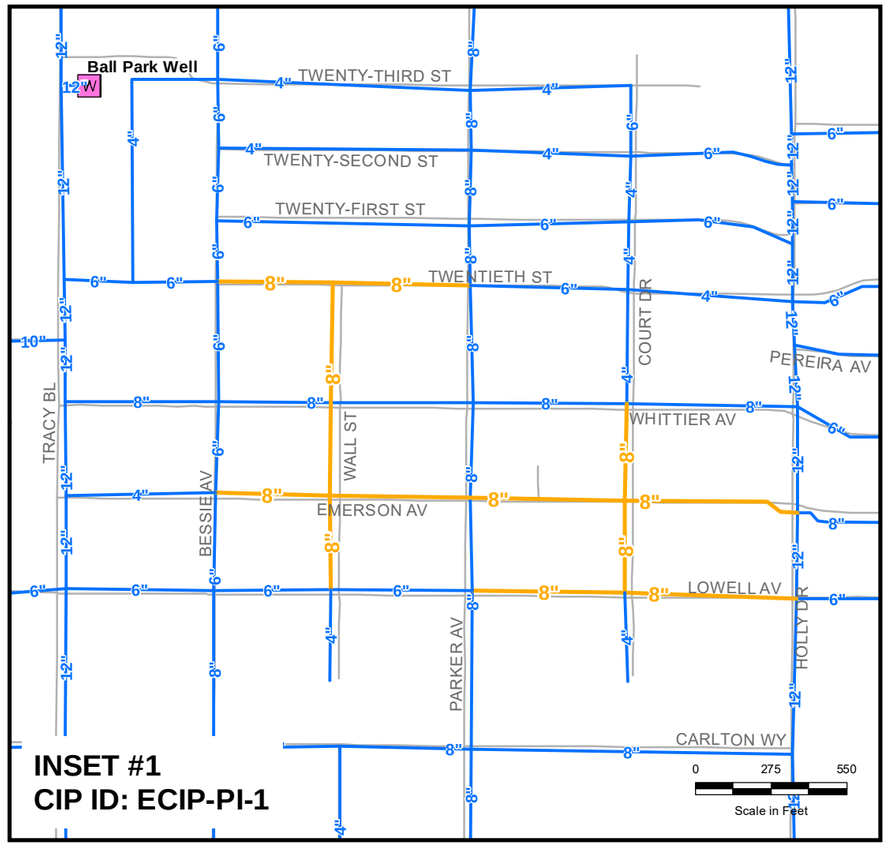
Pipeline Improvements

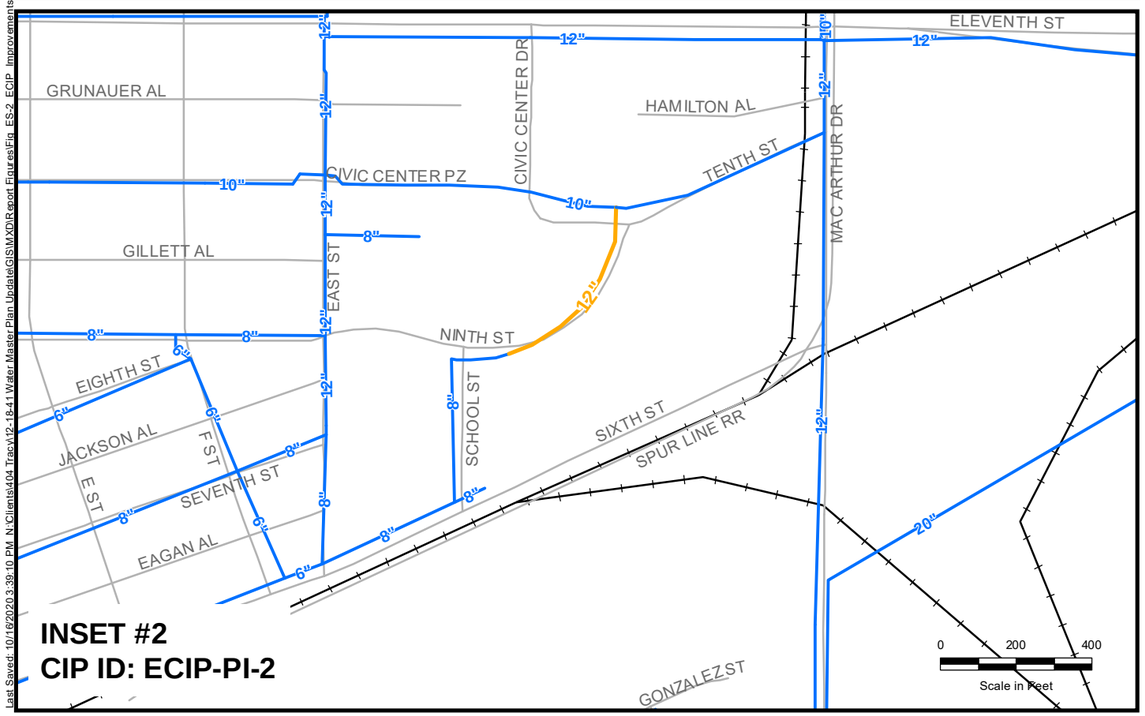
- To serve 2025 potable water demands, replace existing pipelines in Sixth Street, Tracy Boulevard, and Eleventh Street with approximately 1,390 linear feet of new 18-inch and 24-inch diameter pipelines.

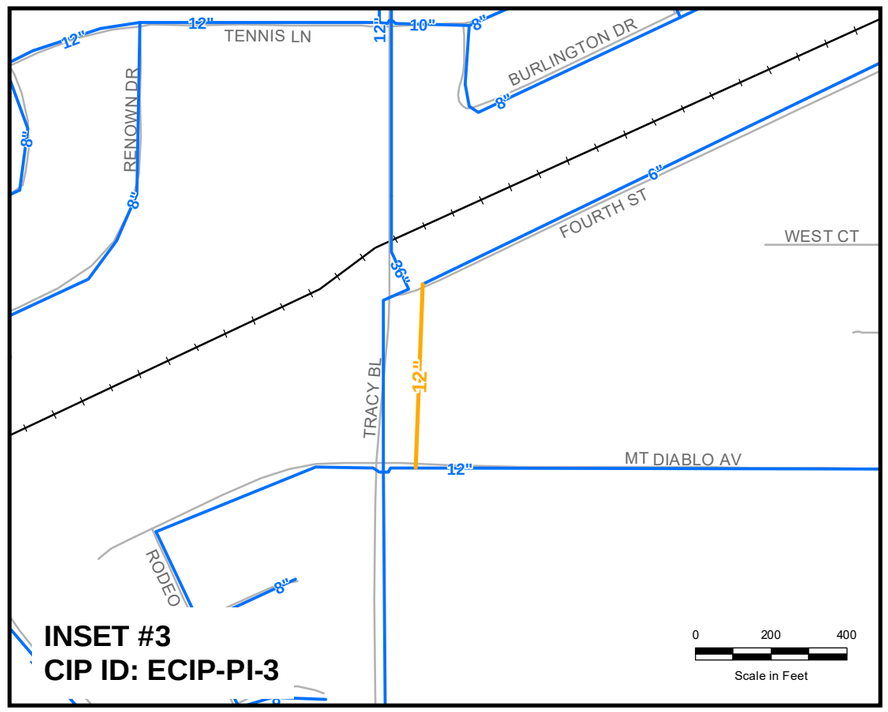
New Potable Water Pipelines

- To serve 2025 potable water demands, install approximately 43,010 lf of new pipelines ranging in diameter from 12 to 24 inches.









Symbology

- Existing Pipeline
- Pipeline Improvement
- Pressure Regulating Station
- Booster Pump Station
- Groundwater Well
- Storage Tank
- WTP John Jones Water Treatment Plant

Pressure Zone

- Zone 1
- Zone 2
- Zone 3 (IPC/PPBP)
- Ellis Reduced Zone

Notes:

1. The City's existing hydraulic model is not an all pipes model. Some pipes which are not hydraulically significant were excluded from the model.

Figure ES-2

Recommended Existing Potable Water System Improvements

City of Tracy
Water System Master Plan Update

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BCIP-T-WS
BCIP-PS-WSZ1&2
BCIP-PRS-WS
BCIP-W-WS
BCIP-W-WA
BCIP-W-LP
BCIP-W-EL
NCIP-PRV-1
NCIP-PRV-2
BCIP-PRV-AV
BCIP-PRV-C
Equip wells with ammonia addition
From Mossdale BPS
BETHANY RD
MIDDLE RD
VON SOSTEN RD
BYRON RD
GRANT LINE RD
ELEVENTH ST
LOVELY RD
SCHULTE RD
VALPICO RD
MOUNTAIN HOUSE PK
REEVE RD
LAMMERS RD
NAGLEE RD
HOLLY DR
HANSEN RD
SCHULTE CT
CORRAL HOLLOW RD
TRACY BL
BANTA RD
BIRD RD
IMAC ARTHUR DR
Old River
California Aqueduct
Delta-Mendota Canal
580
205
0 2,750 5,500
Scale in Feet
N

NCIP-PI-1&2
ELEVENTH ST
TRACY BL
24"
18"
Well #8

JJWTP Buildout Program Facilities
BCIP-T-CW3
BCIP-PS-Z3
20"
BCIP-JJWTP (10 mgd expansion to 40 mgd treatment capacity).

Notes:
1. The City's hydraulic model is not an all pipes model. Some pipes which are not hydraulically significant were excluded from the model.
2. Jack and bore pipeline projects are not shown, but jack and bore is required for canal, railroad, or major highway crossings.
3. Install SCADA system monitoring of flows and pressures at each new facility.
4. Install on-site backup power at each new pumping facility.
5. Only existing and program facilities are shown.

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Symbology

Proposed Buildout Program Facilities
- Buildout Pressure Regulating Station
- Buildout Pressure Reducing Valve
- Buildout Booster Pump Station
- Buildout Groundwater Well
- Buildout Storage Tank
- Buildout System Pipeline
- SCADA System Improvement

Proposed 2025 Facilities
- 2025 Pressure Reducing Valve
- 2025 System Pipeline
- 2025 Pipeline CIP

Existing System Facilities
- Existing Pressure Regulating Station
- Existing Pressure Reducing Valve
- Existing Booster Pump Station
- Existing Groundwater Well
- Existing Storage Tank
- John Jones Water Treatment Plant
- Existing System Pipeline
- Proposed Existing System Pipeline CIP

Pressure Zone
- Zone 1
- Zone 2
- Zone 3
- Ellis Reduced Zone
- Zone 4
- Zone 5
- Zone 6

TRACY

WEST YOST ASSOCIATES

Figure ES-3

Recommended Future Potable Water System Program Improvements

City of Tracy
Water System Master Plan Update

Interconnections

- Install PRVs at Schulte Road and Bud Lyons Way and at Schulte Road and Pavillion Parkway before the transmission main in Schulte Road is re-zoned to Zone 3.

Re-zoning

- Re-zone the existing transmission mains in Lammers Road, Schulte Road, and Hansen Road from Zone 2 to Zone 3 as described in Appendix D.

Groundwater Wells

- Provide ammonia addition for existing City wells (Lincoln Well, Lewis Manor Well, Park & Ride Well and Ball Park Well) (as noted below under Buildout System Improvements, all future wells are also recommended to be equipped with ammonia addition).
- A feasibility study is recommended to develop an implementation plan for future ASR expansion.

Buildout Potable Water System

Program facility recommendations for the buildout potable water system are shown on Figure ES-3 and described below. A complete listing of recommended potable water system improvements (both program and non-program) to serve projected buildout potable water demands is provided in Chapter 8 along with recommendations for their timing.

Storage Reservoirs

Planning and design of these new storage facilities should be conducted so that the proposed facilities are constructed and operational in time to serve their respective service areas (e.g., Westside, Zone 5 or Zone 6). Because of the additional operational flexibility that Clearwell #3 would provide, it is recommended that Clearwell #3 be constructed as soon as possible. As noted above, no additional storage facilities are required by 2025, but it is recommended that Clearwell #3 be constructed by no later than 2030.

- Westside Tank: Install a new storage tank with a minimum active storage capacity of 1.0 million gallons (MG).
- JJWTP Clearwell #3: Install a new clearwell with a minimum active storage capacity of 1.0 MG to provide storage for Zone 3.

Groundwater Wells

Planning and design of these new groundwater wells should be phased so that the City's ASR Program can be expanded as needed to meet the City's water supply needs, particularly in dry years. A feasibility study for the expansion of the City's ASR Program is included under the 2025 Potable Water System recommendations listed above.

- Westside: Install a new ASR well with a minimum firm pumping capacity of 2,500 gallons per minute (gpm).
- Wainwright: Install a new ASR well with a minimum firm pumping capacity of 2,500 gpm.
- Larsen Park: Install a new ASR well with a minimum firm pumping capacity of 2,500 gpm.
- Ellis: Install a new ASR well with a minimum firm pumping capacity of 1,000 gpm.

Booster Pump Stations

Planning and design of these new booster pumping facilities should be coordinated with the construction of other related facilities (e.g., associated storage tanks) and the timing of new development.

- Zone 3 BPS (JJWTP): Install additional Zone 3 booster pumps at the JJWTP with a minimum firm pumping capacity of 1,500 gpm.
- Westside Zone 1 Tank: Install a new booster pump station with a minimum firm pumping capacity of 4,500 gpm.
- Westside Zone 2 Tank: Install a new booster pump station with a minimum firm pumping capacity of 2,400 gpm.

New Potable Water Pipelines

Planning and design of these new pipelines should be coordinated with the timing of new development.

- To serve buildout potable water demands, install approximately 131,280 lf of new pipelines (in addition to the proposed 2025 pipelines) ranging in diameter from 12 to 20 inches.

Interconnections

Planning and design of these new interconnections should be coordinated with the timing of new development in the respective pressure zones.

- Install the following interconnections between pressure zones to provide supply during peak demands and/or emergency conditions:
  - Westside Pressure Regulating Station (PRS) (from Zone 2 into Zone 1)
  - Avenues Pressure Reducing Valve (PRV) (from Ellis Reduced Zone into Zone 2)
- To provide adequate pressure to the Plan C area and prevent the accumulation of stagnant water in dead-end mains, installation of six (6) PRVs is recommended before the Plan C re-zoning occurs (to be funded through Plan C).

Re-zoning

Planning and design of this rezoning should be coordinated with the timing of the new Zone 3 pipeline from the JJWTP.

- Re-zone the Plan C area from Zone 2 to Zone 3 (to be funded through Plan C).

System Control and Data Acquisition (SCADA) System and Backup Power

Planning and design of the recommended SCADA system improvements and backup power should be prioritized and completed as soon as possible, as these improvements will improve operational flexibility and reliability.

- Install SCADA system monitoring of flows and pressures at PRS #1-#6 to provide operators with additional understanding and flexibility in system operations.
- Add remote operation of Well 8 from the SCADA system to provide additional operational flexibility.
- Install SCADA system monitoring of flows and pressures at each new water supply facility to provide operators with real-time system data and flexibility in system operations.
- Install on-site backup power to any proposed buildout system pumping facility to improve supply reliability.

JJWTP Expansion

- A future additional 10 mgd expansion of the JJWTP (for a total treatment capacity of 40 mgd) is recommended to provide the City with additional water treatment capacity, as well as operational flexibility and reliability. The expansion would also include a new administration/maintenance building to accommodate future staffing needs and maintenance activities.

Participation in Phase 2 Los Vaqueros Reservoir Expansion Project

- The City's participation in the Phase 2 Los Vaqueros Reservoir Expansion Project would increase the City's water supply reliability by providing storage of supplies for use in dry years.
- The estimated cost for 5,000 acre-feet of storage for the City will be approximately $10 million plus an additional $1.5 million for implementation and will be shared by existing rate payers and new development.

Participation in the B.F. Sisk Dam Raise & Reservoir Expansion Project

- The City's participation in the B.F. Sisk Dam Raise & Reservoir Expansion Project would increase the City's water supply reliability by providing storage of supplies for use in dry years.
- The estimated cost for 5,000 acre-feet of storage for the City will be approximately $38 million and will be shared by existing rate payers and new development.

Water Master Plan Updates

- Regular updates of this Citywide Water System Master Plan are recommended to evaluate potable water and recycled water infrastructure needs to reflect any changes in future development plans, water use trends and patterns, and water supply availability and reliability, as well as new regulations and operational needs as new potable water and recycled water system infrastructure is constructed. It is recommended that updates be prepared at least once every 10 years, or more often if changing conditions warrant more frequent updates. For purposes of this Citywide Water System Master Plan Update, three future updates are planned.

EVALUATION OF FUTURE RECYCLED WATER SYSTEM

Chapter 9 of this Citywide Water System Master Plan Update identifies the improvements necessary to support the City's projected future recycled water demands and the recycled water exchange agreement. Recommended improvements are based on evaluations of the future (2025 and buildout) recycled water system's treatment, storage, and pumping capacities, as well as its ability to meet recommended performance and operational criteria under maximum day demand plus fill and peak hour demand scenarios.

Recycled water facility improvements are identified at a Master Plan level and do not necessarily include all required on-site infrastructure nor constitute design of improvements. Subsequent detailed design is required to determine the sizes and locations of the proposed improvements. Further, the recycled water hydraulic model is not an "all pipes" model (i.e., not all smaller diameter pipelines are included), so the hydraulic simulations performed may not identify all necessary system improvements. West Yost recommends conducting additional hydraulic evaluations as development details become available.

The following recommendations exclude non-backbone facilities that only serve a specific development, instead focusing on backbone facility improvements with more widespread system benefit. These shared facilities are designated program facilities.

2025 Recycled Water System

Program facility recommendations for the 2025 recycled water system are shown on Figure ES-4 and described below. A complete listing of recommended recycled water system improvements (both program and non-program) to serve projected 2025 recycled water demands is provided in Chapter 9 along with recommendations for their timing.

Booster Pump Stations

- Zone C Booster Pump Station (BPS): Install a new booster pump station with a minimum pumping capacity of 1,700 gpm.

New Recycled Water Pipelines

- To serve 2025 recycled water demands, install approximately 11,370 lf of new pipelines ranging in diameter from 8 to 30 inches.
- To deliver recycled water to the DMC as part of the City's planned recycled water exchange program, install approximately 23,680 lf of new, 30-inch diameter pipeline (as described above, the exchange program is an essential part of the City's projected future water supply portfolio and should be implemented as soon as possible).

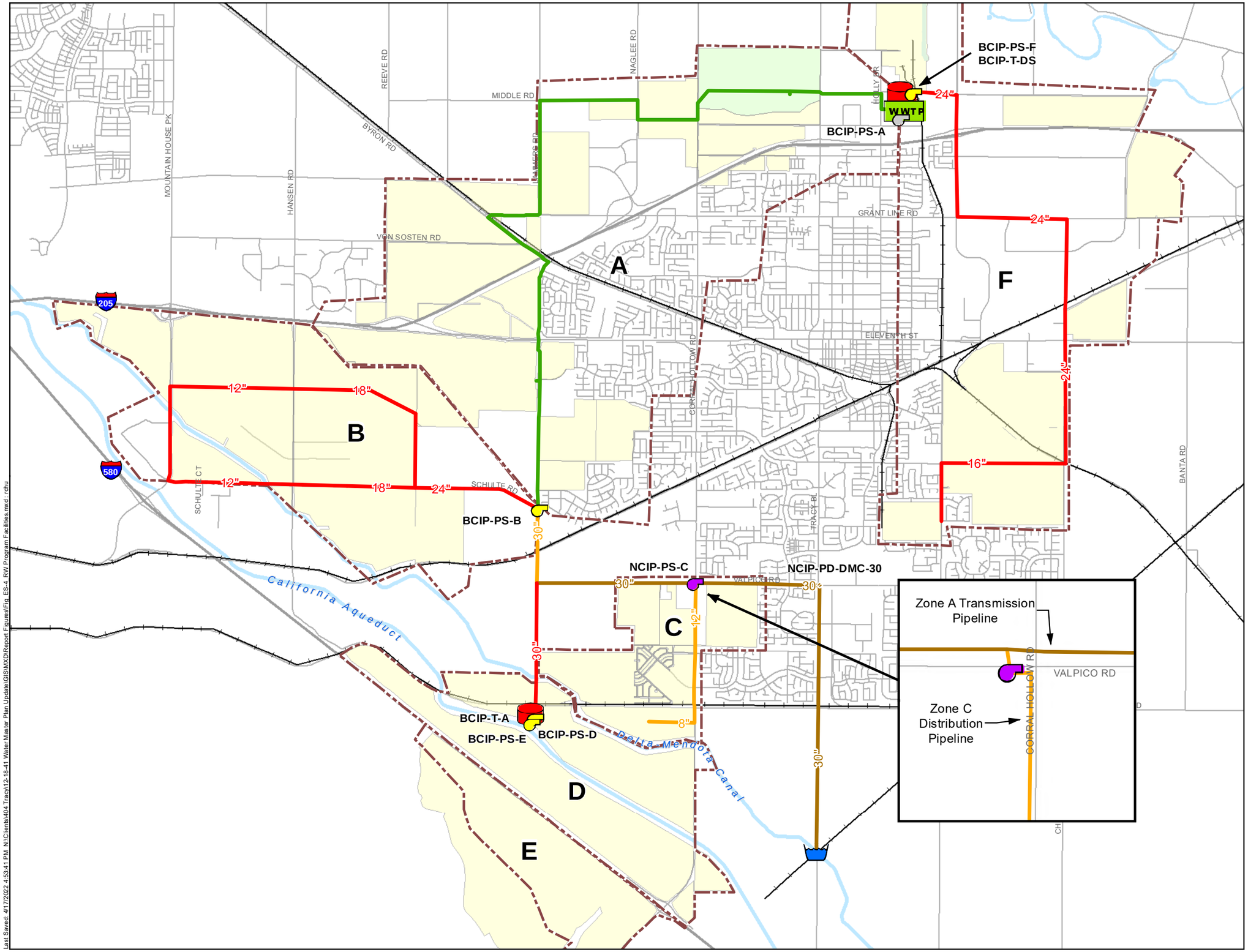
Buildout Recycled Water System

Program facility recommendations for the buildout recycled water system are shown on Figure ES-4 and described below. A complete listing of recommended recycled water system improvements (both program and non-program) to serve projected buildout recycled water demands is provided in Chapter 9 along with recommendations for their timing.

As described in Chapter 9, planning and design for these improvements should be conducted so that these improvements can be constructed and operational as soon as possible, as funding is available, so that recycled water supplies can be used to meet landscape irrigation and other non-potable water demands to minimize the use of potable water supplies for these uses.

Storage Reservoirs

- Zone A Tank: Install an above ground, welded steel storage tank with a minimum active storage capacity of 5.7 MG.
- WWTP Diurnal Tank: Install a partially buried, prestressed concrete diurnal storage tank at the WWTP with a minimum active storage capacity of 2.3 MG; the need for this storage will depend on WWTP diurnal flow patterns, and it is recommended that the City re-evaluate the required diurnal storage at the WWTP by performing a diurnal flow study in 2040.



Symbology

Proposed Buildout Program Facilities

- Buildout Booster Pump Station
- Buidlout Storage Tank
- Buildout System Pipeline

Proposed 2025 Program Facilities

- 2025 Booster Pump Station
- 2025 System Pipeline
- Delta-Mendota Canal Pipeline
- Delta-Mendota Canal Discharge Point

Existing System Facilities

- Existing Booster Pump Station
- WWTP Wastewater Treatment Plant
- Existing System Pipeline
- Legacy Fields
- Future Recycled Water Use Area
- Recycled Water Pressure Zone

Notes:

1. The City's hydraulic model is not an all pipes model. Some pipes which are not hydraulically significant were excluded from the model.
2. Jack and bore pipeline projects are not shown, but jack and bore is required for canal, railroad, or major highway crossings.
3. Install SCADA system monitoring of flows and pressures at each new facility.
4. Only existing and program facilities are shown.

TRACY

WEST YOST ASSOCIATES

Figure ES-4

Recommended Future Recycled Water System Program Improvements

City of Tracy
Water System Master Plan Update

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Booster Pump Stations

- Zone A BPS Expansion: Install additional booster pumps with a minimum pumping capacity of 3,472 gpm.
- Zone B: Install a new booster pump station with a minimum pumping capacity of 5,780 gpm.
- Zone D BPS: Install a new booster pump station with a minimum pumping capacity of 2,700 gpm.
- Zone E BPS: Install a new booster pump station with a minimum pumping capacity of 2,000 gpm.
- Zone F: Install a new booster pump station with a minimum pumping capacity of 4,400 gpm.

New Recycled Water Pipelines

- To serve buildout recycled water demands, install approximately 42,790 lf of new pipelines (in addition to the proposed 2025 pipelines) ranging in diameter from 16 to 30 inches.

SCADA System

- Install SCADA system monitoring of flows and pressures at each new water supply facility to provide operators with real-time system data and flexibility in system operations.

RECOMMENDED CAPITAL IMPROVEMENT PROGRAM

Chapter 10 of this Citywide Water System Master Plan Update presents the recommended Capital Improvement Program (CIP) for the City's existing and future (2025 and buildout) potable water system and proposed future (2025 and buildout) recycled water system to support the City's projected buildout potable water and recycled water demands, respectively. These costs are summarized in Table ES-4. A detailed breakdown of the costs is provided in Chapter 10.

Costs exclude non-backbone facilities that only serve a specific development, as costs associated with those facilities will be borne solely by the corresponding developers. Table ES-4 only includes costs for program facilities.

Table ES-4. Summary of Probable Construction Costs for Recommended Potable and Recycled Water System Improvements[a]

Recommended Improvements	CIP Cost (includes mark-ups)[b,c]
Potable Water System	
Existing Potable Water System CIP (see Table 10-1)	$1,960,000
2025 Potable Water System CIP (see Table 10-2)	$21,988,000
Buildout Potable Water System CIP (see Table 10-3)[d]	$211,916,000
Previous Water Treatment Plant Expansion Buy-in Cost[e]	$27,000,000
Total Potable Water System CIP	**$262,864,000**
Recycled Water System	
2025 Recycled Water System CIP (see Table 10-4)	$27,924,000
Buildout Recycled Water System CIP (see Table 10-5)	$65,528,000
Total Recycled Water System CIP	**$93,452,000**

(a) Includes only costs for program facilities; improvements benefiting only specific developments are excluded.
(b) Estimated construction costs do not reflect an adjustment to account for the current economic bidding climate.
(c) CIP cost includes mark-ups equal to 40 percent (General Contingency: 15 percent; Design and Planning: 10 percent; Construction Management: 10 percent; and Program Administration: 5 percent) and are based on 2020 dollars.
(d) Includes cost for participation in Phase 2 Los Vaqueros Reservoir Expansion Project and the B.F. Sisk Dam Raise & Reservoir Expansion Project which is to be shared between existing rate payers and new development.
(e) The JJWTP was last expanded in 2008. The cost presented in this line item represents the buy-in cost for the portion of the expanded capacity to be utilized by new developments (estimated to be 9 mgd). The cost for the recommended additional 10 mgd expansion of the JJWTP is included in the Buildout Potable Water System CIP (see Table 10-3).

CHAPTER 1
Introduction

1.1 CITYWIDE WATER SYSTEM MASTER PLAN UPDATE PURPOSE

The purpose of this Citywide Water System Master Plan Update for the City of Tracy (City) is to provide an evaluation of the required backbone potable water and recycled water system facilities required to serve existing and future needs. The City's last Citywide Water System Master Plan was completed in 2012 and was based on projected land uses included in the City's 2011 General Plan. Since that time, significant new residential and commercial development has occurred in the City (including the International Park of Commerce within the Cordes Ranch Specific Plan area, Tracy Ellis, Tracy Hills and numerous smaller projects) and planning for future developments has been refined. Also, during that same time, the State endured five years of drought starting in 2012, including the driest four consecutive years in California history. These unprecedented conditions led to statewide mandated water conservation, significant surface water supply reductions and curtailments and legislation establishing new water efficiency standards.

All of these factors have led to a need to reevaluate the City's potable water and recycled water needs, the projected availability and reliability of the City's water supplies and the required water system infrastructure improvements to ensure a safe and reliable water supply for the City's residents and businesses.

1.2 WATER MASTER PLAN OBJECTIVES

The objectives of this Citywide Water System Master Plan Update are to:

- Evaluate existing water demands to understand current water use patterns and trends and project future water demands for near-term (2025), future (2040) and General Plan buildout conditions.
- Provide an updated evaluation of the availability and reliability of the City's existing and future water supplies and their ability to meet existing and future water demands considering recent changes in projected supply reliability.
- Review and refine performance and operational criteria under which the potable and recycled water systems will be analyzed and recommendations for future facilities will be formulated.
- Evaluate the need for new backbone potable water facilities (including pipelines, storage facilities and pumping facilities) to serve buildout of the City's General Plan.
- Evaluate the need for new backbone recycled water facilities (including pipelines, storage facilities and pumping facilities) to serve buildout of the City's General Plan.
- Develop a capital improvement program for recommended potable and recycled water system facilities.

1.3 KEY CHANGES FROM THE 2012 CITYWIDE WATER SYSTEM MASTER PLAN

This Cityside Water System Master Plan Update incorporates and considers several changed conditions, new water system facilities, and new water supply opportunities from what was included in the 2012 Citywide Water System Master Plan (WSMP). A summary of these is provided below:

- Changes in Projected Land Use: Compared to the projected land use in 2012 Citywide Water System Master Plan, there has been a significant shift in the City's projected land use composition towards residential development and away from commercial and industrial development. However, when compared to the City's historical and existing land uses, which were primarily residential, the projected land uses for new development are more heavily skewed to non-residential uses (with almost 60 percent of the projected acres of new development being non-residential uses). The future industrial, commercial, and retail growth anticipated in the City's Sphere of Influence is reflective of the City's goal to bring jobs and economic growth and improve the City's jobs-housing balance (see Chapter 3 for additional information).
- Reduction in Unit Water Demands: Due to changes in water use trends and habits resulting from improved water use efficiency, unit water demand factors have been reduced for most land use categories (see Chapter 4 for additional information).
- Reduction in Maximum Day and Peak Hour Demand Factors: Due to changes in water use trends and habits from improved water use efficiency, maximum day and peak hour demand factors have been reduced (see Chapter 4 for additional information).
- Changes in Recycled Water System Planning: Previously, the City was considering implementing the proposed Gateway Exchange Program, under which recycled water service would be extended to most of the existing parks and large irrigated areas in the City to offset the potable water demands from the Gateway development (now called Westside). The Gateway Exchange Program is no longer being considered, and it is projected that only a few existing parks and irrigated areas will receive recycled water supply. Expansion of the recycled water system will focus on extending service to newly developed areas (see Chapters 4 and 9 for additional information).
- Reduction in Surface Water Supply Reliability: Due to unprecedented drought conditions from 2011 through 2017 and new flow restrictions resulting from the 2018 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary, projected reliabilities of surface water supplies from the Central Valley Project (CVP) and South San Joaquin Irrigation District (SSJID) have been significantly reduced, particularly in dry years. The City has entered into discussions with the Contra Costa Water District and the San Luis & Delta-Mendota Water Authority to explore the City's potential participation in the Phase 2 Los Vaqueros Reservoir Expansion Project to increase the City's water supply reliability by providing storage of supplies for use in dry years (see Chapter 5 for additional information).

- Proposed Recycled Water Exchange Agreement: The City is evaluating the potential for indirect reuse of its available recycled water through an exchange agreement with the United States Bureau of Reclamation (USBR) whereby a portion of the City's tertiary-treated wastewater (recycled water) would be discharged to the Delta Mendota Canal (DMC) and a like amount of water (i.e., a one-to-one exchange) could then be diverted from the DMC by the City for treatment at the City's John Jones Water Treatment Plant (JJWTP) for potable use. Such supplies would be 100 percent reliable and would not be subject to drought cutbacks. With the potential reduction in reliability of the City's surface water supplies from the CVP and SSJID during dry years, this proposed recycled water exchange agreement will be a critical component of the City's future water supply portfolio (see Chapter 5 for additional information).
- Reduction in Emergency Storage Requirement: The 2012 WSMP used an emergency storage volume requirement of two (2) times the average day demand. After reviewing emergency storage criteria for other similar water systems within the region, and taking into account the City's redundant sources of supply (CVP, SSJID, and groundwater), it is recommended that the City reduce the minimum quantity of emergency storage volume required to 1.5 times the average day demand for this Citywide WSMP Water System Master Plan Update (see Chapter 6 for additional information).
- Addition of New Water System Facilities: Several new water system facilities have been recently completed which provide for added water system capabilities. These include the Cordes water storage tank and pump station, the Tracy Hills water storage tank and pump station (nearing completion as of September 2021), new pump stations at the City's JJWTP to serve the City's Pressure Zone 3 and initial phases of the Tracy Hills development, and a recycled water pump station and pipeline on the west side of the City to distribute recycled water supplies from the City's Wastewater Treatment Plant to recycled water users on the western side of the City (see Chapters 7 and 9 for additional information).
- Renaming of Potable Water Pressure Zones: To minimize confusion when referring to the City's primary potable water system pressure zones, the potable water system pressure zones have been renamed as follows:
  - Pressure Zone 1 – no change
  - Pressure Zone 2 – no change
  - City-side Pressure Zone 3 – now referred to as Pressure Zone 3
  - Tracy Hills Pressure Zone 3 – now referred to as Pressure Zone 4
  - Tracy Hills Pressure Zone 4 – now referred to as Pressure Zone 5
  - Tracy Hills Pressure Zone 5 – now referred to as Pressure Zone 6

  The remainder of this Citywide Water System Master Plan Update, and all subsequent water system evaluations and studies, will utilize these new pressure zone designations.

1.4 REPORT ORGANIZATION

This Citywide Water System Master Plan Update is organized into the following chapters:

Chapter 1:	Introduction
Chapter 2:	Water Supply and Infrastructure System Objectives, Goals and Recommendations
Chapter 3:	Land Use Assumptions
Chapter 4:	Existing and Future Water Demands
Chapter 5:	Existing and Future Water Supplies
Chapter 6:	System Performance and Operational Criteria
Chapter 7:	Existing Potable Water System Evaluation
Chapter 8:	Future Potable Water System Evaluation
Chapter 9:	Recycled Water System Evaluation
Chapter 10:	Recommended Capital Improvement Program

The following appendices to this Citywide Water System Master Plan Update contain additional technical information, assumptions and calculations:

Appendix A:	Land Use Assumptions and Projected Water Demands for New Developments
Appendix B:	JJWTP Expansion Project Site Plan, Process Schematic, and Hydraulic Profile
Appendix C:	Existing Potable Water System Hydraulic Grade Schematic
Appendix D:	Lammers Road and Hood Way Design Recommendation Technical Memoranda
Appendix E:	Cost Estimating Assumptions
Appendix F:	Proposed Future Potable Water System Facility Improvements
Appendix G:	Proposed Future Recycled Water System Facility Improvements

1.5 ACKNOWLEDGEMENTS

The development of this Citywide Water System Master Plan Update would not have been possible without the focused involvement and assistance of City staff. In particular, the following staff provided comprehensive information, significant input and important insights throughout development of this Citywide Water System Master Plan Update:

- Robert Armijo, City Engineer/Assistant Director of Development Services
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- Aleck Cheney, Engineer
- Veronica Child, Management Analyst II
- Bill Dean, Assistant Director of Development Services
- Lea Emmons, Water Treatment Plant Superintendent
- Vicki Lombardo, Senior Planner
- Ilene Macintire, Associate Civil Engineer
- Andrew Malik, Director of Development Services
- Stephanie Reyna-Hiestand, Water Resources Analyst
- Lemar Saffi, Assistant Engineer
- Karin Schnaider, Director of Finance
- Don Scholl, Director of Public Works
- Kul Sharma, Director of Utilities
- Paul Verma, Senior Civil Engineer
  (Project Manager for the Citywide Water System Master Plan Update)
- Thomas Ward, Construction Inspector

CHAPTER 2
Water Supply and Infrastructure System Objectives, Goals, and Recommendations

2.1 OVERVIEW

The recent California drought conditions, environmental restrictions in the San Joaquin Delta, increasing population, and limited water resources are serious problems affecting water agencies statewide. Many water agencies have adopted ordinances and taken other measures to ensure a reliable water supply for their customers. Unfortunately, the challenge of sustaining a water supply for future generations is becoming more and more challenging each year.

This chapter presents an overview of the City's water supply and infrastructure system objectives and goals, describes existing policies, and provides recommendations for future measures to help the City meet those objectives and goals.

2.2 OVERALL WATER SYSTEM OBJECTIVES AND GOALS

This Citywide Water System Master Plan Update has been prepared based on the following overall water system objectives and goals:

- Ensure safe, adequate and reliable water supplies for the City's existing and future residents and businesses.
- Support the goals, objectives and policies of the City's General Plan, particularly those contained in the Public Facilities and Services Element.
- Comply with existing and future legislation and regulations for both potable and non-potable (recycled) water supplies including, but not limited to, the following:
  - Support the City's compliance with legislation related to reducing greenhouse gases (Assembly Bill (AB) 32[1] and Senate Bill (SB) 375[2]) by improving the efficiency of water system facility operations when feasible.
  - Comply with the California Green Building Standards Code, and other "green" building guidelines, as they relate to standards for interior and exterior water use, to promote more efficient use of the City's water supplies.

[1] AB 32 California Global Warming Solutions Act of 2006: Signed into law September 27, 2006; requires the California Air Resources Board (CARB) to develop regulations and market mechanisms that will ultimately reduce California's greenhouse gas (GHG) emissions by 25 percent (to 1990 levels) by 2020.

[2] SB 375: Signed into law September 30, 2008; requires each metropolitan region to adopt a "sustainable community strategy" (SCS) in its regional transportation plans to encourage compact development that aligns with regional GHG emissions reduction targets set by the CARB; enhances the CARB's ability to reach AB 32 goals; intended to promote more environmentally-friendly communities, more sustainable developments, less time people spend in their cars, and more alternative transportation options.

- Comply with the Water Conservation Act of 2009 (SB X7-7) which was passed in November 2009 to increase water use efficiency by reducing per capita water use statewide with a goal to increase the sustainability and extend the longevity of the City's existing water supplies. Per SB X7-7, the City's adopted per capita water use targets are 204 gallons per capita per day (gpcd) (2015 interim target) and 181 gpcd (2020 final target). The City's per capita water use in 2015 was 142 gpcd, which was well below the City's 2015 interim target. The City's per capita water use in 2020 was 181 gpcd, equal to the City's 2020 final target. Additional discussion on the City's per capita water use and compliance with SB X7-7 is provided in Chapter 4.
- Comply with the Sustainable Groundwater Management Act (SGMA) which became effective in January 2015 with the passage of comprehensive groundwater legislation contained in SBs 1168 and 1319, and AB 1739. The legislative intent of SGMA is to provide sustainable management of groundwater basins, enhance local management of groundwater, establish minimum standards for sustainable groundwater management, and provide local groundwater agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater. Discussion on the City's compliance activities related to SGMA is provided in Chapter 5.
- Comply with SB 606 and AB 1668 which were passed in May 2018 and established new statewide water use efficiency standards for indoor residential water use, outdoor residential water use, commercial, industrial and institutional irrigation of landscaped areas and distribution system water loss. A primer entitled "Making Water Conservation a California Way of Life" was developed to be a reference document for the implementation of the complex 2018 legislation. Discussion on the City's compliance with SB 606 and AB 1668 is provided in Chapter 4.

The following sections of this chapter describe the City's existing policies and recommended measures for water conservation, recycled and non-potable water, and water system facility operations, to help meet these overall water system objectives and goals.

2.3 CITY OF TRACY WATER CONSERVATION PROGRAMS

2.3.1 Existing Water Conservation Programs



The City has an on-going water conservation program that includes residential surveys, public and school education programs, rebates for water-efficient appliances and other specific programs. These programs have been successful in reducing water use, especially during the recent drought. In the late 1980's and early 1990's, the City's overall per capita water use was about 300 gpcd. However, since the late 1990's, the City's overall per capita water use has been significantly reduced. Since 2008, the City's average overall per capita water use has been 170 gpcd.

In 2015 and 2016, which were dry years, and years in which overall water demands were affected by water conservation measures and water use restrictions, the City's per capita water use dropped to 142 and 146 gpcd, respectively.

The City also has a Water Shortage Contingency Plan (WSCP) which was originally developed in 1992. The City's WSCP was updated in June 2015 to incorporate mandatory prohibitions on water use required by State Water Resources Control Board (SWRCB), and again updated in early 2021 in conjunction with the City's 2020 Urban Water Management Plan (UWMP) based on new requirements for WSCPs. The WSCP includes mandatory water use prohibitions and restrictions which are always in effect, triggers for implementation of various stages of the WSCP based on various water supply shortage scenarios, and specific water use restrictions for each stage of the WSCP, which are intended to reduce the City's water demand by up to 50 percent and greater than 50 percent in the event of a water supply emergency or a drought condition. Water use restrictions in each stage of the WSCP become increasingly restrictive as needed to reduce the City's water demand.

The City's current WSCP is included in Section 8 of the City's 2020 UWMP. The Tracy Municipal Code (Chapter 11.28 Water Management, Article 5 Drought and Other Water Emergency and Article 6 Water Conservation and Rationing Plan, Water Emergency Plan, Variances and Appeals) will be updated in late 2021 to be consistent with the latest updates to the WSCP.

2.3.2 Water Efficient Landscape Ordinance

About half of the urban water is used for landscape irrigation in California. Large water savings can be gained by efficient landscape design, installation, and maintenance. New development and retrofitted landscape water efficiency standards are governed by the State Model Water Efficient Landscape Ordinance (MWELO) which is codified in the California Code of Regulations Title 23 Waters, Division 2 Department of Water Resources, Chapter 2.7 Model Water Efficient Landscape Ordinance. All agencies must adopt, implement, and enforce the MWELO or a more stringent ordinance. The City has adopted MWELO and it is included in the Tracy Municipal Code Chapter 11.28 Water Management, Article 8 Water Efficient Landscape Ordinance.

Key components of MWELO include requirements for the following:

- Landscape design plans (e.g., plant selection, slopes, guidelines for water features, etc.)
- Irrigation design plans (e.g., separate meters for large landscape areas, automatic irrigation controllers utilizing evapotranspiration or soil moisture sensor data, use of rain sensors, etc.)
- Grading design plans (e.g., erosion and runoff protection)
- Irrigation scheduling and the development of a maximum applied water allowance (e.g., allowable water days and times, landscape water budgets, etc.)
- Landscape and irrigation maintenance scheduling
- Irrigation audits, irrigation surveys and irrigation water use analysis
- Use of recycled water (e.g., landscape irrigation, decorative water features)

2.4 RECYCLED AND NON-POTABLE WATER ORDINANCE

In 2002, the City adopted a Recycled and Non-Potable Water Ordinance which established the policy that recycled water may be used for non-potable uses within the City's designated recycled water use areas (as defined in the Tracy Municipal Code in Chapter 11.30 Recycled and Non-Potable Water). Specific provisions include the following:

> *11.30.030 (b) Each subdivision for which a tentative map or parcel map is required under Government Code section 66426 and located within designated recycled water use areas is required to install a recycled water distribution system to provide recycled water to the common areas[3] of the subdivision and for any industrial cooling or processing uses in the subdivision.*

The intent of this existing City policy is to require new development to use recycled water for landscape irrigation on professionally managed and maintained landscapes located within the City, such as golf courses, parks, greenbelts, and landscaped streets and medians, and for any applicable industrial cooling or processing purposes. This applies to all land use designations within the City's General Plan including, but not limited to, residential, commercial, industrial, and institutional. The only exception is landscaped areas within residential land uses which are maintained by private homeowners (e.g., private backyards or front yards which are not considered common areas); recycled water will not be required for landscape irrigation in these privately maintained areas.



To further encourage and expand the future use of recycled and/or non-potable water within the City, the following additional measures should be considered:

- Require the use of recycled or non-potable water for all decorative water features and artificial lakes.
- Require that existing large, landscaped areas currently irrigated with potable water supplies, such as City parks and sports fields, be converted to recycled or non-potable water use as opportunities for construction of recycled or non-potable water facilities to serve these existing areas occur .

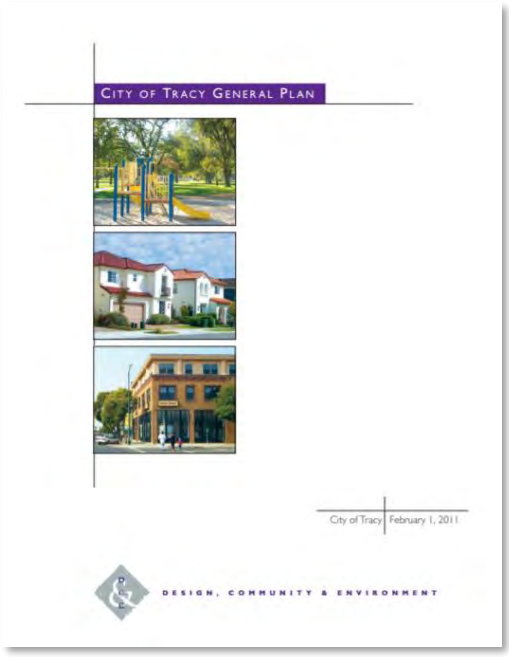
[3] "Common areas" shall include, but not be limited to, golf courses, parks, greenbelts, landscaped streets, and landscaped medians.

- Require that existing facilities with evaporative cooling systems and other industrial cooling processes currently using potable water supplies be converted to recycled or non-potable water use as opportunities for construction of recycled or non-potable water facilities to serve these existing areas occur.

As described further in Chapters 4, 5, and 9, the City has begun construction of a recycled water distribution system to deliver recycled water supplies to designated use areas.

2.5 CITY OF TRACY GENERAL PLAN WATER SERVICE GOALS, OBJECTIVES AND POLICIES

The City's General Plan, last updated in 2011, includes a Public Facilities and Services Element that provides information and policy guidance to ensure provision of facilities and services that will support existing and new development in the City. It addresses the changing public services and infrastructure needs of Tracy and provides for their logical and timely extension to keep pace with growth. Policies supporting well-maintained infrastructure are essential to achieve broader development objectives and support the future envisioned by the residents of Tracy. Specific goals, objectives and policies for water services are included in the Public Facilities and Services Element.



The General Plan goal for the City's water service is to provide "adequate supplies of water for all types of users" (General Plan Goal PF-6). Specific General Plan objectives and policies associated with this goal are summarized in Table 2-1.

Table 2-1. City of Tracy General Plan Objectives and Policies for Water Service

Objectives	Policies
Objective PF-6.1 Ensure that reliable water supply can be provided within the City's service area, even during drought conditions, while protecting the natural environment.	P1. The City shall promote water conservation by implementing the Best Management Practices contained in the UWMP. P2. The City shall continue to acquire additional sources of water supplies to meet the City's future demands. P3. To the extent feasible, the City shall use surface water supplies to meet daily water needs and reduce reliance on groundwater supplies. P4. The City shall establish water demand reduction standards for new development and redevelopment to reduce per capita and total demand for water.
Objective PF-6.2 Provide adequate water infrastructure facilities to meet current and future populations.	P1. The City shall maintain water storage, conveyance and treatment infrastructure in good working condition in order to supply domestic water to all users with adequate quantities, flows and pressures. P2. Storage reservoirs should be buried or partially buried depending on local groundwater conditions to allow for the joint use of the site with parks or recreational facilities, unless reservoirs are elevated to provide a gravity flow system, in which case the reservoirs shall be screened by landscaping and/or earthen berms.
Objective PF-6.3 Promote coordination between land use planning and water facilities and service.	P1. Structures with plumbing that are located within the City limits shall connect to the City water supply system. P2. New developments shall dedicate land for utility infrastructure such as treatment facilities, tanks, pump stations and wells as needed to support the development of their project. P3. The City shall be responsible for constructing new transmission water lines, as needed to meet future needs. Individual development projects shall be responsible for the construction of all water transmission means. P4. All new water facilities shall be designed to accommodate expected capacity for buildout of areas served by these facilities but may be constructed in phases to reduce initial and overall costs. P5. The availability of sufficient, reliable water shall be taken into account when considering the approval of new development. P6. Costs for water service expansion shall be distributed among new water users fairly and equitably.
Objective PF-6.4 Design and manage water system facilities for reliability during catastrophic events such as fires, power outages, droughts and earthquakes.	P1. Groundwater supplies should be reserved for emergency use during water treatment shutdowns, short-term shortages of surface water supplies or during droughts. P2. Backup emergency power systems shall be provided at all essential water facilities that rely on electric power. P3. Storage reservoir facilities should be located at naturally high topographic locations to capitalize on gravity flow, whenever possible. P4. Future water systems and facilities shall be designed to minimize the likelihood of damage from vandalism or terrorist activity.
Objective PF-6.5 Use recycled water to reduce non-potable water demands whenever practicable and feasible.	P1. The City shall provide recycled water systems, including pipelines, pump stations and storage facilities, to serve primarily City-owned facilities, schools and parks as funding becomes available. P2. Recycled water piping systems ("purple pipe") shall be constructed as appropriate in all new development projects to facilitate the distribution and use of recycled water. The specific location and size of the recycled water systems shall be determined during the development review process. P3. Recycled water shall be used for all public properties and large private open spaces or common areas to the extent feasible. P4. The City shall plan for recycled water infrastructure in the City's Infrastructure Master Plans and, to the extent feasible, recycled water should be utilized for non-potable uses, such as landscape irrigation, dust control, industrial uses, cooling water and irrigation of agricultural lands.

2.6 COMPLIANCE WITH CALIFORNIA GREEN BUILDING STANDARDS CODE

The California Green Building Standards Code, also known as CALGreen, was the first-in-the-nation mandatory green building standards code. In 2007, the California Building Standards Commission (CBSC) developed green building standards in an effort to meet the goals of California's landmark initiative AB 32 California Global Warming Solutions Act of 2006, which established a comprehensive program of cost-effective reductions of GHG to 1990 levels by 2020.

The 2008 CALGreen Code was first published in Part 11 of California's Title 24 Code and became effective on August 1, 2009. It included primarily voluntary green building standards for non-residential buildings, and mandatory standards for low-rise residential buildings. The 2010 CALGreen Code established mandatory and voluntary provisions for residential and non-residential construction. The 2016 CALGreen Code and later code supplements updated these provisions with an effective date of July 1, 2018. The 2019 CALGreen Code was published July 1, 2019 with an effective date of January 1, 2020.

The City adopted the 2019 CALGreen Code on November 19, 2019.

The key mandatory provisions of CALGreen are as follows:

- Residential Mandatory Measures:
  - Reduce indoor potable water use by installing ultra-low-flow fixtures and appliances (e.g., 1.8 gallons per minute (gpm) showerheads, 1.8 gpm kitchen faucets, 1.28 gallons/flush toilets, 0.125 gallons/flush wall-mounted urinals).
  - Residential developments with a total landscape area equal to or greater than 500 square feet shall establish landscape irrigation water budgets which conform to the local water efficient landscaping ordinance or to the State MWELO where no local ordinance is applicable.
  - Newly constructed residential developments may be required to have recycled water supply systems installed where disinfected tertiary recycled water is available from a municipal source.
- Non-Residential Mandatory Measures:
  - For buildings in excess of 50,000 square feet, provide separate submeters for each individual leased, rented or other tenant space within the building projected to consume more than 100 gallons per day.
  - Reduce indoor potable water use by 20 percent by installing ultra-low-flow fixtures and appliances (e.g., 1.8 gpm showerheads, 1.8 gpm kitchen faucets, 1.28 gallons/flush toilets, and 0.125 gallons/flush wall-mounted urinals).
  - Establish landscape irrigation water budgets which conform to the local water efficient landscaping ordinance or to the State's MWELO where no local ordinance is applicable.

— Newly constructed non-residential developments are required to have a recycled water supply system installed where a disinfected tertiary recycled water supply pipeline from a municipal source is within 300 feet of the construction site boundary.

Voluntary measures included in the CALGreen Code include further reductions in indoor water use in both residential and non-residential buildings, installation of low-water consumption irrigation systems, installation of rainwater systems, installation of graywater systems, landscaping with noninvasive species, and installation of dual plumbing systems.

2.7 RECOMMENDATIONS FOR NEW DEVELOPMENT AND NEW WATER SYSTEM FACILITIES

In addition to the various guidelines described above, and to allow the City to meet its water conservation goals and maintain the long-term sustainability of its water resources, the following recommendations should be considered for new development projects and new water system facilities in the City:

- Require new development projects to offset or mitigate its water demands if demands exceed those accounted for in the Citywide Water System Master Plan Update based on buildout of the City's adopted General Plan. The offset or mitigation may be achieved by reducing the water demands within the project (through the implementation of water conservation measures and/or incorporation of recycled water use) and/or participating in a project to reduce potable water demands in another portion of the City to offset the potable water demands of the proposed project.
- Establish designated utility corridors within new development areas to be within public rights-of-way to minimize or eliminate the need for utility easements within private property.
- Install solar power systems, or alternative power sources, at existing and new pump stations and other water system facilities, as feasible, to reduce electrical power consumption.
- Increase the frequency of routine operations and maintenance (O&M) activities for existing pump stations and wells to maintain pump efficiencies and reduce power demands.

2.8 PRINCIPLES FOR SUSTAINABLE INFRASTRUCTURE IN THE CITY OF TRACY

In November 2009, the City developed a list of principles for sustainable infrastructure for use in developing its 2012 Infrastructure Master Plans[4]. Principles were developed for storm drainage, water, wastewater, recycled water, and roadways and transportation and, for the most part, remain applicable for this Citywide Water System Master Plan Update.

The principles related to water infrastructure are summarized as follows:

- Energy efficient design and control systems should be used in all new facilities to minimize power consumption. Look for opportunities to use solar generation facilities.
- Promote and encourage, where feasible, the use of recycled water for non-potable uses in existing and future public landscaped areas.
- Establish and adopt interior and exterior water conservation requirements which are consistent with recommended State guidelines, to the degree possible.
- Require existing City customers to participate in water conservation activities that will enable the City to meet or exceed statewide water conservation requirements.
- Create a water rate structure that supports and provides incentives for water conservation.
- Encourage and create incentives to convert high water use outdoor landscaping to more drought-resistant plantings to facilitate water conservation among existing water users.

As applicable, these sustainability principles are incorporated into this Citywide Water System Master Plan Update as described in the following chapters.

[4] See Chapter 2 and Appendix A of the 2012 Citywide Water System Master Plan.

CHAPTER 3
Land Use Assumptions

3.1 OVERVIEW

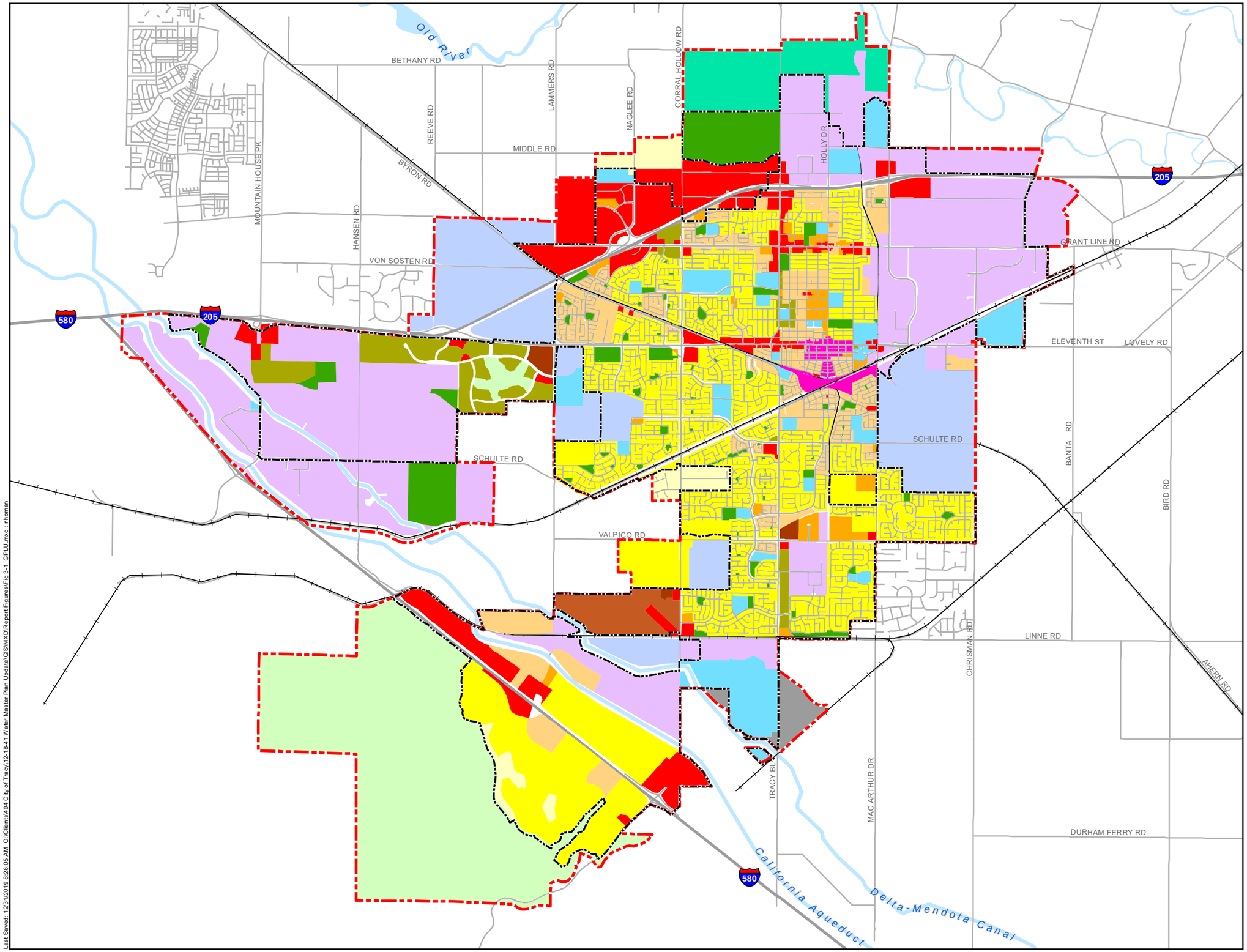
The purpose of this Citywide Water System Master Plan Update is to evaluate the required potable water and recycled water infrastructure to serve buildout of the City's General Plan and Sphere of Influence (SOI). In this Citywide Water System Master Plan Update, the term "buildout" is used to refer to full development of approved projects, additional planned developments, and miscellaneous infill, as identified by the City's Planning Division. However, as it is unclear when buildout will actually occur, no specific year is identified for the buildout condition. Two interim time frames are evaluated in this Citywide Water System Master Plan Update: Year 2025 (near-term) and Year 2040, to help provide prioritization of future system improvements in the period prior to buildout. The following sections present the land use assumptions for the City at 2025, 2040, and buildout time frames.

3.2 CITY OF TRACY GENERAL PLAN AND SPHERE OF INFLUENCE

The City's General Plan is the principal policy document for guiding future planning and development of the City of Tracy, including the SOI, which is the area outside of the City limits that the City expects to annex and urbanize in the future. The SOI area in the City's General Plan is about 16 square miles (existing City limits are approximately 26 square miles, for a total General Plan area of about 42 square miles). The City's most recent General Plan was adopted by City Council on February 1, 2011 and is used as the basis for the City's Infrastructure Master Plans, including this Citywide Water System Master Plan Update. Figure 3-1 illustrates the SOI boundary and the land uses included in the General Plan.

As shown on Figure 3-1, some of the areas outside of the City limits, but within the SOI, are designated as Urban Reserve. Proposed future development within these Urban Reserve areas includes a variety of land uses, such as Residential, Commercial, and Industrial.

Due to the nature of the planning and development process, actual development within the SOI may not conform to the planned land uses shown in the General Plan. Where available, more recent land use data from the City's Planning Division, specific plans, and other available planning documents were used preferentially over the General Plan land uses.



Symbology

- City Limits
- Sphere of Influence

General Plan Land Use

- Residential Very Low
- Residential Low
- Residential Medium
- Residential High
- Traditional Residential - Ellis
- Commercial
- Office
- Industrial
- Downtown
- Village Center
- Public Facilities
- Park
- Open Space
- Agriculture
- Aggregate
- Urban Reserve

Notes:
1. General Plan land use GIS file recieved from the City on April 5, 2018.

TRACY

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Figure 3-1

General Plan Land Use

City of Tracy
Water System Master Plan Update

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3.3 EXISTING AND PLANNED DEVELOPMENT OF THE CITY'S SPHERE OF INFLUENCE

Development of the City's SOI will include the following land use components:

- Existing developed land uses within the City limits
- Approved projects
- Additional planned development
- Miscellaneous infill located in existing developed areas
- Annexation of the Mountain View area

Each of these land use components is discussed in more detail below.

3.3.1 Existing Developed Land Uses

Existing developed land use within the City consists primarily of low-density residential land use. With some exceptions, existing developed land use within the City limits conforms to the General Plan. Water demands from the existing developed land uses will be included in the future water demand projections.

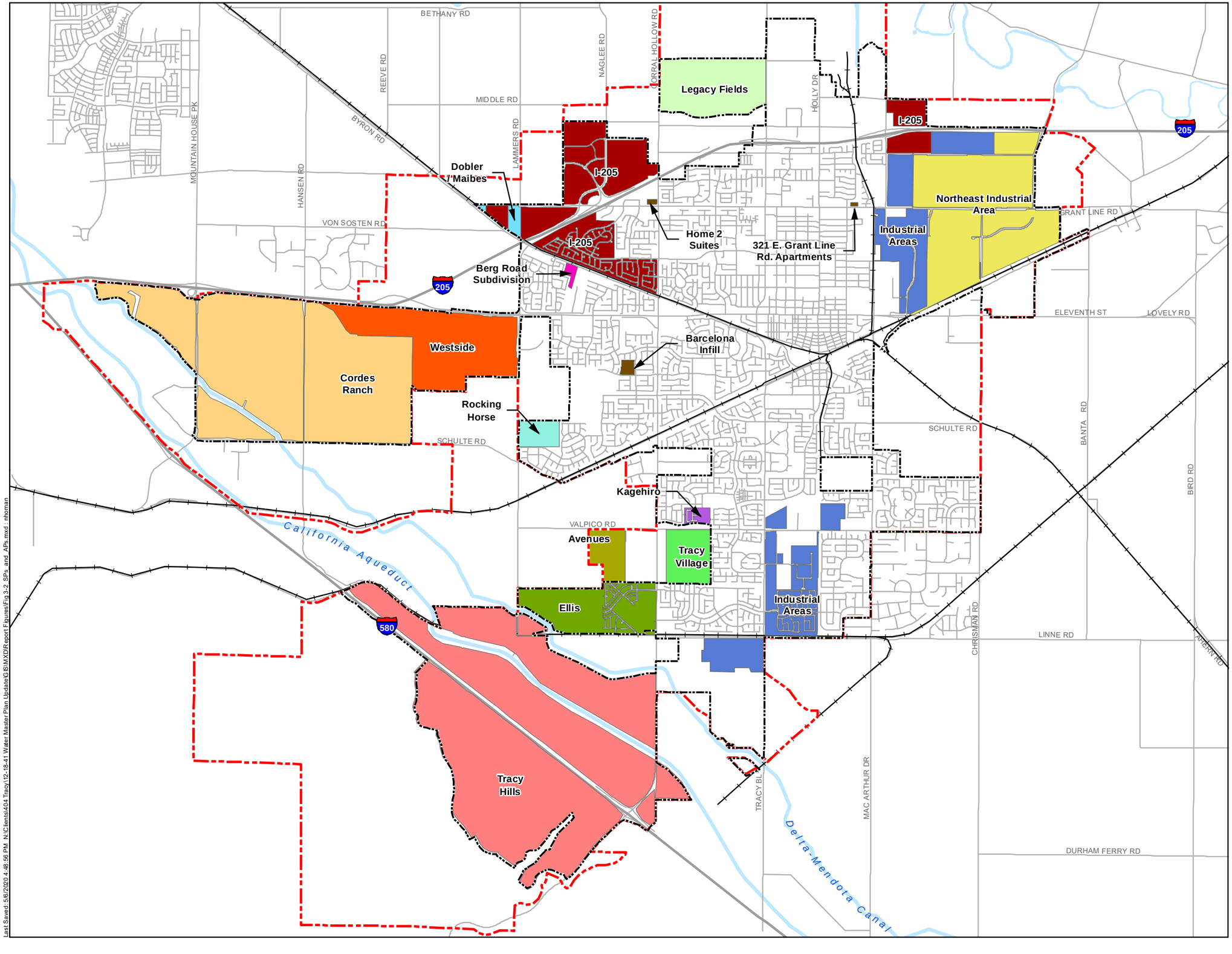
3.3.2 Approved Projects

Approved projects are developments which are far along in the planning process. Future land use can be projected with greater certainty in these areas due to available tentative maps, Environmental Impact Reports (EIRs), hydraulic evaluations, or other planning documents which have been prepared for these developments. Figure 3-2 shows the location of the approved projects in the City.

Table 3-1 summarizes the approved projects in the City. Many of the areas listed in Table 3-1 are partially developed, including the Cordes Ranch, Ellis, and Tracy Hills Specific Plan areas, which have ongoing and rapid development occurring within them.

As discussed in Chapter 4, water demands for the developed portions of these projects are included in the City's existing water demands[1]. Land use data regarding the number of residential dwelling units and non-residential acres remaining to be developed within each of these approved projects were obtained from the data sources listed in Table 3-1. This data was then used to estimate the anticipated additional future water demands associated with completion of these specific plans and projects, which are included in the future water demand projections.

[1] Water meter billing data from 2017 were used as the basis for the existing water system. Land use for development which occurred after 2017 is presented as future land use in this Water System Master Plan Update.



N

0 2,250 4,500

Scale in Feet

Symbology

- City Limits
- Sphere of Influence

Specific Plans

- I-205 Corridor
- Industrial Areas
- Northeast Industrial Area
- Avenues
- Cordes Ranch
- Ellis
- Tracy Hills
- Tracy Village
- Westside

Other Approved Projects

- Berg Road Subdivision
- Dobler / Maibes
- Kagehiro
- Rocking Horse
- Legacy Fields
- Small Approved Projects

Notes:
1. Dobler / Maibes is part of the I-205 Specific Plan area, but is accounted for separately in this WSMP.

TRACY

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Figure 3-2

Approved Projects

City of Tracy
Water System Master Plan Update

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Table 3-1. Summary of Approved Projects

Project Name	Primary Planning Document(s)	Source(s) of Land Use Data Used
I-205 Corridor Specific Plan	Specific Plan dated February 1991	Previous hydraulic evaluations[a]; Data from Planning Division[b]
Industrial Areas Specific Plan (North and South)	Specific Plan dated June 1988; major Specific Plan amendment dated 1999	Data from Planning Division[b]
Northeast Industrial Specific Plan (Phases 1, 2, and 3)	Specific Plan dated July 2012	Hydraulic Evaluation of Northeast Industrial Area (NEI) Specific Plan, West Yost Associates, September 2018
Avenues Specific Plan	Specific Plan dated May 2018	Hydraulic Evaluation of Avenues Specific Plan, West Yost Associates, April 2018
Cordes Ranch Specific Plan	Specific Plan dated September 2013	Previous hydraulic evaluations[c]; Data from Planning Division[b]
Ellis Specific Plan	Specific Plan dated January 2013	Hydraulic Evaluation of Ellis Specific Plan Phase 2 - The Gardens, West Yost Associates, December 2016; Hydraulic Evaluation of Ellis Specific Plan Phase 3 - Draft TM, West Yost Associates, July 2019
Tracy Hills Specific Plan	Specific Plan dated April 2016	Peer Review and Hydraulic Evaluation for Tracy Hills Phase 1B and 1C, West Yost Associates, May 2020; Data from Planning Division[b]
Tracy Village Specific Plan	Specific Plan dated May 2018	Hydraulic Evaluation of Tracy Village Specific Plan, West Yost Associates, February 2018
Westside Specific Plan	Specific Plan area was previously included in the Gateway Specific Plan; Draft EIR is currently being prepared for the Westside Specific Plan	Preliminary tables from Draft EIR
Berg Road Subdivision	-	Berg Road Properties Development Water Distribution System Analysis, Black Water, January 2016
Dobler / Maibes[d]	Included in the I-205 Corridor Specific Plan	Data from Planning Division[b]
Kagehiro	-	Data from Planning Division[e]
Rocking Horse	Initial Study and Mitigated Negative Declaration dated December 2015	Hydraulic Evaluation of South Lammers Road Development, West Yost Associates, May 2015
Legacy Fields (Holly Sugar Sports Park)	Final EIR dated June 2010	2013 City of Tracy Parks Master Plan
Small Approved Projects[f]	-	Previous hydraulic evaluations

(a) Land use data from previous hydraulic evaluations was used for the following development projects within the I-205 Corridor Specific Plan area: Sierra Hills, Grant Line Road Apartments, Aspire II, and Harvest.

(b) *Land Uses with TAZ Estimates_06_25_2021_2025_2040_BU_Independent.xlsx*, received from the City on June 25, 2021.

(c) Hydraulic Evaluation of International Park of Commerce (IPC) Buildings 3, 4, and 12, West Yost Associates, May 2017; Hydraulic Evaluation of International Park of Commerce (IPC) Building 25, West Yost Associates, July 2017; Hydraulic Evaluation of International Park of Commerce (IPC) Buildings 22, 23, and Thermo Fisher, West Yost Associates, October 2017; Hydraulic Evaluation of International Park of Commerce (IPC) Buildings 9, 10, and 14, West Yost Associates, May 2018; Hydraulic Evaluation of IPC Building 19A Draft TM, West Yost Associates, August 2019.

(d) Dobler / Maibes is part of the I-205 Corridor Specific Plan area but is accounted for separately in this WSMP Update.

(e) Correspondence from City staff received on August 7, 2019.

(f) Includes Home 2 Suites, 321 E. Grant Line Road Apartments, and Barcelona Infill.

3.3.3 Additional Planned Development

In addition to the approved projects, the City has also identified many additional planned development areas within the City's SOI which will be served by the City in the future. As described above, some of these additional planned development areas are designated as Urban Reserve in the City's General Plan. Projections of future land use in these areas are less certain than those for the approved projects, as there are few, if any, planning documents available. Many of these additional planned development areas are located outside of the existing City limits. As future developments within the City's SOI, but outside the City limits, are approved, they will be annexed and served by the City. Figure 3-3 shows the locations of these additional planned development areas.

Land use projections for additional planned development areas were provided by the City's Planning Division[2]. This data was then used to estimate the anticipated additional future water demands associated with development of the additional planned development areas, which are included in the future water demand projections.

3.3.4 Miscellaneous Infill Development

Vacant parcels that are not covered by any of the areas previously discussed may be developed as miscellaneous infill. Land use projections for development of miscellaneous infill parcels were provided by the City's Planning Division[2]. This data was used to estimate the anticipated additional future water demands associated with development of the infill parcels, which are included in the future water demand projections.

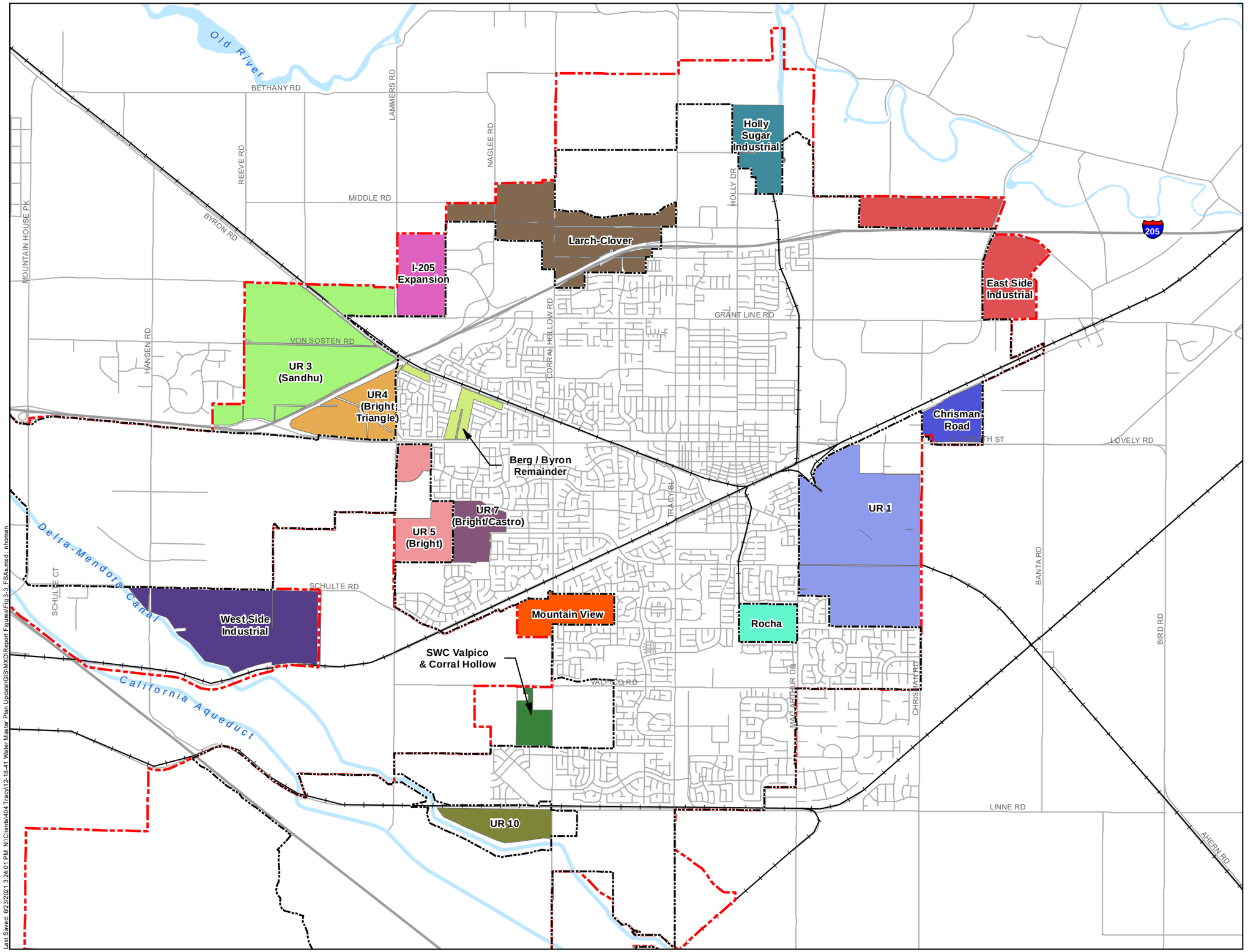
It should be noted that in more urbanized cities throughout California, there has been a recent increase in applications for Accessory Dwelling Units (ADUs), also known as guest houses or granny suites. An ADU is defined as an attached or detached residential dwelling unit built on the same parcel as an existing primary single-family dwelling, which provides complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation. Discussions with City staff acknowledge the possibility of an increase in development of ADUs in the future. However, due to the uncertainty in the timing and extent of ADU development in the City, they were not included in the future water demand projections.

3.3.5 Mountain View Annexation

As stated in the City's 2019 Municipal Service Review (MSR), the area of rural residential land use near the intersection of Mountain View Road and Corral Hollow Road may be annexed and served by the City in the future. The location of the Mountain View Annexation is shown on Figure 3-3.

Although the Mountain View area is already developed, extending water service to these homes would increase the City's water demands. Data from the MSR was used to estimate the anticipated additional future water demands associated with extending service to the Mountain View area, which are included in the future water demand projections.

[2] *Land Uses with TAZ Estimates_06_23_2021_2025_2040_BU_Independent.xlsx*, received from the City on June 25, 2021.



0 2,000 4,000

Scale in Feet

Symbology

- City Limits
- Sphere of Influence
- Mountain View

Additional Planned Development Areas

- Berg / Byron Remainder
- Chrisman Road
- East Side Industrial
- Holly Sugar Industrial
- I-205 Expansion
- Larch-Clover
- Rocha
- SWC Valpico & Corral Hollow
- UR 1
- UR 3 (Sandhu)
- UR 4 (Bright Triangle)
- UR 5 (Bright)
- UR 7 (Bright/Castro)
- UR 10
- West Side Industrial

Notes:

1. Miscellaneous Infill is not shown. It is assumed that small vacant parcels are evenly distributed throughout the central developed areas of the City.

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Figure 3-3

Additional Planned Development

City of Tracy
Water System Master Plan Update

3.4 DEVELOPMENT TIME FRAMES EVALUATED IN THIS WATER SYSTEM MASTER PLAN UPDATE

Three development time frames are evaluated in this Water System Master Plan Update:

- 2025 (Near-Term)
- 2040
- Buildout

Assumptions for each development time frame are described below. Projections for timing of development were provided by the City's Planning Division.

3.4.1 2025 (Near-Term) Development of the City's Sphere of Influence

Most of the near-term development is projected to occur in the areas covered by the approved projects discussed above. Except for the Westside Specific Plan, Avenues Specific Plan, and Dobler/Maibes projects, all of the approved projects listed in Table 3-1 are expected to begin development soon or continue developing through 2025. A small portion of the near-term development is projected to occur within the UR 7 (Bright/Castro), UR 1, Westside Industrial, Larch-Clover, and Berg/Byron Remainder development areas. In addition, approximately 44 acres of miscellaneous vacant parcels are projected to develop by 2025.

3.4.2 2040 Development of the City's Sphere of Influence

Except for the Tracy Hills Specific Plan and Cordes Ranch Specific Plan it was assumed that all of the other approved projects listed in Table 3-1 will be completely developed by 2040. Only a small portion of the Cordes Ranch Specific Plan was assumed to be developed after 2040. Significant development is projected to occur in many of the additional planned development areas by 2040; only the UR 10, UR 4 (Bright Triangle), UR 3 (Sandhu), Chrisman Road, Rocha, and SWC Valpico & Corral Hollow future service areas are projected to start development after 2040. In addition, approximately 215 acres of miscellaneous vacant parcels are projected to develop by 2040 (171 acres in addition to 2025 development).

3.4.3 Buildout Development of the City's Sphere of Influence

The remaining planning areas assumed to be developed after 2040 were assumed to be part of the buildout development of the City's SOI. In addition, it was assumed that a total of 311 acres of miscellaneous vacant parcels within the City limits will develop by buildout (91 acres in addition to 2040 development). As noted above, actual timing for full buildout of the City's SOI is uncertain as development plans continually change and the City's General Plan is periodically updated.

3.5 SUMMARY OF LAND USE PROJECTIONS

Table 3-2 presents the total projected land use to be developed in the City's SOI by the 2025, 2040, and buildout time frames. Table 3-2 does not include existing developed land within the City, unless it was developed after 2017. Refer to Appendix A for detailed land use assumptions.

Approximately 25,000 new dwelling units and 5,600 new acres of non-residential land use are projected to be developed by buildout. A direct comparison with land use projections from the 2012 WSMP is difficult, as some development has occurred between the completion of the 2012 WSMP and the preparation of this Citywide Water System Master Plan Update. In general, the projection for number of dwelling units at buildout has increased significantly since the 2012 WSMP, while the projection for non-residential acreage at buildout has decreased since the 2012 WSMP. However, when compared to the City's historical and existing land uses, which were primarily residential, the projected land uses for new development are more heavily skewed to non-residential uses (with almost 60 percent of the projected acres of new development at buildout being non-residential uses). The future industrial, commercial, and retail growth anticipated in the City's Sphere of Influence is reflective of the City's goal to bring jobs and economic growth and improve the City's jobs-housing balance.

Table 3-2. Projected Development by Time Frame within the City's Sphere of Influence[a]

Land Use Type	Total Projected New Development by 2025		Total Projected New Development by 2040[b]		Total Projected New Development at Buildout[c]	
	Dwelling Units	Gross Acres	Dwelling Units	Gross Acres	Dwelling Units	Gross Acres
Residential – Very Low Density[d]	-	-	265	223	1,292[e]	907
Residential – Low Density[d]	2,880	647	6,490	1,438	8,375	1,871
Residential – Medium Density[d]	253	49	5,444	608	8,150	902
Residential – High Density	1,591	81	3,300	181	7,033	380
Residential – Very High Density	110	3	110	3	110	3
Commercial	-	45	-	549	-	818
Office	-	1	-	115	-	256
Industrial	-	859	-	3,136	-	4,093
Institutional	-	3	-	187	-	187
Identified Parks[f]	-	139	-	280	-	280
Total	4,834	1,826	15,609	6,720	24,960	9,698

(a) Includes existing development constructed after 2017.
(b) Includes new development constructed within 2025 and 2040 time frames.
(c) Includes new development constructed within 2025, 2040, and Buildout time frames.
(d) For selected projects and development areas, it was assumed that 11.2% of the total gross acres in the very low, low, and medium density residential land use categories will develop as parks.
(e) Includes existing units from Mountain View Annexation.
(f) Includes park areas identified with the Rocking Horse, Ellis, Avenues, Tracy Hills Phase 1 and Legacy Fields developments.

CHAPTER 4
Existing and Future Water Demands

4.1 OVERVIEW

The purpose of this chapter is to present the existing potable and recycled water demands currently served by the City, as well as the projected future potable and recycled water demands for the 2025 (near-term), 2040, and buildout time frames. Any additional evaluations regarding the timing and phasing of future water demands outside of the specified time frames will be developed as part of separate evaluations and are not included in this Citywide Water System Master Plan Update.

Accurate and detailed potable and recycled water demand data and projections are required to:

1. Develop and calibrate the potable and recycled water system hydraulic models.
2. Identify deficiencies in the existing potable and recycled water systems and required improvements.
3. Assess the future water system capacity and identify improvements needed to serve proposed development.

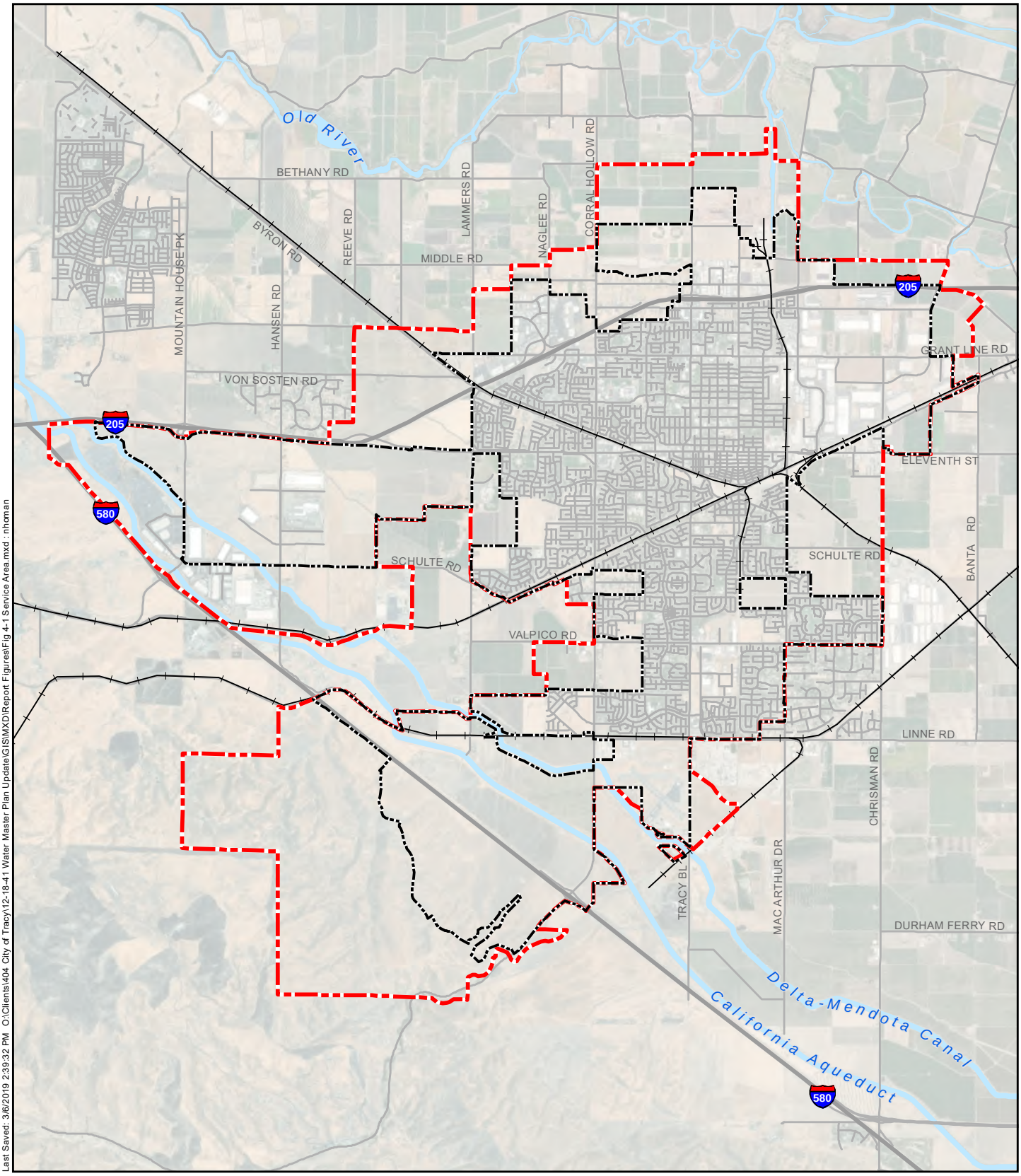
Accurate demand projections also play a key role in helping the City identify and secure sufficient water supplies to serve their customers under various hydrologic conditions. A discussion of the City's existing and future water supplies is provided in Chapter 5 of this Citywide Water System Master Plan Update.

The following sections of this chapter describe the data and methodology used to determine the City's potable and recycled water system demands:

- Existing Service Area
- Population Served
- Historical Potable Water Production and Consumption
- Existing Recycled Water Production and Consumption
- Water Conservation and Water Use Efficiency
- Adopted Peaking Factors
- Future Water Demand Projections
- Future Per Capita Water Use Projections

4.2 EXISTING SERVICE AREA

The City is located in San Joaquin County, California, approximately 70 miles south of Sacramento and 60 miles east of San Francisco. The existing incorporated area of the City (i.e., City limits) encompasses approximately 26 square miles. As described in Chapter 3, the City's SOI is approximately 42 square miles and is 16 square miles larger than the City limits. The SOI encompasses the area outside of and contiguous with the City limits that the City expects to annex and urbanize in the future. Figure 4-1 shows the boundaries of the existing City limits and SOI.



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Symbology

- City Limits / Existing Water Service Area
- Sphere of influence

N

0 3,750 7,500

Scale in Feet

TRACY

WEST YOST ASSOCIATES

Figure 4-1

Water Service Area

City of Tracy
Water System
Master Plan Update

The City's existing water service area is generally coterminous with the City limits as shown on Figure 4-1. The City currently provides potable water service to all of its residents, as well as approximately 400 residents of the Larch-Clover County Services District and the unincorporated Patterson Pass Business Park. Future growth potential for the City includes completion of ongoing development projects and infill within the City limits, and development of areas outside of the City limits within the SOI boundary. Refer to Chapter 3 for details on future land use within the City's SOI.

4.3 POPULATION SERVED

Approximately 96,000 people live in the City as of January 2020. Population growth was rapid in the City over the 15-year period 1990 through 2005, with the City growing by 139 percent. Between 2005 and 2020, however, growth has slowed relative to historical rates; population increased approximately 68 percent over this 15-year period. The reduction in growth rate has likely been caused by a combination of economic forces, such as the economic downturn of 2008 through 2011, and measures taken by the City to limit growth. In 1987, the City adopted a residential Growth Management Ordinance (GMO), which was amended in 2000 by the voter-initiated Measure A. The objective of the GMO and Measure A was to achieve a steady and orderly growth rate that allows for the adequate provision of services and community facilities and includes a balance of housing opportunities. Under the adopted GMO, builders must obtain a Residential Growth Allotment (RGA) in order to secure a residential building permit.

Table 4-1 and Figure 4-2 summarize the City's population between 1990 and 2020.

Table 4-1. Historical Population Served

Year	Population[(a)]	Annual Growth	Last 5-yr Average Annual Growth	Last 10-yr Average Annual Growth	Last 30-yr Average Annual Growth
1990[(b)]	32,450				
1991[(c)]	35,871	11%			3.7%
1992[(c)]	38,006	6%			
1993[(c)]	40,455	6%			
1994[(c)]	42,111	4%			
1995[(c)]	44,546	6%			
1996[(c)]	45,949	3%			
1997[(c)]	47,428	3%			
1998[(c)]	48,962	3%			
1999[(c)]	51,959	6%			
2000[(c)]	56,070	8%			
2001[(d)]	61,048	9%			
2002[(d)]	65,993	8%			
2003[(d)]	70,060	6%			
2004[(d)]	74,745	7%			
2005[(d)]	78,228	5%			
2006[(d)]	80,152	2%			
2007[(d)]	80,700	1%			
2008[(d)]	81,490	1%			
2009[(d)]	82,040	1%			
2010[(d)]	82,922	1%			
2011[(e)]	83,539	1%		1.5%	
2012[(e)]	84,357	1%			
2013[(e)]	85,568	1%			
2014[(e)]	86,061	1%			
2015[(e)]	87,194	1%			
2016[(e)]	88,712	2%	1.9%		
2017[(e)]	90,488	2%			
2018[(e)]	92,395	2%			
2019[(e)]	94,326	2%			
2020[(e)]	95,861	2%			

(a) Does not include Larch Creek Clover CSD service area population which has an estimated total number of accounts (118) and a person per household factor of 3.51 for an estimated population of 414 people.

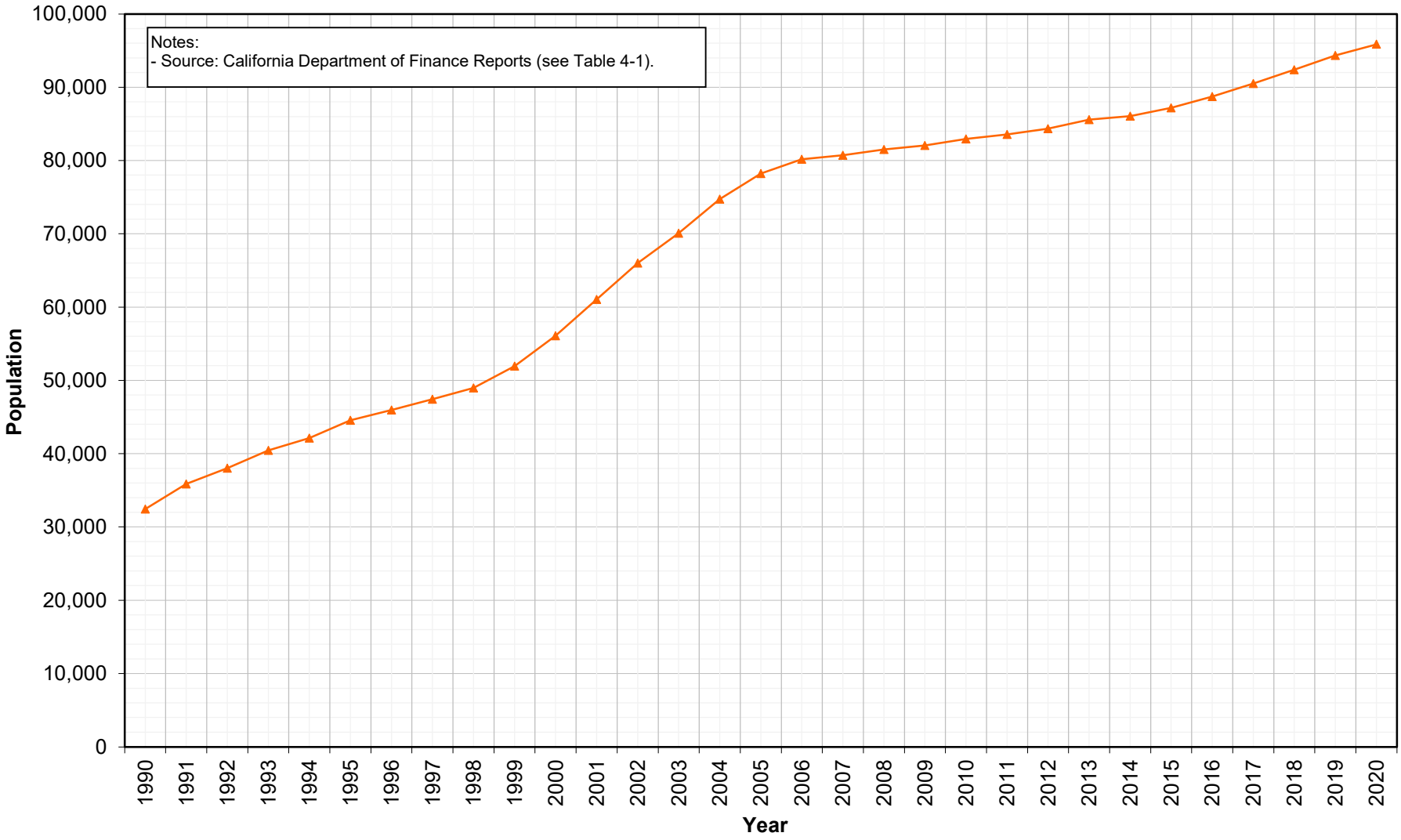
(b) Source: Department of Finance, E-4 Population Estimates for California Cities and Counties, January 1, 1981 to January 1, 1990.

(c) Source: Department of Finance, E-4 Historical Population Estimates for City, County and the State, 1991-2000, with 1990 and 2000 Census Counts, August 2007.

(d) Source: Department of Finance, E-4 Population Estimates for Cities, Counties and the State, 2001–2010, with 2000 and 2010 Census Counts, November 2012.

(e) Source: Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State 2011-2021 with 2010 Census Benchmark, May 2021

Figure 4-2. Historical Population Served (1990-2020)



4.4 HISTORICAL POTABLE WATER PRODUCTION AND CONSUMPTION

The City's potable water production is the combined quantity of surface water purchased from the United States Bureau of Reclamation (USBR) and the South San Joaquin Irrigation District (SSJID) plus the groundwater produced by the City's wells[1], while potable water consumption is the quantity of water actually consumed or used by the City's customers. As will be discussed later, the difference between production and consumption is unaccounted-for water (UAFW), also referred to as non-revenue water (NRW).

The City currently tracks all of the surface water purchased from USBR and SSJID plus the groundwater produced by its wells. The City also meters all of its customers' water use and categorizes their water use by customer class. Consequently, the City tracks water use in two ways: production records and meter (consumption) records. Both are discussed in more detail below, along with a discussion on UAFW and per capita water demands.

4.4.1 Historical Potable Water Production

The City meets its customers' potable water demands with a combination of surface water purchased from USBR and SSJID plus groundwater pumped from municipal wells. Table 4-2 presents the historical annual potable water production, by source, from 1990 to 2020.

Table 4-2 indicates that since SSJID began surface water deliveries in 2005, the City has significantly increased its surface water use to meet its customers' water demands, and as a result groundwater production has dramatically decreased. Surface water use in recent years (2010-2020) accounts for over 94 percent of the total annual water production.

The City plans to continue maximizing surface water use because the City's groundwater is heavily mineralized (e.g., high total dissolved solids (TDS)). Consequently, the reduction in groundwater use will ultimately increase the overall quality of the City's drinking water. However, the City will continue to rely on groundwater for peaking, drought, and emergency supplies to meet water demands when surface water supplies may be limited. Detailed discussions on water supplies and their historical use and availability are presented in Chapter 5.

[1] In 2019, the City also began receiving surface water supplies through an agreement with the Byron Bethany Irrigation District (BBID). The BBID surface water supplies are treated at the City's John Jones Water Treatment Plant (JJWTP) and are used to meet potable water demands within the City's Tracy Hills development. Additional discussion on this water supply is provided in Chapter 5.

Table 4-2. Historical Annual City of Tracy Potable Water Production by Source

Year	Surface Water, af/yr			Groundwater, af/yr	City Production, af/yr	City Production, MG	Percent Surface Water	Percent Groundwater
	USBR[a]	SSJID[b]	Total Surface Water					
1990[c]	4,968	-	4,968	5,838	10,806	3,521	46%	54%
1991[c]	4,995	-	4,995	4,815	9,810	3,197	51%	49%
1992[c]	7,148	-	7,148	4,002	11,150	3,633	64%	36%
1993[c]	7,800	-	7,800	4,127	11,927	3,886	65%	35%
1994[c]	7,788	-	7,788	4,901	12,689	4,135	61%	39%
1995[c]	8,387	-	8,387	4,310	12,697	4,137	66%	34%
1996[c]	8,817	-	8,817	4,562	13,379	4,360	66%	34%
1997[c]	7,539	-	7,539	5,789	13,328	4,343	57%	43%
1998[c]	6,282	-	6,282	4,797	11,079	3,610	57%	43%
1999[c]	7,551	-	7,551	5,559	13,110	4,272	58%	42%
2000[c]	7,785	-	7,785	6,548	14,333	4,670	54%	46%
2001[c]	7,302	-	7,302	7,321	14,623	4,765	50%	50%
2002[c]	7,878	-	7,878	7,802	15,680	5,109	50%	50%
2003[c]	10,118	-	10,118	6,847	16,965	5,528	60%	40%
2004[c]	11,187	-	11,187	7,176	18,363	5,984	61%	39%
2005[d]	8,920	3,146	12,066	5,826	17,892	5,830	67%	33%
2006[d]	6,048	8,918	14,966	3,034	18,000	5,865	83%	17%
2007[d]	6,374	9,130	15,504	3,672	19,176	6,249	81%	19%
2008[d]	6,503	8,017	14,520	2,598	17,118	5,578	85%	15%
2009[d]	4,965	10,401	15,366	1,327	16,693	5,439	92%	8%
2010[d]	5,303	10,850	16,153	498	16,651	5,426	97%	3%
2011[d]	4,790	11,793	16,583	292	16,875	5,499	98%	2%
2012[d]	4,878	12,294	17,172	420	17,592	5,732	98%	2%
2013[d]	4,960	13,112	18,072	515	18,587	6,057	97%	3%
2014[d]	4,018	11,515	15,533	680	16,213	5,283	96%	4%
2015[d]	3,193	10,329	13,522	519	14,041	4,575	96%	4%
2016[d]	2,634	11,372	14,006	648	14,654	4,775	96%	4%
2017[d]	4,906	11,464	16,370	995	17,365	5,658	94%	6%
2018[d]	5,184	10,471	15,655	817	16,472	5,367	95%	5%
2019[d]	7,537	8,750	16,287	645	16,932	5,517	96%	4%
2020[d]	5,733	11,773	17,506	1,181	18,687	6,089	94%	6%

(a) Does not include USBR water wheeled to Patterson Pass Business Park and the Safeway Distribution Center.

(b) SSJID began surface water deliveries to the City in 2005.

(c) Source: Figure 7, WSA for the Holly Sugar Sports Park, June 2009.

(d) Source: Annual Production Totals.xls spreadsheets received from the City.

Figure 4-3 presents the total historical annual potable water production for the City. This historical data indicates that annual water production generally increased at about 3 percent per year from 1990 to 2007. Water production decreased in 2008 and remained relatively constant through 2011, likely in response to poor economic conditions that resulted in vacant properties and unoccupied homes. Water production increased in 2012 and 2013 as economic conditions improved, before decreasing dramatically in 2014 and 2015 due to the voluntary and mandatory water conservation efforts that were implemented by the City's water customers during the extended drought. Water production has increased in recent years (2016-2020) as water use restrictions were lifted and new development projects are being constructed. While the City's water production will likely continue to increase as the City expands, the rate at which water production is expected to increase will likely be lower than 3 percent due to the adopted GMO and water conservation and water use efficiency measures implemented in response to the recent drought and recent legislation. Discussions on the City's projected future water production are presented below under *Section 4.8.6 Projected Buildout Water Demands*.

In addition to providing water to its residents, the City also serves water to the Patterson Pass Business Park (PPBP), which is located outside of the City limits. Water supplied to PPBP is not included in the City's production totals as presented in Table 4-2 and Figure 4-3 because the water supply for this area is purchased by PPBP from the Byron Bethany Irrigation District (formerly the Plain View Water District). The City is only responsible for providing water treatment and delivery services to PPBP in accordance with a "treat and wheel" agreement. Table 4-3 presents the historical water wheeled to PPBP by the City under this agreement.

The City's highest monthly water production has historically occurred in either the month of July or August, which corresponds with the high temperatures and minimal rainfall that is experienced in the City during those summer months. The lowest monthly water production has historically occurred in either January or February. These months correspond with the shut-down of the John Jones Water Treatment Plant for maintenance, which typically occurs in the winter months (e.g., December, January, and/or February).

Figure 4-3. Historical Annual Water Production (1990-2020)

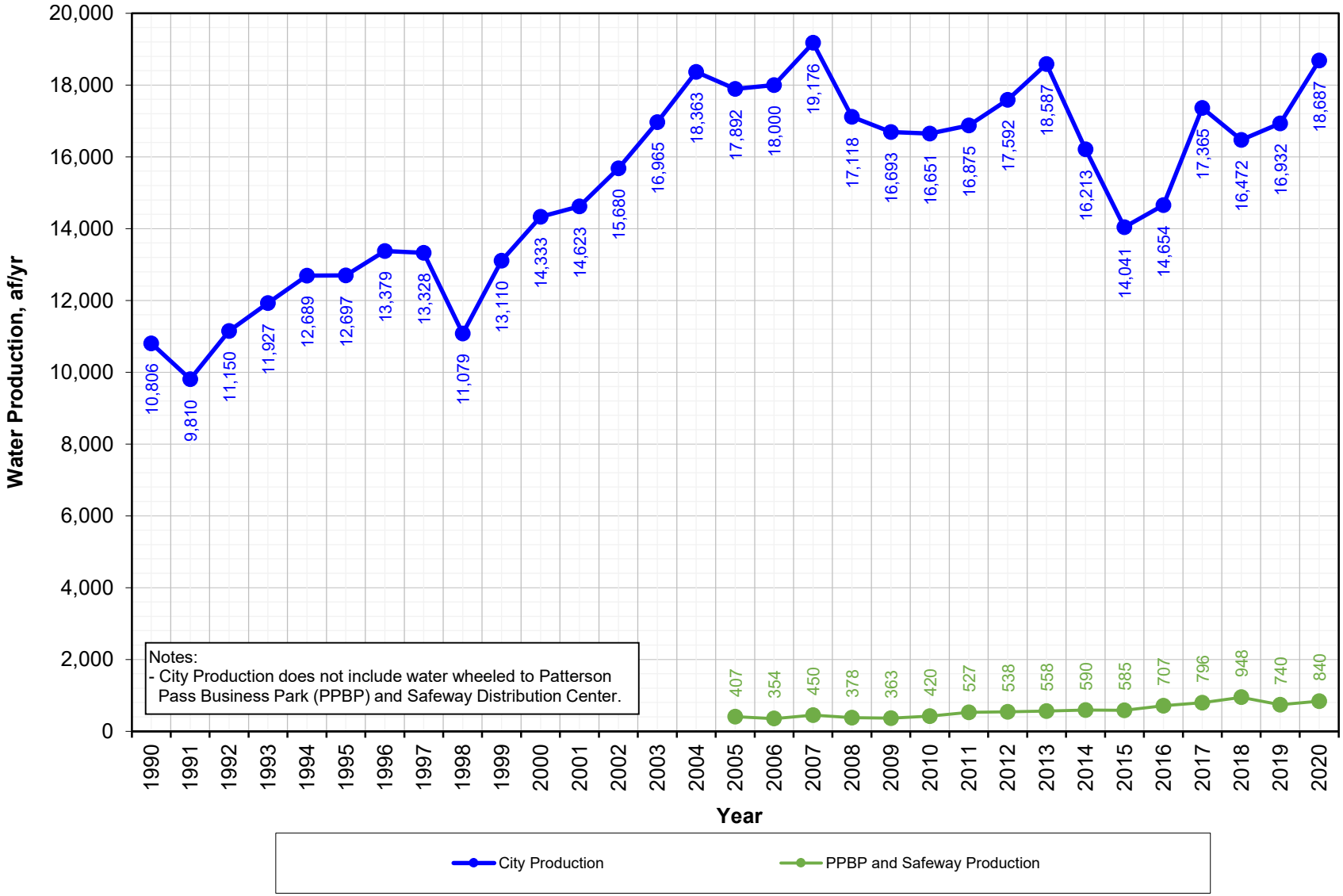


Table 4-3. Historical Annual Potable Water Production including Wheeled Water for Patterson Pass Business Park

Year	City Production, af/yr[(a)]	Wheeled USBR Water for the PPBP, af/yr[(b)]	Total Production	
			af/yr	MG
2005	17,892	407	18,299	5,963
2006	18,000	354	18,354	5,981
2007	19,176	450	19,626	6,395
2008	17,118	378	17,496	5,701
2009	16,693	363	17,056	5,558
2010	16,651	420	17,071	5,563
2011	16,875	527	17,402	5,670
2012	17,592	538	18,130	5,908
2013	18,587	558	19,145	6,239
2014	16,213	590	16,803	5,475
2015	14,041	585	14,626	4,766
2016	14,654	707	15,361	5,005
2017	17,365	796	18,161	5,918
2018	16,472	948	17,420	5,676
2019	16,932	740	17,672	5,758
2020	18,687	840	19,527	6,363

(a) Source: Annual Production Totals.xls spreadsheets received from the City.
(b) The City wheels USBR water for the Patterson Pass Business Park and the Safeway Distribution Center. This water is not part of the City's annual water rights allocations and is therefore tracked separately from the City Production.

4.4.2 Historical Potable Water Consumption

Potable water consumed by customer class between 2015 and 2017 is summarized in Table 4-4. This data indicates that, on average, residential use (including single family and multi-family land use types) represents approximately 67 percent of the total metered water consumption in the City. Commercial and Industrial customers represent an average of approximately 15 and 5 percent, respectively, of the total metered water consumption. Irrigation accounts for the remaining 13 percent of the total metered water consumption.

Projected future water consumption by customer class is discussed below under *Section 4.8.6 Projected Buildout Water Demands*.

Table 4-5 provides a summary of the top 15 potable water users in 2017 by customer classification. These top users accounted for approximately 11 percent of the total metered water consumption in 2017. The top user is an industrial food processing user, and their overall water use represents more than 4 percent of the City's 2017 water consumption. The remaining large Commercial, Multi-Family Residential, and Irrigation water users account for about 7 percent of the City's total water consumption in 2017.

Table 4-4. Potable Water Consumption

Year	Residential Single-Family		Residential Multi-Family		Commercial		Industrial		Irrigation		Total, af/yr[(b)]
	Percent[(a)]	af/yr	Percent[(a)]	af/yr	Percent[(a)]	af/yr	Percent[(a)]	af/yr	Percent[(a)]	af/yr	
2015	61.3%	8,582	7.0%	984	15.2%	2,129	5.2%	725	11.3%	1,579	13,999
2016	60.1%	8,400	7.0%	977	15.0%	2,102	4.9%	685	13.0%	1,811	13,976
2017	58.8%	9,737	6.0%	999	15.8%	2,619	4.7%	784	14.6%	2,413	16,552
Average	60.1%	8,907	6.7%	987	15.4%	2,283	4.9%	731	12.9%	1,935	14,842

(a) Based on meter data received from the City on October 15, 2019.

(b) Source: City of Tracy AWWA Water Audit Spreadsheets, received from the City on November 1, 2018.

Table 4-5. Summary of Top 15 Potable Water Users in 2017

No.	Customer Class	Total Annual Consumption, ccf	Total Annual Consumption, MG	Percentage of Total Annual Consumption, %
1	Industrial	295,480	221	4.10
2	Commercial	123,785	93	1.72
3	Commercial	47,990	36	0.67
4	Irrigation	42,985	32	0.60
5[(a)]	Irrigation	29,466	22	0.41
6	Multi-Family Residential	29,210	22	0.41
7	Irrigation	28,857	22	0.40
8	Commercial	28,070	21	0.39
9	Multi-Family Residential	26,308	20	0.36
10	Commercial	25,167	19	0.35
11	Commercial	23,962	18	0.33
12	Commercial	23,198	17	0.32
13	Commercial	22,344	17	0.31
14	Irrigation	20,720	15	0.29
15	Commercial	20,050	15	0.28
	Total	**787,592**	**589**	**10.9**

Source: 2015. May 2018 Reads.csv received from the City on May 30, 2018.

(a) Large user appears to be due to a leak and has been resolved.

4.4.3 Potable Unaccounted-for Water/Non-Revenue Water

Unaccounted-for water (UAFW) within the City is the difference between the recorded water production and metered water consumption. UAFW includes a combination of various water uses that are not metered, such as water used for hydrant testing, firefighting, and system flushing or water that is lost from system leaks and water main breaks. As noted above, unaccounted-for water is also referred to as non-revenue water (NRW).

Potable UAFW between 2015 and 2017[2] is summarized in Table 4-6. Table 4-6 indicates that the potable UAFW within the City averaged approximately 8.9 percent between 2016 and 2017 (data from 2015 appeared suspect and was not included in the average). This UAFW percentage is lower than the UAFW percentage used in the 2015 UWMP (9.6 percent), but is above the UAFW percentage (7.5 percent) used in the 2012 WSMP. For planning purposes in this Citywide Water System Master Plan, a UAFW percentage of 9.6 percent (consistent with the 2015 UWMP) was used to project the City's total future water production requirements.

[2] The City's 2018-2020 consumption data was not available at the time of this evaluation. Based on data provided in the City's 2020 UWMP, UAFW in 2018 and 2019 dropped to about 6.8 percent and 5.8 percent, respectively, but then increased significantly in 2020 to over 18 percent, although the 2020 data had not yet been validated.

Table 4-6. Potable Unaccounted-for Water

Year	Total Production, af/yr[(a)]	Consumption, af/yr[(b)]	Difference, af/yr	Percentage, UAFW, %
2015	14,626	13,999	627	4.3
2016	15,361	13,976	1,385	9.0
2017	18,161	16,552	1,609	8.9
			Average (2016 and 2017)[(c)]	**8.9**

(a) Source: Refer to Table 4-3. Includes water wheeled to Patterson Pass Business Park and Safeway Distribution Center by the City.
(b) Source: City of Tracy AWWA Water Audit Spreadsheets, received from the City on November 1, 2018.
(c) Average does not include 2015 because data appears to be suspect.

The City Utilities Department, in conjunction with the Public Works and Construction Management Departments, is implementing several new programs to address water loss. A new process was developed for the coordination of installation of new meters in new development areas with the City's billing and accounting systems to ensure that new accounts are metered and billed appropriately. The City has also implemented a new construction meter program, whereby the Public Works Department is now installing the meter on the hydrant and providing clamps so that the meter cannot be moved or stolen. These programs were started in Fall 2021 and water loss numbers were reduced immediately. The City will be conducting ongoing investigations to evaluate water loss and make improvements as needed to meet the State's new water loss standards.

4.4.4 Per Capita Potable Water Demand

Historical per capita potable water demands were calculated by dividing the annual potable water production previously presented in Table 4-2 by the respective annual population previously presented in Table 4-1. Table 4-7 summarizes the per capita potable water demands for the City between 2009 and 2020. As shown in Table 4-7, the per capita water demand has averaged approximately 168 gpcd over the past 10 years. The per capita demand decreased significantly in 2015 and 2016 to 144 gpcd and 147 gpcd, respectively. As discussed previously, this sharp decrease in 2015 and 2016 is most likely due to the extreme dry hydrologic (drought) conditions resulting in voluntary and mandatory water conservation. The per capita demand has increased in recent years (2017-2020) as water use restrictions have been lifted and customers have resumed more typical water use behavior.

Figure 4-4 compares the per capita water demand, water production, and population for the period from 2011 to 2020. As shown on Figure 4-4, the population has increased at a relatively constant rate from 2011 to 2020. Therefore, the majority of the variation observed in the per capita water demand is due to variations in the City's total water production, which appears to vary based on economic and hydrologic conditions.

A comparison of per capita water demands with the goals set by SB X7-7 legislation is discussed below in *Section 4.6 Water Conservation and Water Use Efficiency* and *Section 4.9 Future Per Capita Water Use Projections*.

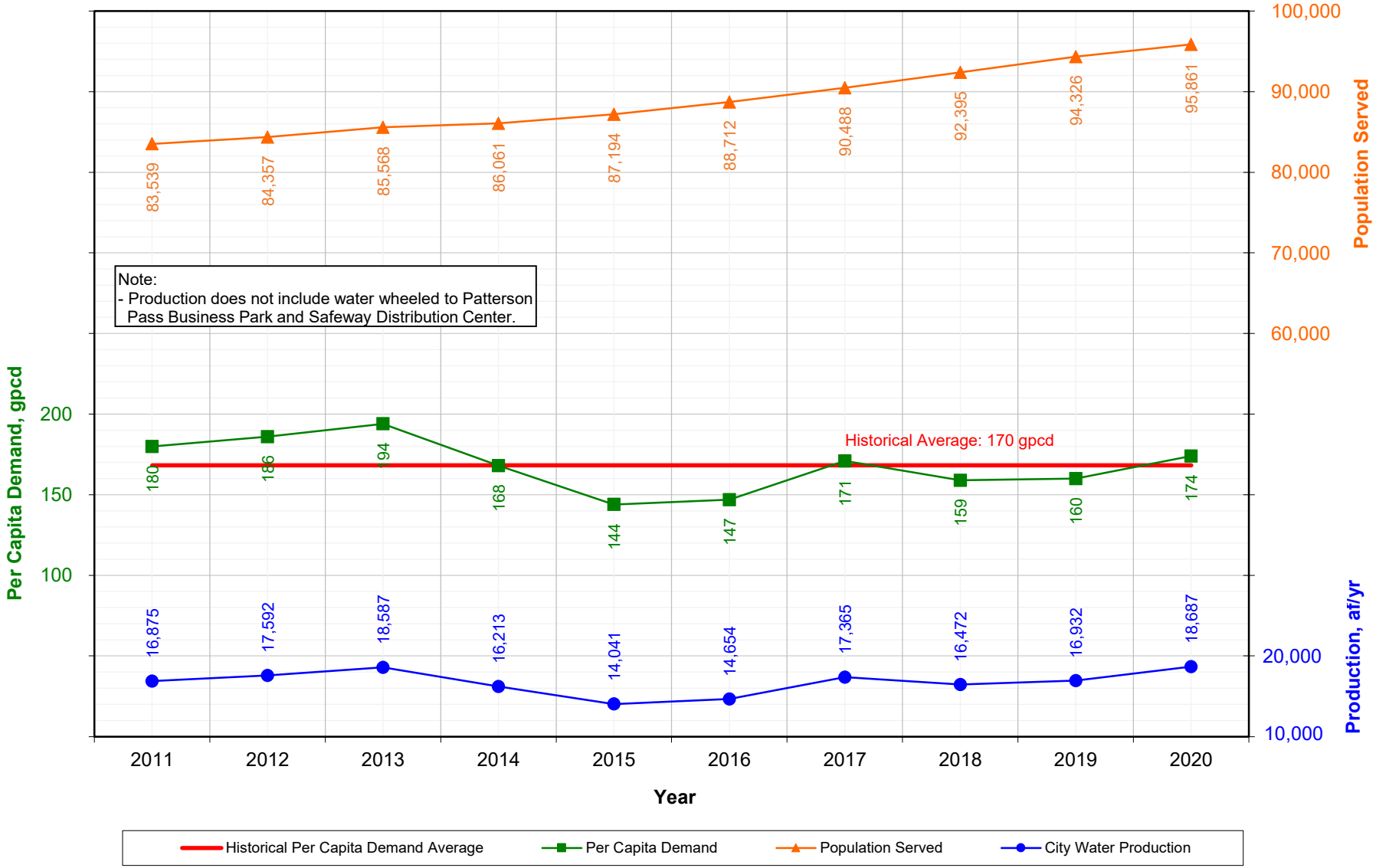
Table 4-7. Historical Per Capita Potable Water Demand

Year	Population Served[(a)]	City Potable Water Production, af/yr[(b)]	Per Capita Potable Water Demand, gpcd	5-yr Average Per Capita Potable Water Demand, gpcd	10-yr Average Per Capita Potable Water Demand, gpcd
2009	82,040	16,693	182		
2010	82,922	16,651	179		
2011	83,539	16,875	180		
2012	84,357	17,592	186		
2013	85,568	18,587	194		
2014	86,061	16,213	168		
2015	87,194	14,041	144		
2016	88,712	14,654	147		168
2017	90,488	17,365	171		
2018	92,395	16,472	159	162	
2019	94,326	16,932	160		
2020	95,861	18,687	174		

(a) Source: Refer to Table 4-1.

(b) Source: Refer to Table 4-2. Includes UAFW. Does not include water wheeled to Patterson Pass Business Park and Safeway Distribution Center, as these are located outside of the City limits.

Figure 4-4. Comparison of Historical Per Capita Water Demand, Production and Population



4.5 EXISTING RECYCLED WATER PRODUCTION AND CONSUMPTION

The City anticipates using recycled water for landscape irrigation to offset potable water demands. The City's Wastewater Treatment Plant can currently produce up to approximately 9 mgd of tertiary-treated wastewater meeting Title 22 requirements, which can be used for landscape irrigation and other non-potable uses. Initially, the City intends to irrigate using recycled water at the Legacy Fields sports complex.

4.6 WATER CONSERVATION AND WATER USE EFFICIENCY

As discussed in Chapter 2, the City has developed a list of principles for sustainable infrastructure to ensure a reliable water supply for future generations. A key principle that relates to the Citywide Water System Master Plan Update is water conservation and water use efficiency. Water conservation and water use efficiency will be necessary to meet requirements set by the State (e.g., the Water Conservation Act of 2009 and Making Water Conservation a California Way of Life legislation) to reduce the City's per capita water use. Discussions regarding existing and future water conservation and water use efficiency in the City are presented below.

4.6.1 Existing Water Conservation

The City is committed to preserving California's water resources through water conservation and efficient use of water, and currently has an ongoing Water Conservation Plan that implements the Best Management Practices (BMPs) which were developed by the California Urban Water Conservation Council (CUWCC)[3]. These BMPs include residential surveys, public and school education programs, rebates for water efficient appliances and other specific programs. These programs have been successful in reducing the City's water use, especially in the recent dry years.

4.6.2 Compliance with the Water Conservation Act of 2009 (SB X7-7)

In February 2008, Governor Arnold Schwarzenegger called for a statewide 20 percent reduction in per capita water use by 2020 and asked State and local agencies to develop a more aggressive plan of water conservation to achieve the goal. A team of State and federal agencies (the 20x2020 Agency Team) consisting of the DWR, SWRCB, California Energy Commission, Public Utilities Commission, Department of Public Health, California Air Resources Board, CALFED Program, the USBR, and the CUWCC was formed to develop a statewide implementation plan for achieving this goal.

Then, on November 10, 2009, Governor Arnold Schwarzenegger signed Senate Bill X7-7 (SB X7-7), one of several bills passed as part of a comprehensive set of Delta and water policy legislation. SB X7-7, known as the Water Conservation Act of 2009, requires a 20 percent reduction in urban water usage by 2020 and establishes various methodologies for urban water suppliers to establish their interim (2015) and final (2020) per capita water use targets.

[3] It should be noted that the CUWCC was replaced by a new organization, the California Water Efficiency Partnership (CalWEP), in March of 2018.

As documented in the City's 2015 UWMP, the City's adopted per capita water use targets were 204 gpcd (2015 interim target) and 181 gpcd (2020 final target). As documented in the City's 2015 UWMP, the City's per capita water use in 2015 was 146 gpcd, which was well below the 2015 interim target[4]. In recent years there has been some rebound in per capita water use from the historic low in 2015 (see Table 4-7 and Figure 4-4). As documented in the City's 2020 UWMP, the City's per capita water use in 2020 was 181 gpcd, equal to its 2020 final target[5].

4.6.3 Making Water Conservation a California Way of Life

In May 2016, Governor Jerry Brown signed Executive Order B-37-16, instructing State agencies to help Californians adopt permanent changes to use water more wisely. The Executive Order laid out a framework for moving the State from temporary, emergency water conservation measures to a more lasting approach customized to the unique conditions of each local water agency.

In May 2018, the California State Legislature (Legislature) enacted two policy bills (SB 606 and AB 1668) to establish a new foundation for long-term improvements in water conservation and drought planning to adapt to climate change and the resulting longer and more intense droughts in California. These two bills amended existing law to expand authorities and requirements to enable permanent changes and actions for those purposes to improve the State's water future for generations to come. SB 606 and AB 1668 are direct outcomes of Governor Brown's Executive Order B-37-16.

The recommendations in the April 2017 report entitled "Making Water Conservation a California Way of Life, Implementing Executive Order B-37-16" and subsequent extensive legislative outreach efforts informed the development of SB 606 and AB 1668. The new laws focus on establishing water use objectives and long-term water efficiency standards that apply to urban retail water suppliers, including:

- **Indoor Residential Water Use:** Although not all standards have been developed, the indoor residential water use efficiency standard has been set by the Legislature. Until January 1, 2025, the standard is set at 55 gpcd, then it drops to the greater of 52.5 gpcd or a standard developed by the DWR between January 2, 2025 and January 1, 2030; and then the greater of 50 gpcd or a standard developed by DWR after January 1, 2030.

[4] It should be noted that the 2015 per capita water use calculated in the City's 2015 UWMP (146 gpcd) is slightly higher than the 2015 per capita water use shown in Table 4-7 and Figure 4-4. The difference is due to a slightly different service area population in the 2015 UWMP per capita water use population.

[5] It should be noted that the 2020 per capita water use calculated in the City's 2020 UWMP (181 gpcd) is slightly higher than the 2020 per capita water use shown in Table 4-7 and Figure 4-4. The difference is due to the inclusion of the Larch Clover CSD in the service area population and the inclusion of the water production wheeled to the PPBP in the 2020 UWMP per capita water use calculation.

- **Outdoor Residential Water Use and Commercial, Industrial and Institutional (CII) Irrigation with Dedicated Meters:** Per SB 606 and AB 1668, the SWRCB is required to adopt long-term standards for outdoor irrigation of landscape areas by June 30, 2022. The standards to be set shall incorporate the principles of the State's MWELO[6], which considers evapotranspiration adjustment factors, landscape areas, maximum applied water allowance, reference evapotranspiration, and special landscape area.
- **Water Loss (due to leaks in water system pipes):** With regard to water loss standards, SB 555, passed in October 2015, requires the SWRCB to develop water loss performance standards for urban retail water suppliers. The SWRCB is required to evaluate the life-cycle cost of achieving these standards. The standards will incorporate local and operational conditions to determine economically achievable water loss reduction for each urban retail water supplier.

The recently passed water efficiency legislation only provides a "provisional standard" for indoor residential water use and does not currently provide specific information on what the water efficiency standards will be for outdoor residential water use and non-residential water uses. These standards will be developed in the coming years and should be further evaluated in subsequent planning studies. Also, there are no guarantees that urban retail water suppliers will meet the water efficiency standards to be set, so West Yost recommends that the City continue to consider more conservative water demand projections based on recent water use for their future water supply and system planning.

4.7 ADOPTED PEAKING FACTORS

Peaking factors are used to calculate water demands expected under high demand conditions (i.e., maximum day and peak hour). The resulting water demands calculated for maximum day and peak hour conditions are then used to evaluate and size transmission/distribution pipelines and storage facilities, and to define water supply needs and capacity requirements. This section describes the methodology used to develop peaking factors for the maximum day and peak hour demand conditions within the City's potable and recycled water systems.

4.7.1 Potable Water System Peaking Factors

Table 4-8 summarizes the average and maximum day production and the corresponding peaking factors between 2010 and 2018. As shown in Table 4-8, the maximum day peaking factor for the City ranged from a low of 1.5 in 2015 and 2017 to a high of 1.8 in 2018. The average maximum day peaking factor from 2010 to 2018 is equal to 1.6 times the average day demand.

The City currently has an adopted maximum day peaking factor of 2.0 times the average day demand, which is higher than what has been observed in recent years. Based on the data from more recent maximum day trends, this higher peaking factor provides a very conservative estimate of the required water supply and distribution facilities to support projected water demands.

[6] California Code of Regulations Title 23 Chapter 2.7 Model Water Efficient Landscape Ordinance.

Consequently, for planning purposes in this Citywide Water System Master Plan Update, a maximum day peaking factor of 1.7 was adopted. This factor provides a slightly more conservative estimate of maximum day demands when compared with the 2010 to 2018 average maximum day peaking factor of 1.6, but will not excessively overestimate maximum day demands as compared with the City's current adopted maximum day peaking factor of 2.0.

Table 4-8. Historical Maximum Day Demand Peaking Factors

Year	Date[a]	Maximum Day Production, mgd[a]	Average Day Production, mgd[b]	Maximum Day to Average Day Factor
2010	July 17	25.8	15.2	1.7
2011	July 28	25.5	15.5	1.6
2012	July 13	27.8	16.2	1.7
2013	June 8	27.0	17.1	1.6
2014	June 9	24.9	15.0	1.7
2015	June 20	19.8	13.1	1.5
2016	August 8	22.0	13.7	1.6
2017	August 1	25.0	16.2	1.5
2018[c]	August 17	27.2	15.3	1.8
			Average	**1.6**

(a) Source: Max Day Data 201810221430.pdf received from the City on October 22, 2018.
(b) Source: Refer to Table 4-3. Includes water wheeled to Patterson Pass Business Park and Safeway Distribution Center.
(c) Maximum day production data for 2018 is from compiled SCADA data received from the City on May 3, 2019.

The City currently has an adopted peak hour demand factor of 3.4 times the average day demand, equivalent to a factor of 1.7 times the maximum day demand. SCADA data from 2018 was used to confirm the peak hour factor, which was found to be 1.6 times the maximum day demand. This confirms that the currently adopted peak hour factor of 1.7 times the maximum day demand is still accurate; this factor will continue to be used for planning purposes in this Citywide Water System Master Plan Update. However, because the adopted maximum day demand factor has been decreased from 2.0 times the average day demand to 1.7 times the average day demand, the new adopted peak hour demand factor used for planning purposes in this Citywide Water System Master Plan Update will be 2.9 times the average day demand.

4.7.2 Recycled Water System Peaking Factors

Peaking factors for recycled water systems are somewhat different from potable water systems, in that irrigation periods are generally limited to shorter time periods, typically during the late evenings and very early mornings (e.g., 10 p.m. to 6 a.m.). For purposes of this Citywide Water System Master Plan Update, an irrigation period of eight (8) hours per day has been assumed. In addition, recycled water demand is anticipated to be at its maximum during the summer and fall months when temperatures and landscape irrigation water demands are at their highest.

To estimate future monthly recycled water use, the City's existing monthly potable water use for its dedicated landscape irrigation accounts was evaluated. Based on 2017 data, monthly irrigation water use reaches a maximum in September with irrigation water use equal to 17.6 percent of the total annual irrigation water use. This percentage of irrigation water use during the maximum month can be converted to an average day to maximum day peaking factor equal to 6.4 times the average day irrigation demand (0.176/30 days x 365 days x [24 hours/8-hour irrigation period]). This factor is higher than the currently adopted factor of 5.8 times the average day irrigation demand. To be conservative, for planning purposes in this Citywide Water System Master Plan Update, the new (higher) maximum day irrigation peaking factor of 6.4 was adopted.

The peak hour recycled water demand was assumed to be approximately 10 percent above the maximum day irrigation demand, which equates to a peak hour peaking factor of 7.0 (1.1 x 6.4).

Table 4-9 summarizes the maximum day and peak hour peaking factors adopted for this Citywide Water System Master Plan Update.

Table 4-9. Adopted Peaking Factors

Demand Condition	Potable Water System	Recycled Water System
Average Day	Annual Use divided by 365 days per year	Annual Use divided by 365 days per year
Maximum Day	1.7 times the Average Day Demand	6.4 times the Average Day Demand (assuming an 8-hour irrigation period)
Peak Hour	2.9 times the Average Day Demand	7.0 times the Average Day Demand (10% above Maximum Day Demand)

4.8 FUTURE WATER DEMAND PROJECTIONS

Future water demands projections consist of two components: (1) existing (baseline) water demands, and (2) projected water demands from new developments calculated using unit water demand factors and the land use assumptions discussed previously in Chapter 3 and presented in Appendix A.

Using the land use assumptions presented in Appendix A, future water demands were calculated using a unit water demand methodology based on the proposed land use acreage or residential dwelling units projected for each project or development area. Subsequent sections describe the current unit water demand factors adopted in the 2012 WSMP and the development of the updated unit water demand factors used to calculate future water demands for this Citywide Water System Master Plan Update, followed by a discussion of total projected water demands for the 2025, 2040, and buildout time frames.

4.8.1 Existing Unit Water Demand Factors and Land Use Assumptions

In the 2012 WSMP, unit water demand factors were generally developed by correlating land use data with existing metered water use. The City's existing unit water demand factors are summarized in Table 4-10. These factors are typically multiplied by dwelling units or land use area data to calculate a projected water demand estimate.

Table 4-10. 2012 WSMP Adopted Unit Water Demand Factors

Land Use Designation	Unit Water Demand Factor		
	gpcd	gpd/du	af/ac/yr
Residential – Very Low Density[a]	130	429	--
Residential – Low Density[a]	130	429	--
Residential – Medium Density[b]	115	310	--
Residential – High Density[b]	100	220	--
Residential – Very High Density	100	150	--
Commercial[c]	--	--	2.0
Office[c]	--	--	1.5
Industrial[c,d]	--	--	1.5
Institutional[c]	--	--	1.5
Parks[e]	--	--	4.0

(a) Assumes exterior water use will be with potable water, except for parks.
(b) Assumes exterior water use will be with recycled water (i.e., 15 percent of the total gross acres will be landscaped and irrigated with recycled water).
(c) Unit water demand factor to be applied to 85 percent of the total gross acres only, assuming that 15 percent of the total gross acres will be landscaped and irrigated with recycled water.
(d) Assumes that high water use industries will not be developed.
(e) Unit water demand factor to be applied to 15 percent of the total gross acres and/or any gross acreage that will require exterior water use.

In addition to these adopted unit water demand factors, the City has also used the following specific assumptions regarding dwelling units per acre for each residential land use type and floor to area ratios (FAR) for Commercial and Industrial land uses. These assumptions help to further refine water demand estimates from various proposed development projects that do not have a specific dwelling unit count or floor area estimate available. Table 4-11 summarizes the adopted dwelling unit and FAR assumptions that the City has recommended for estimating future water demands.

Table 4-11. Adopted Dwelling Unit Densities and Floor to Area Ratios[a]

Land Use Designation	Range	Recommended Density or Ratio
Residential – Very Low Density	0.1 to 2.0 du/acre	1.5 du/acre
Residential – Low Density	2.1 to 5.8 du/acre	4.35 du/acre
Residential – Medium Density	5.9 to 12.0 du/acre	9 du/acre
Residential – High Density	12.1 to 25 du/acre	18.75 du/acre
Residential – Very High Density	Up to 40 du/acre[b]	--
Commercial	Maximum FAR 1.0	FAR 0.3
Office	Maximum FAR 1.0	FAR 0.3
Industrial	Maximum FAR 0.5	FAR 0.4

(a) Source: General Plan, DC&E (February 1, 2011).
(b) Source: Water Supply Assessment for the Downtown Specific Plan, West Yost Associates (April 2009).

4.8.2 Verification of Unit Water Demand Factors

Due to possible changes in water use patterns over time, the existing unit water demand factors presented in Table 4-10 were verified to confirm if they are still representative of the City's more recent water use patterns. Unit water demand factors that are refined using more recent water use data help to project more accurate water demands. The following sections discuss the methodologies used to "spot check" and verify existing residential and non-residential unit water demand factors.

4.8.2.1 General Methodology

Unit water demand factors were verified using existing land use and parcel information in Geographic Information System (GIS) format, which were correlated to existing (2017) metered water use data. Meter data from 2017 was used to verify the unit water demand factors because it was (1) the most recent data available at the time of the evaluation, and (2) more representative of normal water use than 2015 or 2016 data when there were mandatory water use restrictions in place. To calculate unit water demand factors by land use designation, the City's existing land use data was first added to the parcel data using GIS analysis tools. Metered water use data was then automatically linked to the land use/parcel data by service addresses first or manually by location if needed. The unit water demand factor for each land use designation was then calculated by dividing the total metered water use by the total parcel area for which it was linked.

The parcel area used in this initial calculation did not include streets and therefore represented net area. Accordingly, the unit water demand factors calculated were "net" factors. Subsequently, the "net" unit water demand factors were adjusted to account for acreage from streets so they could be applied to the gross acreage information provided by City staff for future development[7]. The following sections describe the updated unit water demand factors first for residential land uses and then for non-residential land uses.

Typically, metered water use data used to determine unit water demand factors would be normalized to represent average water use across multiple years. Although it is expected that some increase or "rebound" in water demand from 2017 could potentially occur in the future, a portion of the observed reduction in water use will likely be permanent. This is supported by the City's 2018 water production, which was less than 2017 water production. Therefore, due to these permanent changes in water use, the 2017 metered water use data was not normalized based on historical water use.

[7] The gross acreage within the existing City limits is 16,616 acres, and the net acreage within the City limits assigned an existing or planned land use is 13,607 acres. Therefore, a factor of 1.22 was used to convert from net acreage to gross acreage.

4.8.2.2 Residential Unit Water Demand Factors

Single family residential unit water demand factors (Residential-Very Low Density and Residential-Low Density land uses) were refined by automatically linking metered water use to parcels by service address. Single family residences are typically served by a single meter, and there is typically only one single family residence on a given parcel. Because of this one-to-one relationship between meters and parcels, the unit water demand factors for single family residences could be accurately calculated using this method. In summary, 87 percent of the existing single family residential parcels were linked with a water meter by service address. Figure 4-5 illustrates the methodology used to calculate the refined unit water demand factors for single family residential land use types.

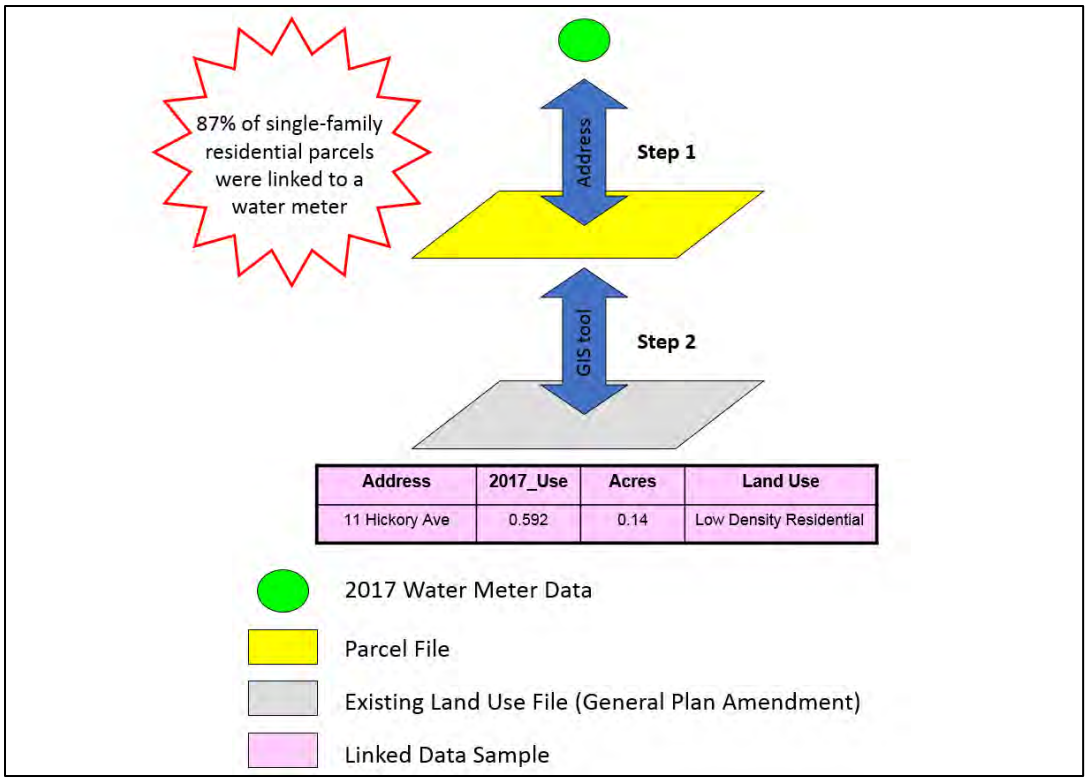


Figure 4-5. Residential Unit Water Demand Factor Methodology

Table 4-12 presents the unit water demand factors calculated using the methodology described above. The calculated Residential-Very Low Density factor is 8 percent higher than the factor adopted in the 2012 WSMP. Because this factor is based on a small sample size of 83 parcels, it is recommended that no adjustment be made to the Residential-Very Low Density unit water demand factor. The calculated Residential-Low Density factor is 14 percent lower than the factor adopted in the 2012 WSMP. Although some rebound in water use from 2017 is expected in existing residences, it is also projected that a combination of future State-mandated conservation measures and the installation of water efficient appliances and landscaping in new homes will lower residential water use even further in the future. Therefore, it is recommended that the Low Density Residential unit water use factor be adjusted 15 percent lower than the adopted 2012 WSMP factor to reflect more recent water use trends.

Table 4-12. Refined Single-Family Residential Unit Water Demand Factors

Land Use Designation	2017 Metered Water Use Linked, af/yr	Number of Occupied Parcels/Dwelling Units Linked[(a)]	Calculated Unit Water Demand Factor, gpd/du[(b)]	2012 WSMP Unit Water Demand Factor, gpd/du	Calculated Change in Unit Water Demand Factor, %	Recommended Change in Unit Water Demand Factor, %
Residential – Very Low Density	43	83	464	429	8%	0%
Residential – Low Density	6,238	15,139	368	429	-14%	-15%

(a) Does not include vacant parcels (parcels with no water use in 2017).
(b) Assumes one dwelling unit per parcel.

Residential-Medium, Residential-High Density, and Residential-Very High Density land uses generally have multiple meters and multiple addresses associated with a single parcel. Because of this, the methodology described above to calculate unit water demand factors often underestimates the unit water demand factors for these land use categories because not all the meters which supply a given parcel can be automatically linked with a single parcel address. Therefore, the unit water demand factors for Residential-Medium, Residential-High Density, and Residential-Very High Density land uses are recommended to be reduced by 15 percent, consistent with the adjustment for the Residential-Low Density factor.

4.8.2.3 Non-Residential Unit Water Demand Factors

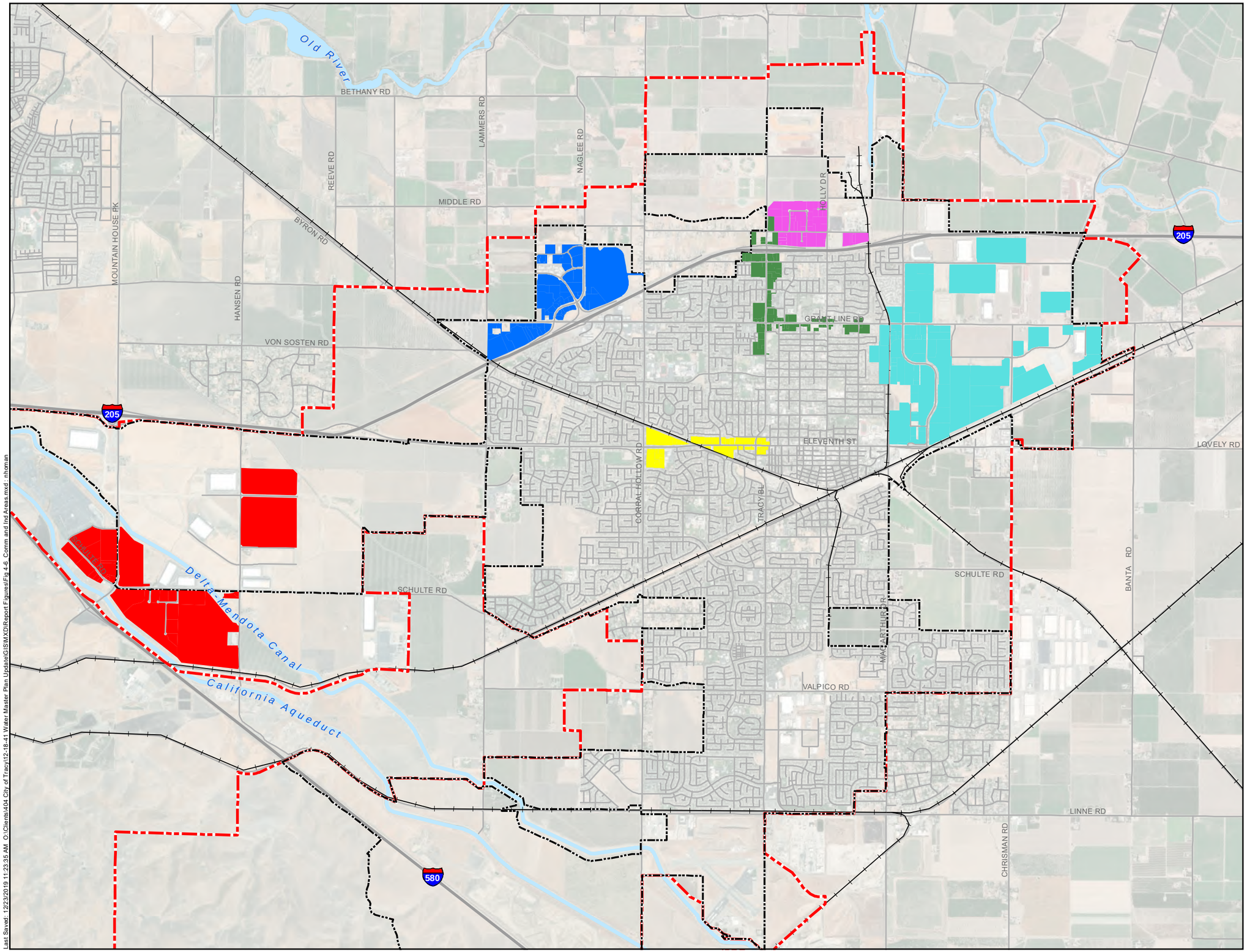
Non-residential land uses generally have multiple water service meters (e.g., domestic and irrigation meters) and multiple addresses associated with a single parcel. Because of this, automatically linking metered water use from multiple meters to a single parcel by address is difficult and would generally underestimate the unit water demand factors for non-residential land use categories because not all the meters which supply a single parcel can be automatically linked with that parcel. Therefore, a different methodology was used to "spot check" and refine the unit water demand factors for non-residential land use categories.

Representative areas of the City with high concentrations of Commercial and Industrial land uses were first selected as shown on Figure 4-6, and the metered water use from water meters in these areas were manually associated with parcels based on each meter's spatial location. From the metered water use and parcel acreage that were linked through this process, unit water demand factors were then calculated for each of these representative areas, which are summarized in Table 4-13.

Unit water demand factors for Commercial land use in the representative areas varied from 1.4 to 2.0 acre-feet per acre per year (af/ac/yr). The much lower factor for the Naglee Mall and West Grant Line Road Shopping Center is likely due to the inclusion of large parking lots which serve the Mall and Shopping Center in the gross acreage linked. The average unit water demand factor for the representative Commercial areas is 1.7 af/ac/yr. To be conservative, it is recommended that a Commercial unit water demand factor of 1.8 af/ac/yr, which is slightly above the average, be adopted. This represents approximately a 10 percent reduction from the 2012 WSMP factor of 2.0 af/ac/yr.

Unit water demand factors for Industrial land use in the representative areas varied from 0.8 to 1.3 af/ac/yr. The Northeast Industrial area likely has a higher factor due to the presence of high water use industries such as food processing plants. The IPC and Patterson Pass Business Park areas have a much lower factor because most of the existing buildings are warehouses with low water use. To be conservative, it is recommended that a unit water demand factor of 1.3 af/ac/yr be adopted as the new Industrial unit water demand factor to accommodate the wide range of possible Industrial water uses for planning purposes. This represents approximately a 13 percent reduction from the 2012 WSMP factor of 1.5 af/ac/yr.

The unit water demand factor for Office land use was also calculated using this procedure. However, since there are no highly concentrated areas of Office land use in the City, and the amount of Office land use is relatively small, the metered water use from water meters for all Office parcels was manually linked with each Office parcel to calculate an Office unit water demand factor. The unit water demand factor calculated in this manner was found to have slightly increased from the 2012 WSMP factor of 1.5 af/ac/yr. However, it is recommended that no adjustment be made to the Office unit water demand factor.



Symbology

- City Limits
- Sphere of Influence

Representative Commercial Areas

- Naglee Mall and Grant Line Road Shopping Center
- Tracy Boulevard and East Grant Line Road
- Eleventh Street

Representative Industrial Areas

- Northeast Industrial Area
- Northern Industrial Area
- IPC/Patterson Pass Business Park

TRACY

WEST YOST ASSOCIATES

Figure 4-6

Representative Commercial and Industrial Areas

City of Tracy
Water System Master Plan Update

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Table 4-13. Unit Water Demand Factors for Commercial, Industrial, and Office Land Uses

Representative Area	2017 Water Use Linked, af/yr	Gross Acreage Linked[(a)]	Unit Water Demand Factor, af/ac/yr
Commercial Land Use			
Naglee Mall and West Grant Line Road Shopping Center	426	313	1.4
Tracy Boulevard and East Grant Line Road	253	126	2.0
Eleventh Street	135	81	1.7
		Average	**1.7**
Industrial Land Use			
Northeast Industrial Area	1,134	900	1.3
Northern Industrial Area	109	130	0.8
IPC/Patterson Pass Business Park	623	730	0.9
		Average	**1.0**
Office Land Use			
All Existing Parcels	87	56	1.6

(a) A factor of 1.22 was used to convert from net acreage to gross acreage.

For Institutional land use, the water meter data which could be linked was insufficient to justify adjusting the Institutional unit water demand factor.

Similarly, the water meter data which could be linked with Parks land use parcels was also insufficient to justify adjusting the Parks unit water demand factor. However, the Parks factor was compared with the maximum allowable water use for parks per MWELO[8] to verify that it did not exceed the maximum allowable usage. As shown in Table 4-14, the maximum allowable water use for parks, which qualify as special landscape areas, is 4.3 af/ac/yr based on MWELO guidelines. Since this is greater than the current Parks unit water demand factor of 4.0 af/ac/yr, it is recommended that no adjustment be made to the Parks unit water demand factor. This factor will also be used for all recycled water irrigation areas within the City.

In the 2012 WSMP, the Parks unit water demand factor was used to calculate water use for irrigated areas for residential and non-residential land uses. However, under current MWELO guidelines, the maximum allowable water use for potable water irrigation in residential and non-residential land use areas is restricted to approximately 2.4 and 1.9 af/ac/yr, respectively, as shown in Table 4-14. Therefore, these factors will be adopted for planning purposes in this Citywide Water System Master Plan Update to comply with MWELO and the City's Water Efficient Landscape Ordinance.

[8] The State's MWELO was adopted by the City of Tracy as part of its Water Efficient Landscape Ordinance (City of Tracy Municipal Code, Chapter 11.28 Water Management, Article 8 Water Efficient Landscape Ordinance).

Table 4-14. City of Tracy Maximum Allowable Water Use Factors for Irrigation[a]		
Land Use	Maximum ETAF[b]	Water Use Factor, af/ac/yr
Special Landscape Areas[c]	1.00	4.3
Residential	0.55	2.4
Non-Residential	0.45	1.9

(a) Based on the California Code of Regulations, Title 23 Waters, Division 2 DWR, Chapter 2.7 Model Water Efficient Landscape Ordinance (MWELO), updated 2015 and included in the City of Tracy Municipal Code Chapter 11.28 Water Management, Article 8 Water Efficient Landscape Ordinance.
(b) ETAF = Evapotranspiration Adjustment Factor = (Plant Factor based on Hydrozone Area)/(Irrigation Efficiency).
(c) Special Landscape Areas are areas dedicated solely to edible plants, recreational areas, areas irrigated with recycled water, or water features using recycled water.

4.8.3 Adopted Unit Water Demand Factors

As discussed above, most of the unit water demand factors were verified and refined (if needed) by linking metered water use data to existing land use data either automatically by service address or manually by location. Table 4-15 summarizes the unit water demand factors adopted for this Citywide Water System Master Plan Update. Based on work completed to "spot check" and refine these adopted factors, they are appropriate for use in projecting future water demands as discussed in the following sections.

Table 4-15. Adopted Unit Water Demand Factors			
Land Use Designation	gpd/du	af/ac/yr	Percent Change from 2012 WSMP, %
Residential – Very Low Density[a]	429	--	0
Residential – Low Density[a]	365	--	-15
Residential – Medium Density[b]	264	--	-15
Residential – High Density[b]	187	--	-15
Residential – Very High Density[b]	128	--	-15
Commercial[c]	--	1.8	-10
Office[c]	--	1.5	0
Industrial[c]	--	1.3	-13
Institutional[c,d]	--	1.5	0
Parks and Areas Irrigated with Recycled Water[d,e]	--	4.0	0
Other Irrigated Area - Residential[f,g]	--	2.4	NA
Other Irrigated Area - Non-Residential[f,h]	--	1.9	NA

(a) Includes exterior water use.
(b) Does not include exterior water use. Assumes that 15 percent of the total gross acres will be landscaped and irrigated.
(c) Does not include exterior water use. Water demand factor to be applied to 85 percent of the total gross acres only, assuming that 15 percent of the total gross acres will be landscaped and irrigated.
(d) Insufficient data available to adjust factor using water meter data; therefore, no adjustment was made.
(e) Factor to be used for turf, recreational areas, edible plants, and areas irrigated with recycled water.
(f) Based on the Maximum Allowable Water Use per MWELO and the City's Water Efficient Landscape Ordinance.
(g) Unit water demand factor to be applied to gross acreage in residential areas that will require potable water for exterior water use.
(h) Unit water demand factor to be applied to gross acreage in non-residential areas that will require potable water for exterior water use.

4.8.4 Existing (Baseline) Water Demands

For this Citywide Water System Master Plan Update, the total "existing" water demand component used for future water demand projections was calculated as the sum of the water delivered to the PPBP and IPC in 2017 plus the City's average water production from 2005 to 2013 for a total of approximately 18,400 af/yr. Because the PPBP and IPC have been growing rapidly, recent water production data was considered the most representative of existing water use for these areas. However, due to the recent drought and associated conservation measures, water production data from 2014 through 2016 were considered less representative of future water use in other areas of the City. It should be noted that the estimated existing baseline water demand of 18,400 af/yr is very similar to the average total water production for 2019 and 2020 (18,600 af/yr), thus validating the estimated existing baseline demand.

Because the water delivered to PPBP is wheeled water, only approximately 17,800 af/yr of the existing water demands must be met by the City's water supply agreements and contracts. The City is responsible for delivering the remaining 600 af/yr to PPBP, and must have adequate water treatment capacity, pumping capacity, and transmission capacity to serve a total of 18,400 af/yr, in addition to projected future water demands.

4.8.5 Recycled Water Use Assumptions

Recycled water will be used as a source of water supply for landscape irrigation and other non-potable uses to offset potable water demands on a project-by-project basis where feasible. The City has constructed a recycled water transmission line which extends south along Lammers Road to the intersection with Schulte Road, and further expansions to the recycled water system are planned in the future.

For this Citywide Water System Master Plan Update, the following assumptions were made regarding the recycled water system:

- The transmission main in Lammers Road will be extended south to the Delta Mendota Canal by 2025. Most large development projects located on the west side of the City will be served by the recycled water system by 2025, except for Cordes Ranch, West Side Industrial, and Tracy Hills Specific Plans.
- Recycled water service will be extended to Cordes Ranch, West Side Industrial, and Tracy Hills Specific Plans by 2040.
- Future recycled water service areas on the east side of the City (East Side Industrial, Chrisman Road, UR 1, and Rocha), will be served by a separate recycled water transmission main which will not be constructed until after 2040.
- Recycled water service will not be extended to developments in the following areas due to the isolated locations and relatively small individual potential recycled water demands within them:
  - I-205 Corridor Specific Plan
  - Industrial Areas Specific Plan
  - Northeast Industrial Specific Plan

  - Berg Road Subdivision
  - Berg/Byron Remainder
  - Other small approved projects (refer to Table 3-1, footnote (f) for the full list)
  - Miscellaneous Infill
- Only a small number of existing parks and irrigated areas located close to the recycled water transmission main alignments will be converted to recycled water service.
- Within new developments served by recycled water, 15 percent of gross acreage for Residential – Medium Density, Residential – High Density, Residential – Very High Density, Commercial, Office, Industrial, and Institutional land uses will be irrigated with recycled water. This represents irrigation use for common landscaped areas and roadway medians.
- Within new developments served by recycled water, 11.2 percent[9] of gross acreage for Residential – Very Low Density, Residential – Low Density, and Residential – Medium Density land uses will develop as neighborhood and community parks which will be irrigated with recycled water.
- Front yards of single-family residences in the Residential – Very Low Density and Residential – Low Density will be irrigated with potable water, even in developments served by recycled water.
- UAFW for the recycled water system will be 5 percent (consistent with the 2015 UWMP).

Potable water demand offsets from recycled water use will be accounted for in the projected water demands. Demands from irrigated acreage in development projects with recycled water supply available will be calculated using the recycled water demand factor of 4.0 af/ac/yr.

4.8.6 Projected Buildout Water Demands

Projected water demands for the 2025, 2040, and buildout time frames were calculated by multiplying the adopted unit water demand factors (refer to Table 4-15) by the additional future dwelling units or gross acreage projected to occur. As discussed in Chapter 3, data regarding the additional future dwelling units and gross acreage to be developed was provided by the City's Planning Division or referenced from available planning documents.

The resulting future water demand projections from the projected future developments were adjusted to account for UAFW and then added to the existing water demands to provide a projection of the total water production required for each of the evaluated time frames. Refer to Appendix A for detailed land use assumptions and water demand calculations.

[9] Consistent with assumption in Appendix D of the 2012 WSMP. A comparison of the future parks area calculated using this assumption and the projection of required park area from the City's 2013 Parks Master Plan showed them to be within 1 percent of each other.

Table 4-16 summarizes the projected potable and recycled water production for the City at the 2025, 2040, and buildout time frames. As shown in Table 4-16, even with the use of recycled water, the City's potable water production is projected to almost double at buildout (from 17,800 af/yr to 33,500 af/yr). Most of the increase in water demand is associated with new development within the City's specific plans and future service areas. Approximately 70 percent of the increase in potable water demands and 65 percent of the increase in recycled water demands are projected to occur by 2040.

The estimated buildout potable water production is approximately 8 percent lower than the previous estimate of 36,300 af/yr, as presented in the City's 2012 WSMP. Although many of the unit water demand factors have been decreased by 10 to 15 percent compared to those used in the 2012 WSMP, the projected buildout potable water production did not decrease substantially because:

- The current buildout land use projections include approximately 5,600 more dwelling units than what was assumed in the 2012 WSMP. Although the projected buildout acreage for non-residential land uses (primarily Commercial and Industrial) has decreased since the 2012 WSMP, residential developments typically use more water than non-residential developments; and
- The potable water UAFW factor was increased from the 7.5 percent factor used in the 2012 WSMP to 9.6 percent.

The estimated buildout recycled water production is approximately 16 percent lower than the previous estimate of 7,500 af/yr as presented in the City's 2012 WSMP. This is because:

- The 2012 WSMP included the Gateway Exchange Program, in which recycled water service would be extended to most of the existing parks and large irrigated areas in the City to offset the potable water demands from the Gateway development (now called Westside). The Gateway Exchange Program is no longer being considered, and it is projected that only a few existing parks and irrigated areas will receive recycled water supply;
- The Tracy Hills Specific Plan previously included a large golf course which was to be irrigated with recycled water. The golf course area is now projected to remain un-irrigated open space instead; and
- The recycled water UAFW factor was decreased from the 7.5 percent factor used in the 2012 WSMP to 5.0 percent.

Table 4-16. Summary of Future Projected Water Production[a,b,c]

Demand Category	2025 (Near Term)		2040		Buildout	
	Potable Water, af/yr	Recycled Water, af/yr	Potable Water, af/yr	Recycled Water, af/yr	Potable Water, af/yr	Recycled Water, af/yr
Future	3,000	900	10,900	4,100	15,700	6,200
Existing - City[d]	17,800	100	17,800	100	17,800	100
Total to be Met by City Water Supply Contracts and Rights	**20,800**	**1,000**	**28,700**	**4,200**	**33,500**	**6,300**
Existing - PPBP Wheeled Water[e]	600	0	600	0	600	0
Total to be Delivered by City Distribution System	**21,400**	**1,000**	**29,300**	**4,200**	**34,100**	**6,300**

(a) Refer to Appendix A for detailed water demand calculations.
(b) Includes UAFW.
(c) Totals rounded to the nearest hundred.
(d) Includes water delivered to existing buildings in the IPC.
(e) Does not include water delivered to existing buildings in IPC.

It should be noted that the potable water demand projections presented in the City's 2020 UWMP are slightly different than those presented in Table 4-16 above. The difference is due to the 2020 UWMP using water demand projections from a previous draft of this Citywide Water System Master Plan Update, which have since been revised due to revisions in the 2040 and Buildout land use assumptions, as well as the 2020 UWMP, which included an estimate of passive conservation due to water savings which resulted primarily from: (1) the natural replacement of existing plumbing fixtures with water-efficient models required under current plumbing code standards, and (2) the installation of water-efficient fixtures and equipment in new buildings and retrofits as required under CALGreen Building Code Standards. Overall, these differences are minor, with the 2020 UWMP projecting a 2025 potable water demand of 20,509 af/yr, a 2040 potable water demand of 28,403 af/yr, and a 2045 (Buildout) potable water demand of 33,079 af/yr.

As the City continues to develop, potable water consumption between customer classes is expected to shift due to changes in the City's projected land use composition. Table 4-17 compares the historical average and projected potable water consumption by customer class. As shown in Table 4-17, the residential customer classes are expected to decrease their overall potable water consumption proportion as water use shifts towards non-residential customer classes. Although, as discussed above, the ratio of projected non-residential to residential development has decreased since the 2012 WSMP, the planned development within the City's SOI will still shift towards more non-residential land use. This trend is primarily due to large industrial developments such as Cordes Ranch, West Side Industrial, East Side Industrial, UR 3, and Tracy Hills Phase 5, among others.

Irrigation water use is projected to be a much smaller proportion of the City's potable water use at buildout because (1) many new development areas will be served by the recycled water system at buildout, and (2) some of the City's existing irrigated areas will be converted to recycled water use.

Table 4-17. Historical and Projected Potable Water Consumption by Customer Class

Customer Class	Historical Average Annual Consumption[a], %	Projected Annual Consumption in 2025[b], %	Projected Annual Consumption in 2040[b], %	Projected Annual Consumption at Buildout[b], %
Single-Family Residential[c]	60.1	58.0	54.0	53.3
Multi-Family Residential[d]	6.7	7.6	6.9	8.5
Residential Subtotal	66.8	65.6	60.9	61.7
Commercial[e]	15.4	13.5	14.2	14.2
Industrial	4.9	9.3	16.4	17.6
Irrigation[f]	12.9	11.6	8.4	6.5
Total	**100**	**100**	100	100

(a) Refer to Table 4-4.
(b) Includes existing and projected future potable demands.
(c) Includes projected future residential demands (excluding irrigation) for Residential - Very Low Density, Residential - Low Density, and Residential - Medium Density land use types.
(d) Includes projected future residential demands (excluding irrigation) for Residential - High Density and Residential - Very High Density land use types.
(e) Includes projected future demands (excluding irrigation) for Commercial, Office, and Institutional land use types.
(f) Includes projected future irrigation demands to be served by potable water. Accounts for planned conversions of irrigation services to recycled water use.

4.9 FUTURE PER CAPITA WATER USE PROJECTIONS

The projected potable water demands shown in Table 4-16 were used in combination with population projections to evaluate the City's projected future per capita water use.

Table 4-18 shows the population projections and projected per capita potable water use for the 2040 and buildout time frames. Population projections for 2040 and buildout were estimated by the City's Planning Division based on the planned future development and California Department of Finance data for the number of people per household. Based on these assumptions, the City is projected to have a total future population of approximately 186,000 at buildout, with an overall per capita water use of 161 gpcd.

Table 4-18. Projected Population and Per Capita Potable Water Use

Time Frame	Projected Potable Water Demand, af/yr[a,b]	Projected Population[c]	Per Capita Potable Water Use, gpcd
2040	28,700	170,152	151
Buildout	33,500	185,961	161

(a) Totals rounded to the nearest hundred.
(b) From Table 4-16.
(c) Population projection from the City Planning Division.

CHAPTER 5
Existing and Future Water Supplies

5.1 OVERVIEW

The purpose of this chapter is to provide an updated evaluation of the availability and reliability of the City's existing and additional planned future water supply sources to meet the projected buildout water demands for the City as described in Chapter 4. This chapter includes the following sections:

- Changes to the City's Water Supplies Since the Completion of the 2012 Citywide Water System Master Plan and the 2015 UWMP
- Existing Potable Water Supplies
- Future Potable Water Supplies
- Existing Non-Potable Water Supplies
- Reliability of the City's Water Supplies
- Sufficiency of the City's Water Supplies
- Summary of Water Supply Recommendations

5.2 CHANGES TO THE CITY'S WATER SUPPLIES SINCE THE COMPLETION OF THE 2012 CITYWIDE WATER SYSTEM MASTER PLAN AND THE 2015 URBAN WATER MANAGEMENT PLAN

The 2012 WSMP evaluated the sufficiency of the City's water supplies to meet the then-projected buildout water demands. The City's 2015 UWMP, adopted by the City in July 2016, evaluated the City's existing and future water supplies, together with the City's water conservation programs, and their ability to meet projected future water demands and comply with SB X7-7. Since those documents were completed, significant new residential and commercial development has occurred in the City and planning for future developments has been refined (as described in Chapter 3).

During this same time, the availability and reliability of the City's water supplies have been impacted by drought conditions and associated unprecedented cutbacks in surface water supply deliveries. The City's 2020 UWMP, adopted in June 2021, addresses these changes in water supply availability and reliability. In addition, new legislation has been passed which will further impact future water use and future water supply availability and reliability, including the following:

- Comprehensive groundwater legislation contained in SBs 1168 and 1319, and AB 1739, which are collectively referred to as the Sustainable Groundwater Management Act (SGMA), was approved in September 2014 and became effective on January 1, 2015. The legislative intent of SGMA is to provide sustainable management of groundwater basins, enhance local management of groundwater, establish minimum standards for sustainable groundwater management, and provide local groundwater agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater.

- SB 606 and AB 1668 were passed in May 2018 and established new statewide water use efficiency standards for indoor residential water use, outdoor residential water use, commercial, industrial and institutional irrigation of landscaped areas and water loss. A primer entitled "Making Water Conservation a California Way of Life" was developed to be a reference document for the implementation of the complex 2018 legislation.
- In 2018, the SWRCB adopted amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment) which restrict the use of flows from the Lower San Joaquin River and its tributaries (the Stanislaus, Tuolumne and Merced Rivers) to improve conditions for fish and wildlife. Specifically, the Bay-Delta Plan Amendment restricts the use of flows until 40 percent of unimpaired flows are rededicated for water quality and instream fisheries. This restriction could potentially significantly impact the availability of the City's water supplies from the SSJID. However, due to the uncertainty surrounding the implementation of the Bay-Delta Plan Amendment, SSJID's 2020 UWMP assumed that the Bay-Delta Plan Amendment would not be implemented. In its 2020 UWMP, the City also presents the SSJID reliability assuming that the Bay-Delta Plan Amendment is not implemented, but the City's 2020 UWMP also provided a parallel analysis of reliability assuming that the Bay-Delta Plan Amendment is implemented.

5.3 EXISTING POTABLE WATER SUPPLIES

The City currently receives water supplies from the following sources:

- Untreated surface water from the DMC (CVP) (treated at the City's JJWTP)
- Untreated surface water from BBID pre-1914 rights (treated at the City's JJWTP)
- Treated surface water from the Stanislaus River via the South County Water Supply Project (SCWSP) (treated and delivered to the City by the SSJID)
- Groundwater pumped from eight groundwater wells located within the City

Table 5-1 provides a summary of the City's existing water supply agreements and contracts. A discussion of each of these water supplies and their anticipated availability and reliability is provided below.

Table 5-1. Existing Water Supplies

Supply Source	Existing Water Agreements/Contracts (Supply Quantity, af/yr)
Potable Water Supplies	
Surface Water Supplies	
USBR CVP Contract with M&I Reliability (treated at City's JJWTP)	10,000[a]
USBR CVP Contract with Ag Reliability (treated at City's JJWTP)	10,000[b]
BBID Pre-1914 rights for use in Tracy Hills (treated at City's JJWTP)	3,330[c]
SSJID South County Water Supply Project	11,120[d]
Groundwater	Up to 9,000[e]
Semitropic Water Storage Bank	Up to 3,500[f]
ASR	Up to 1,000[g]
Non-Potable Water Supplies[h]	
Recycled Water Exchange	7,500
Recycled Water (for non-potable uses)	6,300

(a) M&I-reliability CVP water. Assumes the terms of the long-term renewal contract with the USBR are consistent with those of the interim renewal contract entered into between the City and USBR in February 2016.

(b) Assignments from Banta-Carbona Irrigation District (BCID) and West Side Irrigation District (WSID).

(c) Up to 4,500 af/yr, but no more than the potable water demand for Tracy Hills (3,330 af/yr). This water is only available for use in the portion of Tracy Hills that lies within BBID Raw Water Service Area 2 the CVP Consolidated Place of Use, so the quantity of supply is limited to potable water demand in this area. Therefore, the maximum BBID supply delivered to this area is reduced to 3,330 af/yr.

(d) Includes the 10,000 af/yr allocation and the additional 1,120 af/yr obtained through the 2013 Lathrop-Tracy Purchase, Sale, and Amendment Agreement. Does not include the interim purchase from Escalon.

(e) The City is able to withdraw up to 9,000 af/yr of groundwater from the Tracy Subbasin. However, due to the aging infrastructure and water quality issues in the City's groundwater supplies, the City is projecting to be able to withdraw up to 2,500 af/yr in normal years. During dry years, the City anticipates increasing its groundwater production on a short-term basis from the normal year production of 2,500 af/yr to 4,500 af/yr.

(f) The City has purchased 10,500 af of water storage in the Stored Water Recovery Unit, which allows the City to withdraw up to 3,500 af/yr for three consecutive years.

(g) Supplies from ASR are assumed to be dry year supplies. During normal years, the City will not withdraw ASR water. In single dry years and multiple dry years, this water supply is considered to be 100 percent reliable. The City estimates that up to 1,000 af/yr of groundwater can be extracted from buffer storage in the Lower Tulare Formation aquifer associated with the City's current ASR Program.

(h) While the City's Wastewater Treatment Plant is currently capable of providing recycled water supply, additional infrastructure will be required to provide for its beneficial use (see additional information in this chapter and in Chapter 9).

Each of these existing supplies is described below. A summary table listing the City's existing and future water supplies under various hydrologic conditions is provided following the discussion of the City's future water supplies.

The City's historical use of these water supplies is shown on Figure 5-1. As shown, the City's highest annual water use occurred in 2007 and totaled 19,176 af/yr. Since then, water use has decreased with downturns resulting from the 2008 Great Recession which slowed development growth for several years and the 2011 to 2017 California drought which prompted mandatory statewide water conservation in 2015 and 2016. Since the end of the drought, water use has rebounded (increased) somewhat but is still below the highest historical use in 2007. Also shown on Figure 5-1 is the City's population since 1980. As shown, while the City's population has more than quadrupled since 1980, water use has only a little more than doubled. The relatively low

increase in water demand as compared to population growth results from the reduction of overall per capita water use from over 300 gpcd in the early 1980s to less than 180 gpcd in recent years as described in Chapter 4.

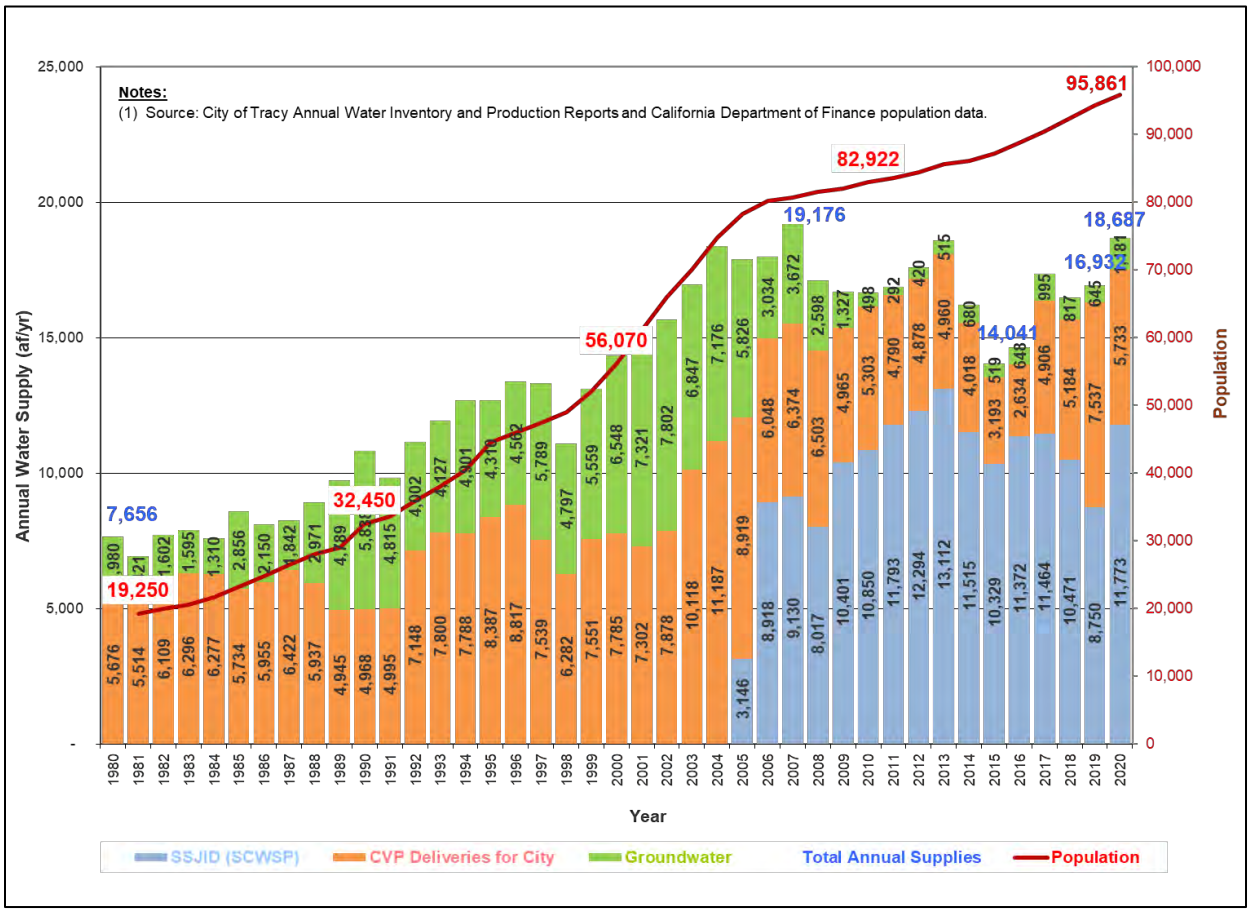


Figure 5-1. Historical Water Supplies

5.3.1 Central Valley Project Water via the Delta-Mendota Canal

5.3.1.1 M&I Reliability Supplies from the CVP

In 1974, the City entered into a 40-year contract with the USBR for an annual entitlement of 10,000 af/yr of surface water from the CVP via the DMC. The original contract expired in 2014; however, since December 2013, the City and USBR have entered into a series of two-year interim renewal contracts to provide water service to the City while the terms of the long-term contract renewal are negotiated and the associated environmental documentation is prepared. The most recent interim renewal contract term begins March 1, 2020 and ends February 28, 2022. The City anticipates on-going contract renewals for this source.

Allocations for the Municipal and Industrial (M&I)-reliability CVP water since 2010 are summarized in Table 5-2.

Table 5-2. Historical Annual CVP M&I Allocations (South of Delta)

Year	Annual CVP M&I Allocation (percent of contractual amount unless otherwise noted)
2010	75 percent
2011	100 percent
2012	75 percent
2013	70 percent
2014	50 percent
2015	Public health and safety needs or at least 25 percent of historical use, whichever is greater
2016	55 percent of historical use
2017	100 percent of contract amount
2018	Public health and safety needs or at least 75 percent of historical use, whichever is greater
2019	100 percent of historical use
2020	Public health and safety needs or at least 70 percent of historical use, whichever is greater

In February 2017, new guidelines and procedures went into effect associated with the updated CVP M&I Water Shortage Policy. In general, the policy provides for the following:

- When M&I contractor allocations are at 100 percent, the allocation of M&I water will be based on Contract Total.
- When M&I contractor allocations are below 100 percent, the allocation of M&I water will be based on a contractor's historical use of CVP M&I water.
- An M&I contractor's historical use will be determined by calculating the average quantity of CVP water put to beneficial use within the service area during the last three years of water deliveries that were unconstrained by the availability of CVP water.

It should be noted that before allocation of M&I water to a contractor will be reduced, allocation of irrigation water will be reduced below 75 percent of Contract Total. When allocation of irrigation water has been reduced below 75 percent and still further water supply reductions are necessary, both the M&I and irrigation allocations will be reduced by the same percentage increment. The M&I allocation will be reduced until it reaches 75 percent of historical use, and the irrigation allocation will be reduced until it reaches 50 percent of irrigation Contract Total. The M&I allocation will not be further reduced until the irrigation allocation is reduced to below 25 percent of Contract Total. When allocation of irrigation water is reduced below 25 percent of Contract Total, USBR will reassess both the availability of CVP water supply and CVP water demand.

According to the policy, USBR will strive to deliver CVP water to M&I water service contractors at not less than the amount needed to meet public health and safety needs, taking into consideration contractors' CVP allocations and available non-CVP supplies, provided CVP water is available.

For this Citywide Water System Master Plan Update, consistent with the City's 2020 UWMP, the following assumptions have been made with regards to delivery of M&I-reliability supplies from the CVP under the various hydrologic conditions:

- Normal Years: 75 percent of historical use
- Single Dry Years: 25 percent of historical use
- Multiple Dry Years: 40 percent of historical use

5.3.1.2 Ag-Reliability Supplies from the CVP

In 2004, the USBR approved the assignment of 5,000 af/yr of Ag-reliability CVP contract entitlement to the City from the BCID. Also in 2004, the USBR approved the assignment of an additional 2,500 af/yr of Ag-reliability CVP contract entitlement water to the City from the WSID with the option to purchase an additional 2,500 af/yr of CVP contract entitlement from the WSID. The purchase of the additional 2,500 af/yr was approved in December 2013, increasing the City's assignment of WSID water to 5,000 af/yr.

Deliveries of Ag-reliability water can vary significantly, and during severe water shortages supply may be reduced as much as 100 percent, as they were in 2014 and 2015. Allocations for the Ag-reliability CVP water since 2010 are summarized in Table 5-3.

Table 5-3. Historical Annual CVP Ag Allocations (South of Delta)

Year	Annual CVP Ag Allocation, percent of contractual amount
2010	45
2011	80
2012	40
2013	20
2014	0
2015	0
2016	5
2017	100
2018	50
2019	75
2020	20

For this Citywide Water System Master Plan Update, consistent with the City's 2020 UWMP, the following assumptions have been made with regards to delivery of Ag-reliability supplies from the CVP:

- Normal Years: 50 percent of annual entitlement
- Single Dry Years: 0 percent of annual entitlement (based on actual allocation in 2015)
- Multiple Dry Years: 0 percent of annual entitlement (based on the average allocations for 2014, 2015 and 2016; 1.67 percent rounded down to 0 percent)

5.3.1.3 Treatment and Use of CVP Surface Water Supplies

The City's CVP surface water supplies received via the DMC are treated at the City's JJWTP, which was originally constructed in 1979, expanded in 1988, and then expanded again in 2008. The JJWTP is located adjacent to the Delta-Mendota Canal in the southern portion of the City. The current treatment capacity of the JJWTP is 30 mgd.

The City's annual combined M&I and Ag CVP surface water supplies used by the City since 2010 are shown in Table 5-4.

Table 5-4. Historical Annual CVP Surface Water Supplies

Year	Annual CVP Surface Water Supplies, af[(a)]
2010	5,303
2011	4,790
2012	4,878
2013	4,960
2014	4,018
2015	3,193
2016	2,634
2017	4,906
2018	5,184
2019	7,537
2020	5,733

(a) Does not include CVP supplies which are treated and wheeled for the Patterson Pass Business Park (see Table 5-5 below).

The City also treats and serves relatively small quantities of CVP/DMC water purchased by others through a "treatment and wheeling agreement" for use at the Patterson Pass Business Park only. The Patterson Pass Business Park is now built out. The City's deliveries through the Patterson Pass Business Park Booster Pump Station since 2010 are shown in Table 5-5. A comparable quantity of BBID CVP/DMC water is anticipated to be available for annual delivery to the Patterson Pass Business Park in the future.

Table 5-5. Historical Annual Deliveries to Patterson Pass Business Park

Year	Deliveries to Patterson Pass Business Park, af
2010	420
2011	527
2012	538
2013	558
2014	590
2015	585
2016	707[(a)]
2017	796[(a)]
2018	948[(a)]
2019	740[(a)]
2020	840[(a)]

(a) Deliveries shown for 2016 to 2019 may include demands in the International Park of Commerce (Cordes Ranch) due to the metering configuration in place during those years.

5.3.2 Surface Water from BBID Pre-1914 Water Rights

Part of the proposed Tracy Hills Specific Plan area was annexed into the BBID and is entitled to water service from BBID, using BBID's pre-1914 appropriative water rights. This water is delivered to the City via the DMC and is treated at the City's JJWTP before delivery to the Tracy Hills Project. The City anticipates that up to 4,500 af/yr of pre-1914 water rights water could be provided by BBID on a year-round basis to serve the Tracy Hills Project in the BBID service area. However, the volume of water available to the City through this agreement is limited to the demand in the BBID service area portion of the Tracy Hills Project. The projected potable water demand in this area is estimated to be 3,330 af/yr at buildout. Because the water supply is based on pre-1914 appropriative rights, the supply has historically been considered to be firm and well-established.[1]

[1] It should be noted that in August 2021, following the June 2021 adoption of the City's 2020 UWMP, the SWRCB issued an initial order imposing water right curtailment and reporting requirements in the Sacramento-San Joaquin Delta watershed that included the curtailment of pre-1914 appropriative water right claims in the San Joaquin River watershed. Based on this August 2021 order, the reliability of BBID's pre-1914 appropriative water rights may be uncertain.

5.3.3 Stanislaus River Water

The City, in partnership with the cities of Manteca, Lathrop and Escalon, and the SSJID, have constructed a surface water treatment plant near Woodward Reservoir in Stanislaus County and a transmission pipeline to deliver treated surface water to each city. The project is called the South County Water Supply Project (SCWSP). This water supply is based on SSJID's senior pre-1914 appropriative water rights to the Stanislaus River, coupled with an agreement with the USBR to store water in New Melones Reservoir.

As part of the SCWSP, the City was initially allocated up to 10,000 af/yr of water. In 2006, the City entered into a temporary contract with Escalon to purchase Escalon's allocation of 2,015 af/yr of SCWSP supply until Escalon constructs the necessary infrastructure to convey the SCWSP water; this contract is anticipated to sunset in 2025. In August 2013, the City purchased an additional 1,120 af/yr of SCWSP entitlement from the City of Lathrop. Thus, the City's current contractual amount of SCWSP water is 13,135 af/yr in total. Once the agreement with Escalon sunsets (anticipated to occur in 2025), the City's contractual allocation will be reduced to 11,120 af/yr.

Treated water deliveries of SCWSP water commenced in July 2005, and deliveries have been essentially uninterrupted since then (see Figure 5-1). In some years, SCWSP deliveries were less than the City's full project allotment; however, during these years the City did not require its full SCWSP allotment, even though the full contract amount was available from SCWSP. However, since 2010, the City has actually received more than its allotment in some years. Historical deliveries from the SCWSP to the City since 2010 are shown in Table 5-6.

Table 5-6. Historical Deliveries from the SCWSP to the City of Tracy

Year	SCWSP Deliveries, af
2010	10,850
2011	11,793
2012	12,294
2013	13,112
2014	11,515
2015	10,329
2016	11,372
2017	11,464
2018	10,471
2019	8,750
2020	11,773

The SCWSP was expected to have high reliability as a result of its senior pre-1914 rights. SSJID's 2015 UWMP, adopted by SSJID in June 2016, indicated that it would meet 98.2 to 99.9 percent of urban demands in normal years (the percent of urban demand met increases in the future as agricultural demands decrease), 73.6 to 75.3 percent of urban demands in single dry years, and 85.1 to 87.1 percent of urban demand in multiple dry years. In the City's 2015 UWMP, supplies from the SCWSP were assumed to have high reliability with normal year allocations at 100 percent of the City's contractual entitlement, and single dry year and multiple dry year allocations at 85 percent of the City's contractual entitlement.

However, in December 2018, the SWRCB released amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment) with significant changes to the previous Bay-Delta Water Quality Control Plan. The Bay-Delta Plan Amendment requires releases of approximately 40 percent of what would naturally flow in watersheds tributary to the San Joaquin River (including the Stanislaus River) during the February to June period. This means that surface water users on those watersheds would be restricted from using and storing water until 40 percent of unimpaired flows are rededicated for water quality and instream fishery purposes. For the Stanislaus River, the resulting surface water cutbacks would be significant. However, there is much uncertainty surrounding the implementation of the Bay-Delta Plan Amendment.

In its 2020 UWMP, SSJID presented a water reliability analysis assuming that the Bay-Delta Plan Amendment will not be implemented given its uncertainties. As an SSJID retail agency customer, the City relies on SSJID for the reliability projections for the Stanislaus River water supply. Consistent with SSJID's approach, the City's 2020 UWMP assumes that the Bay-Delta Plan Amendment will not be implemented. However, to fully assess the potential impacts of the Bay-Delta Plan Amendment and better plan for the potential shortfalls, the City conducted a parallel set of reliability analyses assuming that the Bay-Delta Plan Amendment will be implemented and included it as Appendix G of its 2020 UWMP.

For purposes of this Citywide Water System Master Plan Update, the reliability of the SCWSP supply has been revised to be consistent with the City's 2020 UWMP. Allocations will be assumed to be as follows:

- Normal Years: Allocations will be assumed to be 100 percent of the City's contractual entitlement.
- Single Dry Years: Allocations will be assumed to be 56 to 76 percent of the City's contractual entitlement.
- Multiple Dry Years: Allocations will be assumed to be 56 to 100 percent of the City's contractual entitlement.

5.3.4 Groundwater

5.3.4.1 City Wells

The City overlies a portion of the San Joaquin Valley Groundwater Basin-Tracy Subbasin (Tracy Subbasin). The City currently operates eight groundwater production wells and one ASR well. Four wells (Production Wells 1, 2, 3 and 4) are located near the City's JJWTP and pump directly into the JJWTP clearwells, where the groundwater is blended with treated surface water. Four other wells (Lincoln Well, Lewis Manor Well (Well 5), Park and Ride Well (Well 6), and Ball Park Well (Well 7) are located throughout the City and pump water directly into the distribution system after disinfection. The City's newest well, Well 8, located near the intersection of Tracy Boulevard and 6th Street, is an ASR Well, and is capable of injecting treated surface water into the aquifer for storage and extracting it for later use (see additional discussion in Section 5.3.5 below).

5.3.4.2 Groundwater Yield

A 1990 Kennedy/Jenks/Chilton (K/J/C) study estimated a perennial groundwater yield of 6,700 af/yr in the Tracy Subbasin within the Tracy Study Area. However, in 2001, to determine if additional groundwater resources were available in the Tracy Study Area, the City conducted an updated groundwater analysis. The Estimated Groundwater Yield Study, prepared by Bookman-Edmonston Engineering, provided an evaluation of potential groundwater yield and determined that a 2,300 af/yr increase of the average annual operational groundwater yield above the groundwater yield recommended in the 1990 K/J/C study could be provided within the estimated sustainable yield of the Tracy Subbasin in the Tracy Study Area, without adverse impact to groundwater resources or quality in the Tracy Study Area over a 50-year timeframe. This expansion of groundwater usage to 9,000 af/yr would be within the City's estimated share of the aquifer's sustainable yield of 22,000 af/yr of the 28,000 af/yr total (which includes groundwater usage within West Side Irrigation District, Naglee-Burk Irrigation District, Plain View Water District (now part of the BBID), and BCID). It was also estimated that this expansion of groundwater usage would result in a groundwater level drop of 10 feet but would stabilize at this level.

In 2015, the City hired GEI Consultants (GEI) to perform an assessment on what the effects would be if the City were to pump between 16,000 and 22,000 af/yr for a single year to meet its demands during a drought emergency when no surface water supplies were available. The assessment considered potential impacts on groundwater levels, groundwater quality, and land subsidence. GEI's approach to this assessment was to estimate drawdown beneath the City, including drawdown caused by well interference, under scenarios wherein all of the City's wells were pumped for a single year at rates needed to meet the above stated demands. Drawdown estimates were made using analytical methods and aquifer hydraulic property data from pumping tests performed at two of the City's wells. Results showed that the City does have capacity to pump its wells to meet these single dry year demands, but that drawdown in the City wells and at locations proximate to the City would exceed that which has been historically observed. GEI (2015) estimated that groundwater levels would recover from their drawdown within approximately seven years.

5.3.4.3 Groundwater Quality

Groundwater quality in the Tracy Subbasin varies spatially and with depth. In general, the northern part of the Tracy Subbasin is characterized by a sodium water type, and the southern part of the Tracy Subbasin is characterized by calcium-sodium type water. The northern part of the Tracy Subbasin is also characterized by a wide range of anionic water types, including bicarbonate; chloride; and mixed bicarbonate-chloride. Major anions in the southern part of the Tracy Subbasin include sulfate-chloride and bicarbonate-chloride.

One water quality concern that the City actively manages is Total Dissolved Solids (TDS). The City's groundwater supply typically meets the primary maximum contaminant level (MCL) of 1,000 milligrams per liter (mg/L) but frequently exceeds the secondary MCL of 500 mg/L. In 2019, the City's groundwater supply ranged from 386 to 876 mg/L of TDS, with an average concentration of 752 mg/L. Because the TDS concentrations are significantly higher in the groundwater supply than in the City's other water supply sources, in order to meet the secondary MCL in its overall water supply, the City typically scales back its groundwater production from its estimated sustainable yield of 9,000 af/yr, particularly in normal rainfall years.

5.3.4.4 Groundwater Management

5.3.4.4.1 City Groundwater Management Policy and Mitigated Negative Declaration for City Groundwater Production of 9,000 af/yr

On a local level, in 2001, the City adopted a Groundwater Management Policy, and prepared a Groundwater Management Policy Mitigated Negative Declaration. The Groundwater Management Policy and the Groundwater Management Policy Mitigated Negative Declaration are described below.

Pursuant to the findings of the 2001 Bookman-Edmonston study (discussed above in Section 5.3.4.2), the Tracy City Council adopted a Groundwater Management Policy in 2001 that established the City's maximum annual groundwater extraction rate of 9,000 af/yr. To comply with CEQA and to evaluate the potential negative effects of increased groundwater extraction on water quality, water levels, and subsidence, the City also prepared a Groundwater Management Policy Mitigated Negative Declaration. The Groundwater Management Policy Mitigated Negative Declaration specifies the frequency and type of monitoring and reporting the City must conduct to evaluate the sustainability of the increased groundwater extraction rate.

Consistent with the Groundwater Management Policy Mitigated Negative Declaration, the City has maintained groundwater production rates well below the estimated sustainable yield of 9,000 af/yr.

5.3.4.4.2 Compliance with the 1992 Groundwater Management Act (AB 3030)

The 1992 Groundwater Management Act (AB 3030) established provisions by which local water agencies could develop and implement groundwater management plans (GMPs). GMPs are generally designed to prevent local and regional aquifer overdraft, which reduces available groundwater resources and which, under certain conditions, can lead to degradation of water quality and to land subsidence.

The City, BBID, BCID, and San Joaquin County formed a Groundwater Advisory Committee to facilitate the development of a regional groundwater management plan (GWMP) for the Tracy Subbasin. The planning area of the Tracy GWMP encompassed the portion of the Tracy Subbasin underlying San Joaquin County. The Tracy GWMP was adopted in 2007.

The key results of the Tracy GWMP included the following:

- Developed a general consensus among stakeholders regarding the characterization of the area's water problems, current and future demands, and groundwater conditions;
- Documented the region's groundwater management goals and establishing basin management objectives to help measure progress in attaining the goals;
- Developed specific solutions and common programs for the basin; and
- Provided an implementation plan to direct future groundwater management activities.

The Tracy GWMP concluded that the Tracy Subbasin is full, but experiences groundwater quality issues in portions of the basin associated with nitrate, boron, sulfate, chloride, and total dissolved solids (TDS). As such, many of the groundwater management options that were recommended focused on creating available storage and managing pumping in order to increase water quality within the Tracy Subbasin.

San Joaquin County is the designated Monitoring Entity under the California Statewide Groundwater Elevation Monitoring (CASGEM) program for the portion of the Tracy Subbasin underlying the county. However, upon submission of the Groundwater Sustainability Plan, the CASGEM program will be superseded by the SGMA monitoring efforts.

5.3.4.4.3 Tracy Regional Groundwater Management Plan

In addition to participating in the development of the Tracy Subbasin GMP, in 2005 the City was awarded a DWR grant for approximately $185,000 to prepare a Tracy Regional Groundwater Management Plan (Tracy Regional GMP) for the portion of the Tracy Subbasin that underlies the City of Tracy. The Tracy Regional GMP was completed in March 2007. A key objective of the Tracy Regional GMP was the development of Basin Management Objectives (BMOs) for groundwater levels, groundwater quality, and land subsidence in the region.

5.3.4.4.4 Compliance with the 2014 Sustainable Groundwater Management Act

On August 29, 2014, the California Legislature passed comprehensive groundwater legislation contained in SBs 1168 and 1319, and AB 1739, which are collectively referred to as SGMA. This legislation was signed by Governor Brown on September 16, 2014 and it became effective on January 1, 2015. The legislative intent of SGMA is to provide sustainable management of groundwater basins, enhance local management of groundwater, establish minimum standards for sustainable groundwater management, and provide local groundwater agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater.

The Tracy Subbasin is designated by DWR as a medium priority basin. As such, the Tracy Subbasin is subject to the requirements of SGMA, which include the formation of a one or more Groundwater Sustainability Agencies (GSAs) and the development and implementation of one or more Groundwater Sustainability Plans (GSPs) by January 31, 2022. If the statutory deadline is not met for GSP development and/or implementation, the State has the authority to intervene and manage groundwater within non-compliant subbasins. SGMA requires that adopted GSPs result in sustainable groundwater management which avoids undesirable results.

The Tracy Subbasin contained areas of San Joaquin, Contra Costa and Alameda Counties. The Banta-Carbona Irrigation District, Byron-Bethany Irrigation District, City of Tracy, City of Lathrop, Stewart Tract, West Side Irrigation District, and San Joaquin County are GSAs within the Tracy Subbasin. The GSAs recognize that developing and adopting a single GSP for the subbasin would be the most efficient way of achieving sustainability and preventing State intervention into local groundwater management.

Working with San Joaquin County and the Tracy Subbasin GSAs, a Memorandum of Agreement (MOA) has been developed for the development of the San Joaquin County GSP for the Tracy Subbasin. Under the terms of the MOA, San Joaquin County is designated as the lead entity to enter into an agreement with the City of Brentwood to coordinate the allocation of grant funds.

The City, BCID, BBID[2], City of Lathrop, San Joaquin County, and Stewart Tract are the six GSAs formed in the Tracy Subbasin and are working cooperatively to develop a single GSP. The Tracy Subbasin GSAs were awarded a DWR grant to develop the GSP. Pursuant to the Grant Agreement, each GSA designated an appointee to form the GSP Coordination Committee, and the San Joaquin County was appointed as the Grant Administrator. The Grant Administrator or any two appointees may call meetings of the GSP Coordination Committee as needed to in the GSP development process.

The GSP for the Tracy Subbasin has been adopted by the GSAs and was submitted to DWR by the statutory deadline of January 31, 2022. The Final GSP is available on the Tracy Subbasin website: https://tracysubbasin.org.

As one of the six GSAs that are managing the Tracy Subbasin., the City has been actively involved in GSP development activities and will continue to be involved throughout SGMA implementation. The City has one appointee (and an alternate) on the Tracy Subbasin GSP Coordination Committee, which meets quarterly, and the Technical Committee, which meets monthly.

[2] The West Side Irrigation District officially merged with Byron-Bethany Irrigation District in September 2020, which occurred later than the release of the draft GSP chapters.

5.3.4.5 Historical Groundwater Use

As discussed previously, the City currently operates eight groundwater extraction wells and one ASR well. The total production capacity of all of the wells combined is 28.2 mgd, which would equate to a total annual production capability of about 31,600 af/yr if the wells were pumped continuously; however, as described above, the City's maximum annual groundwater extraction rate has been established to be 9,000 af/yr. Key characteristics of the City's wells are listed in Table 5-7.

Table 5-7. Groundwater Well Characteristics

City Well Name/Number	Year Drilled	Total Well Depth (Casing Depth), feet	Casing Diameter, inches	Depth of Perforated Zone, feet[a]	Design Capacity, gpm	Production Capacity, mgd
Well 1	1986	1,010 (1,000)	16"	450-550 580-980	1,500	2.2
Well 2	1989	990 (870)	16"	420-850	2,000	2.9
Well 3	1989	1,020 (900)	16"	420-890	2,000	2.9
Well 4	1989	1,020 (950)	16"	380-940	2,000	2.9
Lincoln Well	1990	1,000 (1,000)	16"	490-980	2,500	3.6
Well 5[b] (Lewis Manor Well)	2000	1,015 (1,000)	18"	410-480 601-630 650-670 805-830 900-930 965-990	2,500	3.6
Well 6 (Park & Ride Well)	2001/02	1,250 (1,216)	18"	550-598 610-636 656-678 738-754 774-796 966-982 1,014-1,122 1,176-1,196	2,000	2.9
Well 7 (Ball Park Well)	2002	1,070 (894)	18"	550-598 570-732 850-874	2,500	3.6
Well 8[c]	2004	850 (850)	18"	370-460 510-640 680-820	2,500	3.6

(a) Source: GEI Consultants, Summary of Groundwater Conditions November 2007 through November 2008, dated January 23, 2009.
(b) Data shown is for the Lewis Manor Replacement Well constructed in 2000.
(c) Well 8 went into operation in September 2010, initially as an extraction well and then as a permitted ASR Well.

It should be noted that only Wells 1, 2, 3, 4 and 8 currently have provisions for ammonia addition. It is recommended that provisions for ammonia addition be added to the City's other wells to provide maximum flexibility in the operation of the wells in conjunction with the City's surface water supplies which are disinfected through chloramination.

The City's annual groundwater production since 2010 is shown in Table 5-8.

Table 5-8. Historical Groundwater Production by the City of Tracy

Year	Annual Groundwater Production, af
2010	498
2011	292
2012	420
2013	515
2014	680
2015	519
2016	648
2017	995
2018	817
2019	645
2020	1,181

5.3.4.6 Projected Future Groundwater Use

As discussed in Section 5.3.4.2, the City may sustainably pump up to 9,000 af/yr from the local groundwater basin. Since the hard, high TDS groundwater is of lower quality than the City's surface water sources, the City has scaled back its groundwater extraction in most years. However, the City will continue to rely on groundwater for peaking and drought and emergency water supply.

The City anticipates that total extraction during a normal year will be 2,500 af/yr. By reducing groundwater extraction on an average annual basis, the City will: (1) increase the overall quality of its drinking water, thus increasing customer satisfaction and reducing system maintenance and repair caused by the lower-quality groundwater; and (2) recharge the underlying aquifer, effectively increasing the availability of groundwater during a drought or emergency condition (i.e., effectively "banking" groundwater).

The projected use of groundwater during dry years is about 4,500 af/yr and is consistent with the City's Groundwater Management Policy. In the event that the City is unable to secure additional high-quality surface water supplies in the future, the City is able to expand groundwater production up to 9,000 af/yr. In the event of a severe water supply shortage or emergency, the City has the ability to increase production dramatically, up to 22,000 af/yr.

5.3.5 Aquifer Storage and Recovery

The City's ASR Program allows the City to optimize conjunctive use of its water supplies through injection of surplus treated (potable) drinking water into selected aquifer zones within the groundwater subbasin for storage when surplus supplies are available, and recovery of that potable water from the aquifer to optimize water quality and meet seasonal peak demands during drought periods, or when emergency or disaster scenarios preclude the use of imported water supplies.

In January 2004, the City constructed a new well (Well 8) that was designed to allow for both injection and extraction of water supplies in conjunction with the City's proposed ASR Program. In early 2009, the City contracted to construct the above-ground well facilities (including the pump house, pump, motor, SCADA, electrical, telemetry, chemical feed systems, *etc.*) to have Well 8 operational in September 2010, initially as an extraction well, and in the future as part of the City's proposed ASR Program. In addition, the City installed two monitoring wells for use in the demonstration project monitoring and testing for the proposed ASR Program.

The City obtained regulatory approval from the Central Valley Regional Water Quality Control Board (RWQCB) to conduct an ASR Demonstration Testing Program. The Phase 1 ASR Demonstration Testing was conducted between January 2011 and September 2011 and involved the injection of 233 acre-feet (76 million gallons) of treated SSJID potable water, storage in the confined aquifer, and subsequent extraction of 340 acre-feet (111 million gallons) of water[3]. The Phase 2 ASR Testing was initiated in late December 2011 and was completed in September 2012 with injection of 700 acre-feet. The Tracy City Council approved and adopted a CEQA Negative Declaration (SCH No. 2012102013) for the permanent ASR Program on December 4, 2012.

Injection of treated SSJID water into the ASR well occurs during the winter months (i.e., November through April), when City demands are low and when the City's JJWTP and groundwater wells can be shut down such that only treated SSJID water is injected per the City's ASR permit. Extraction occurs primarily in the summer months to meet increased demands associated with irrigation needs, and as needed during droughts and water shortage emergencies. It is estimated that between 685 and 915 af/yr of potable water could be injected into the aquifer, assuming a 5-month continuous injection rate of 1.5 to 2.0 mgd at Well 8. The City's current strategic plan for ASR operations involves injecting up to 1,000 af/yr over six months during the winter and extracting 75 percent of the injection volume during the following summer. These operations would result in net injection into the Lower Tulare Formation aquifer, which will gradually create a "buffer supply" that the City can utilize in dry years or during water shortage emergencies.

Net annual ASR injection and extraction amounts from Well 8 since 2013 are shown in Table 5-9.

[3] Interim (Final) Status Report for Well 8 ASR Demonstration Program, Memorandum prepared for City of Tracy by Pueblo Water Resources, dated December 7, 2011.

Table 5-9. Tracy ASR Well 8 Annual Injection and Extraction	
Year	Net Injection or Extraction, af
2013	415 (injection)
2014	221 (extraction)
2015	322 (injection)
2016	165 (injection)
2017	665 (injection)
2018	2 (injection)
2019	0
2020	190 (injection)

5.3.6 Out-of-Basin Water Banking

The Semitropic Groundwater Storage District Groundwater Storage Bank (Semitropic) is a water storage system that began operation in the early 1990s. Located in Kern County between the California Aqueduct and the DMC, Semitropic is one of eight California groundwater banking agencies. Semitropic works by having its banking partners deliver their surplus water to Semitropic for storage. Then, when requested by the banking partner, Semitropic returns the stored water to the California Aqueduct for use by its partners either by exchanging its entitlement or by reversing the intake facility (known as "pumpback"). Through "pumpback," Semitropic can deliver a maximum of 90,000 af/yr of water into the California Aqueduct. The State would then deliver the water to the banking partners.

The total storage capacity at Semitropic is 1.65 million acre-feet and, as listed below, there is still a significant amount of storage capacity which is uncommitted and available. The current Semitropic banking partners and their reserved/available storage capacities are listed in Table 5-10.

Table 5-10. Semitropic Water Storage District Banking Partners[(a)]	
Partner Agency	Storage Allocation, af
Metropolitan Water District of Southern California	350,000
Valley Water (formerly known as Santa Clara Valley Water District)	350,000
Alameda County Water District	150,000
Zone 7 Water Agency	65,000
Newhall Land & Farming Company	55,000
San Diego County Water Authority	45,000
Poso Creek Water Company	60,000
City of Tracy	**10,500**
Homer, LLC	15,000
Harris Farms, LLC	10,500
Available Capacity	474,750
Unallocated Storage	64,250
Total Storage Capacity	**1,650,000**
(a) Source: Semitropic Water Storage District website (www.semitropic.com) as of February 12, 2020.	

In June 2006, the City entered into a pilot agreement with Semitropic for 1,000 acre-feet of water storage at Semitropic, which allowed for an annual withdrawal of up to 333 af/yr (e.g., 1,000 acre-feet divided by 3). The pilot agreement was intended to establish the procedures for water deposits and withdrawals by the City of Tracy and was terminated when the Permanent Agreement with Semitropic was implemented (see below).

On June 5, 2012, the Tracy City Council approved a long-term agreement with Semitropic for 3,500 units of water storage. One unit of water storage allows for a withdrawal of up to 1 af/yr for three years; hence, the agreement would allow for withdrawal of 3,500 af/yr for three years (10,500 af total). To store water in Semitropic, the City would not withdraw its share of CVP water from the DMC, but instead allow this water to continue to move through the DMC and California Aqueduct systems for delivery to and use by Semitropic. This is called "in lieu storage." Upon request by the City, in accordance with the contract, Semitropic would pump the stored water into the California Aqueduct and a like amount of water would be made available to the City directly from the DMC.

Though the City could utilize this supply in any year, it is most valuable during extended drought years when the City's surface water supplies are reduced. The City anticipates that banking water at Semitropic will increase the reliability of the City's water supply and help close the potential future gap between supply and demand during drought conditions or other water supply shortage emergencies. If the City uses water from the Semitropic water bank in any given year, it would manage its supplies during subsequent years such that it could refill the water bank for future use. The City plans to actively maintain storage in Semitropic as feasible.

As of December 2020, the City currently has 6,887 acre-feet of water in storage at Semitropic.

5.4 FUTURE POTABLE WATER SUPPLIES

The City is currently anticipating the following potential future potable water supplies:

- Additional ASR wells
- Additional CVP water supplies from USBR available through a recycled water exchange agreement
- Additional CVP water supplies from BBID
- Additional SCWSP water supplies

These potential future potable water supplies are described below.

5.4.1 Additional ASR Wells

As described above, the City currently has one ASR well (Well 8) which allows the City to inject excess SCWSP water supplies into the groundwater basin for later extraction when needed. The current injection and extraction capacity is 700 af/yr. The City is planning to expand the ASR program with the installation of additional ASR wells. The City's ASR Program will be expanded to provide up to 1,000 af/yr of water supplies from the existing and new ASR wells by 2040. The ASR supply will be used to meet demands during dry years, thereby increasing the reliability of

the City's water supply and helping to close the potential gap between supply and demand during drought conditions or water shortage emergencies.

One constraint with the City's ASR Program is that the permit only allows for SCWSP water to be injected. This means that the City has to shut down the JJWTP and the groundwater wells during the injection period so that only SCWSP supplies are being utilized. The City is considering requesting an amendment to its ASR permit to allow for the use of treated CVP supplies for ASR injection, in addition to the SCWSP water supplies. This would provide more operational flexibility for ASR injection and allow the City to optimize the storage of surface water supplies in wet years for later extraction in dry years. A potential alternative, if the City's ASR permit cannot be modified to allow for other water supplies to be injected, would be to construct a dedicated SCWSP water pipeline to the ASR well(s). Future expansion of the ASR program will need to fully evaluate these operational restrictions and potential alternatives.

5.4.2 Additional CVP Water Supplies from USBR Available Through a Recycled Water Exchange Program

The City is evaluating the potential for indirect reuse of its available recycled water through an exchange agreement with the USBR whereby a portion of the City's tertiary-treated wastewater (recycled water) would be discharged to the DMC and a like amount of water (i.e., a one-to-one exchange) could then be diverted from the DMC by the City for treatment at the City's JJWTP for potable use. Such supplies would be 100 percent reliable and would not be subject to drought cutbacks.

The benefits of such an exchange agreement include the following:

- Provides for the beneficial use of recycled water: Recycled water (tertiary treated wastewater) is currently discharged by the City into the Delta with minimal beneficial use.
- Provides an additional potable water supply for the City: Through indirect reuse, it provides an additional potable water supply for City residents and enhances water supply reliability for the community.
- Provides enhanced water supply reliability: Recycled water is a "drought proof" water supply.
- Reduces the City's dependence on CVP water supply: CVP water has become increasingly unreliable due to drought, climate change and environmental impacts. Indirect reuse of recycled water would reduce the City's dependence on CVP water supplies.
- Builds on existing infrastructure: Operations under the exchange agreement would utilize the existing wastewater treatment facilities and recently constructed recycled water pump station and pipelines.
- Reduces salt loading in the Delta: Recycled water has a total dissolved solids content of approximately 660 milligrams per liter. Water of this quality is suitable for reuse but does not meet Delta salinity standards. This results in the USBR having to release additional water from New Melones Reservoir to attain Delta salinity standards.

The project would require development of a project description, NEPA/CEQA review, approval of an exchange agreement and then design and construction of a recycled water pipeline to discharge recycled water to the DMC downstream of the City's JJWTP intake. If such a project is approved and implemented, the City anticipates that it would initially provide up to 5,900 af/yr of additional potable water supplies to the City, with future expansion as needed to meet future demands.

5.4.3 Additional CVP Water Supplies from BBID

Additional BBID DMC/CVP water supplies may be available to the City as agricultural land is converted to M&I uses. The land area that could potentially provide this additional water supply includes the portion of BBID's service area that falls within the City's planning areas (excluding the BBID Raw Water Service Area 2). Eligible land area is estimated to be approximately 2,600 acres. While the exact quantity of water that would be available is unknown, a contractual entitlement equal to 3.4 af/yr/acre may be available, resulting in a total supply of up to 8,800 af/yr (2,600 acres x 3.4 af/yr/acre). However, it should be noted that the additional water supplies would have agricultural reliability similar to the City's Ag-reliability CVP supplies described in Section 5.3.1.2 above and therefore would be subject to significant cutbacks in dry years. Agreements between Tracy and BBID, as well as environmental review, would need to occur before such a transaction could take place.

However, because of the uncertainty associated with the availability and reliability of this supply source, especially in dry years, for purposes of this Citywide Water System Master Plan Update, it is assumed that this future water supply will not be available to the City in the future.

5.4.4 Additional SCWSP Water Supplies

The City previously anticipated that an additional 1,880 af/yr of treated water supplies may be available from the SCWSP in the future through a Conserved Water Amendment Agreement. This additional supply would have the same reliability as the supply that the City is currently receiving from the SCWSP, including that recently purchased from the City of Lathrop. Delivery of these additional supplies to the City would be through the same, existing facilities currently delivering the City's existing SCWSP supplies. Delivery of these additional supplies would be subject to approval and environmental review.

However, because of the current uncertainty associated with the availability and reliability of this supply source, especially in dry years as a result of the Bay-Delta Plan Amendment, for purposes of this Citywide Water System Master Plan Update, it is assumed that this future water supply will not be available to the City in the future.

5.5 EXISTING NON-POTABLE WATER SUPPLIES

5.5.1 Recycled Water

In 2002, the City adopted a Recycled and Non-Potable Water Ordinance requiring all new subdivisions, to the extent practicable, to install the required infrastructure (such as dual-distribution pipelines) to provide recycled water to meet non-potable water demands at parks, golf courses, athletic fields, schools, median island landscapes, and industrial sites. The ordinance was codified into the Tracy Municipal Code as Chapter 11.30 "Recycled and Non-Potable Water."

In March 2013, the City adopted Ordinance 1183 amending Chapter 11.30 of the Tracy Municipal Code to update the City's recycled water requirements to be consistent with State, regional and local standards, including the California SB X7-7, 2010 California Green Building Standards Code, California Model Water Efficient Landscape Ordinance, and the City of Tracy Sustainability Action Plan. Approvals and permits for the production, distribution and use of recycled water will be required from the RWQCB and the SWRCB Division of Drinking Water.

Both the 2012 WSMP and Tracy Wastewater Master Plan included recommended capital improvement projects for the development of the City's recycled water system, including pump station and pipeline facilities to deliver recycled water within the City's service area for use for landscape irrigation and other non-potable uses. To date, the City has spent approximately $85 million on improvements to the City's WWTP to allow for the production of tertiary-treated wastewater meeting Title 22 requirements for recycled water use for landscape irrigation and other non-potable uses. In December 2013, the City adopted Development Impact Fees to fund recycled water infrastructure improvements. In 2015, the City received a $18 million Proposition 84 grant from DWR to fund construction of pump stations and pipelines to distribute recycled water. In March 2019, the City received an amended order from the SWRCB approving the change in place of use of its treated wastewater. The order allows for the City to change the point of discharge and place of use of treated wastewater by a reduction in discharge to Old River of up to 8.1 mgd, with a maximum annual limit of 5,900 af/yr and use the treated wastewater for industrial and irrigation purposes within the service areas of the City's Sphere of Influence, BBID within the City's Sphere of Influence and WSID.

The City recently completed construction of a recycled water pump station at the City's WWTP and a recycled water pipeline from the WWTP west to Lammers Road and south to Kimball High School. A second phase of construction will include a second pump station and additional recycled water pipeline to further extend the distribution of recycled water supplies within the City.

As described in Chapter 4, at buildout of the City's General Plan, it is estimated that the recycled water demand for landscape irrigation will be approximately 6,300 af/yr.

5.5.2 Shallow Non-Potable Groundwater

As discussed above, the Tracy Subbasin underlying the City has two aquifers: semi-confined and confined. The uppermost semi-confined aquifer is primarily comprised of alluvial and flood basin formations. The underlying confined aquifer is primarily comprised of the Tulare Formation and it is overlain by the Corcoran Clay, which separates the upper semi-confined aquifer from the underlying confined aquifer. The City's production wells draw from the confined aquifer only and

the average annual operational groundwater yield of 9,000 af/yr described in previous sections applies only to the confined aquifer. The City does not currently pump any groundwater from the semi-confined aquifer.

The shallow semi-confined groundwater is considered to be suitable for agricultural irrigation purposes. However, due to the poor water quality associated with the shallow groundwater supply, the use of this supply to meet the non-potable demands within the City's SOI is not recommended and is not discussed further in this Citywide Water System Master Plan Update.

5.6 RELIABILITY OF THE CITY'S WATER SUPPLIES

5.6.1 Potable Water Supply Reliability

The projected reliability for each of the City's supply sources under normal, single dry and multiple dry year conditions are described below.

5.6.1.1 Normal Years

Normal or wet water years are those that match or exceed median rainfall and runoff levels. The reliability of each of Tracy's existing and future water supplies and their projected availability during normal and wet years is described below:

- The City's contract with the USBR for 10,000 af/yr of DMC/CVP water is subject to M&I reliability. Based on the historical record, the City's long-term average allocation of DMC/CVP water pursuant to this contract is anticipated to be at least 85 percent of the total entitlement. However, due to recent environmental concerns in the Delta and potential future impacts due to climate change, the normal year supply of DMC/CVP M&I water is assumed to be 75 percent of the City's historical use. Based on a historical use of 5,930 af/yr (i.e., the average quantity of CVP water put to beneficial use by the City during the last three years of water deliveries that were unconstrained by the availability of CVP water), the projected normal year supply is 4,448 af/yr.
- The City has received acquired assignments from Banta-Carbona Irrigation District (BCID; 5,000 af/yr) and West Side Irrigation District (WSID; 5,000 af/yr) for a total entitlement of 10,000 af/yr of DMC/CVP water. These supplies are subject to Ag-reliability. The City is conservatively estimating that it will receive 50 percent of its Ag-reliability contractual entitlement, or 5,000 af/yr, in normal years.
- The City has acquired up to 4,500 af/yr of pre-1914 appropriative water rights water from BBID. These supplies are restricted in their place of use, and therefore the supply is anticipated to be equal to the projected demand within that place of use (i.e., the Tracy Hills area) ranging from 800 af/yr in 2025 to 3,300 af/yr in 2045. The City anticipates being able to receive 100 percent of this supply in normal years.

- The City has a total contractual entitlement of 13,135 af/yr of Stanislaus River water provided through the SCWSP, including 10,000 af/yr from its original contract with SSJID, 1,120 af/yr purchased from Lathrop, and 2,015 af/yr purchased on an interim basis from Escalon. The agreement between Tracy and Escalon is assumed to terminate after 2025. Based on information provided by SSJID, the City expects to receive 100 percent of its SCWSP water supply allocation during a normal water year. As such, the City anticipates being able to receive 13,135 af/yr of SCWSP supply in 2025 and 11,120 af/yr afterwards, assuming normal year conditions.
- The City is able to withdraw up to 9,000 af/yr of groundwater from the Tracy Subbasin. However, due to the aging infrastructure and water quality issues in the City's groundwater supplies, the City is projecting to be able to withdraw up to 2,500 af/yr in normal years. This groundwater supply is considered to be 100 percent reliable.
- The City does not anticipate using its Semitropic water or ASR water in normal years.
- The City anticipates that a Recycled Water Distribution Network and Exchange agreement will be executed with the USBR by 2030 to provide additional CVP supplies to the City in exchange for the City discharging a like amount of tertiary-treated recycled water to the DMC. The City assumes that the Recycled Water Distribution Network and Exchange will be implemented as needed to meet future demand conditions and is currently projected to supply an amount ranging from 1,925 af/yr in 2030 to 7,500 af/yr in 2045. This water supply is considered to be 100 percent reliable.
- The City's recycled water supply is expected to be 100 percent reliable. Based on the projected non-potable demands and assuming that the City makes investments in infrastructure and permitting, the City estimates that they will have access to 1,000 af/yr of recycled water supply in 2025, increasing to 6,300 af/yr in 2045.

The reliability of each of the City's existing and additional planned future water supplies and their projected availability during normal years at buildout is shown in Table 5-11.

Table 5-11. Projected Existing and Additional Planned Future Water Supplies Available in Normal Years at Buildout

Supply	Percent Allocation/ Entitlement	Projected Available Supplies, af/yr
Existing Water Supplies		
USBR CVP - Tracy Contract[a]	75	4,448
USBR CVP - BCID Contract	50	2,500
USBR CVP - WSID Contract	50	2,500
	Total CVP Supplies	**9,448**
BBID (pre-1914 to meet Tracy Hills demand)	100	3,300
SCWSP (SSJID) (pre-1914)	100	11,120
Groundwater	100	2,500
Semitropic Water Storage Bank[b]	0	0
	Total Existing Potable Supplies	**26,368**
Additional Planned Future Water Supplies[a]		
Additional USBR CVP (BBID contract)	0	0
Aquifer Storage and Recovery[b]	0	0
Recycled Water Exchange	100	7,500
Recycled Water (non-potable)	100	6,300
	Total Additional Planned Future Potable Supplies	**7,500**
	Total Potable Supplies	**33,868**
	Total Additional Planned Future Non-Potable Supplies	**6,300**
	TOTAL WATER SUPPLY	**40,168**

Source: City of Tracy 2020 UWMP, Table 7-2, June 2021.

(a) Percent of historical use
(b) Not used in normal years.

5.6.1.2 Single Dry Years

During a single dry year, all of the City's existing surface water allotments are subject to some level of reduction. Assumed reductions are based on actual reductions in CVP deliveries experienced in the recent drought and the new USBR M&I Reliability Policy adopted in 2017. The actual reductions will vary with the severity of the regional water supply shortage and climatic conditions, and the consideration of contract agreements.

The following describes the availability and reliability of the City's existing and additional planned future water supplies under single dry year conditions:

- The City's contract with the USBR for 10,000 af/yr of DMC/CVP water is subject to M&I reliability. During a single dry year, the City estimates to receive 25 percent of the City's historical use. Based on the historical use of 5,930 af/yr, the projected supply is 1,483 af/yr.

- The City has a total entitlement of 10,000 af/yr of DMC/CVP Ag-reliability water. The City anticipates receiving 0 percent of its DMC/CVP Ag-reliability water in a single dry year.
- The City has acquired up to 4,500 af/yr of pre-1914 appropriative water rights water from BBID. This supply is restricted with regard to the place of use (Tracy Hills). The City anticipates being able to receive 85 percent of its contractual entitlement in a single dry year (3,825 af/yr). As the projected demand is 3,300 af/yr in 2045 and is lower than the 3,825 af/yr of available supply, the reduction in reliability does not result in a reduction to actual amount of water used. Therefore, the supply in a single dry year is anticipated to be equal to the projected demand within the Tracy Hills area, ranging from 800 af/yr in 2025 to 3,300 af/yr in 2045.
- The City has a total contractual entitlement of 13,135 af/yr of Stanislaus River water provided through the SCWSP. Based on information provided by SSJID, the City expects to receive 76 percent of its SCWSP water supply allocation during 2025, 2030, and 2035 and 56 percent during 2040 and 2045. In addition, the SCWSP water transferred from Escalon is assumed to be unavailable after 2025. As such, the City estimates 9,974 af/yr of SCWSP supply in 2025, 8,444 af/yr in 2030 and 2035, and 6,177 af/yr afterwards.
- During a single dry year, the City anticipates increasing its groundwater production on a short-term basis from the normal year production of 2,500 af/yr to 4,500 af/yr. The groundwater supply is considered to be 100 percent reliable.
- The City anticipates that 700 af/yr of water will be available for use in a single dry year through operation of its ASR well. An additional 300 af/yr is estimated to be available by 2040 for a total of 1,000 af/yr. This water supply is considered to be 100 percent reliable assuming that the City is consistently able to refill the ASR storage during non-drought years to maintain at least 1,000 af in storage at the beginning of a single dry year.
- The City has acquired 10,500 af/yr of storage in Semitropic, which allows the City to withdraw up to 3,500 af/yr for three consecutive years. Due to the difficulties experienced by the City in accessing stored water via the DMC on a short timeframe, the City has conservatively assumed that the Semitropic water will not be available in a single dry year.
- The City anticipates that a Recycled Water Distribution Network and Exchange agreement will be executed with the USBR by 2030 to provide additional CVP supplies to the City in exchange for the City discharging a like amount of tertiary-treated recycled water to the DMC. The City assumes that the Recycled Water Distribution Network and Exchange will be implemented as needed to meet future demand conditions and is currently projected to supply an amount ranging from 1,925 af/yr in 2030 to 7,500 af/yr in 2045. This water supply is considered to be 100 percent reliable.
- The City's recycled water supply is expected to be 100 percent reliable. Based on the projected non-potable demands and assuming that the City makes investments in infrastructure and permitting, the City estimates that they will have access to 1,000 af/yr of recycled water supply in 2025, increasing to 6,300 af/yr in 2045.

The reliability of each of the City's existing and additional planned future water supplies and their projected availability during a single dry year at buildout is shown in Table 5-12.

Table 5-12. Projected Existing and Additional Planned Future Water Supplies Available in Single Dry Years at Buildout

Supply	Percent Allocation/ Entitlement	Projected Available Supplies, af/yr
Existing Water Supplies		
USBR CVP - Tracy Contract[a]	25	1,483
USBR CVP - BCID Contract	0	0
USBR CVP - WSID Contract	0	0
	Total CVP Supplies	**1,483**
BBID (pre-1914 to meet Tracy Hills demand)	100	3,300
SCWSP (SSJID) (pre-1914)[b]	56	6,177
Groundwater[c]	100	4,500
Semitropic Water Storage Bank	0	0
Total Existing Potable Supplies		**15,460**
Additional Planned Future Water Supplies		
Additional USBR CVP (BBID contract)	0	0
Aquifer Storage and Recovery[c] [d]	100	1,000
Recycled Water Exchange[c]	100	7,500
Recycled Water (non-potable)[c]	100	6,300
Total Additional Planned Future Potable Supplies		**8,500**
Total Potable Supplies		**23,960**
Total Additional Planned Future Non-Potable Supplies		**6,300**
TOTAL WATER SUPPLY		**30,260**

Source: City of Tracy 2020 UWMP, Table 7-3, June 2021.

(a) Percent of historical use.
(b) Percentage of contract entitlement is based on information from SSJID for 2040 and later.
(c) Groundwater and recycled water volumes assume the City invests in infrastructure and/or permitting.
(d) ASR volumes assume surplus supplies are available in wet years to inject and store, as well as additional investment in ASR construction and operation.

5.6.1.3 Multiple Dry Years

During multiple dry years, the City's surface water supplies (from both the CVP and SCWSP) may be significantly reduced. Thus, in the event of drought, the City will have to depend more heavily on conservation efforts, groundwater, and the proposed future supply projects.

The following describes the availability and reliability of the City's existing and additional planned future water supplies under multiple dry year conditions:

- The City's contract with the USBR for 10,000 af/yr of DMC/CVP water is subject to M&I reliability. During multiple dry years, the City estimates that it will receive 40 percent of the City's historical use. Based on the historical use of 5,930 af/yr, the projected supply is 2,372 af/yr.

- The City has a total entitlement of 10,000 af/yr of DMC/CVP Ag-reliability water. The City anticipates receiving 0 percent of its DMC/CVP Ag-reliability water in multiple dry years.
- The City has acquired up to 4,500 af/yr of pre-1914 appropriative water rights water from BBID. This supply is restricted with regard to the place of use (Tracy Hills). The City anticipates being able to receive 85 percent of its contractual entitlement in multiple dry years (3,825 af/yr). As the projected demand is 3,300 af/yr in 2045 and is lower than the 3,825 af/yr of available supply, the reduction in reliability does not result in a reduction to actual amount of water used. Therefore, the supply in multiple dry years is anticipated to be equal to the projected demand within the Tracy Hills area, ranging from 800 af/yr in 2025 to 3,300 af/yr in 2045.
- The City has a total contractual entitlement of 13,135 af/yr of Stanislaus River water provided through the SCWSP. Based on information provided by SSJID, the City's SCWSP water supply reliability during multiple dry years range from 56 to 100 percent. In addition, the SCWSP water transferred from Escalon is assumed to be unavailable after 2025.
- During multiple dry years, the City anticipates increasing its groundwater production on a short-term basis from the normal year production of 2,500 af/yr to 4,500 af/yr. The groundwater supply is considered to be 100 percent reliable.
- The City anticipates that 700 af of water will be available for use in multiple dry years through operation of its ASR well. An additional 300 af is estimated to be available by 2040 for a total of 1,000 af. The City is assumed to be unable to refill the ASR storage during multiple dry years. Therefore, the annual ASR supply available is assumed to equal one fifth of the total stored volume (i.e., 140 af/yr between 2025 and 2035 and 200 af/yr between 2040 and 2045). This water supply is considered to be 100 percent reliable assuming that the City is consistently able to refill the ASR storage in non-drought years to maintain at least 1,000 af in storage at the beginning of a multiple dry year sequence.
- The City has acquired 10,500 af/yr of storage in Semitropic, which allows the City to withdraw up to 3,500 af/yr for three consecutive years. Due to the difficulties experienced by the City in accessing stored water via the DMC on a short timeframe, the City has conservatively estimated that the 0 percent of the City's storage will be available in the first year of a five-consecutive-year drought, and 100 percent will be available over the following four years. Based on the City's current storage at Semitropic of 6,887 af, the amount available in the second to fifth year of a five-consecutive-year drought is assumed to be 1,722 af/yr (6,887 af divided by four). A similar reliability estimate is provided for all dry-year sequences under the assumption that the City is consistently able to re-fill the water bank in non-drought years to maintain at least 7,000 af/yr in storage at the beginning of a multiple dry year sequence.

- The City anticipates that a Recycled Water Distribution Network and Exchange agreement will be executed with the USBR by 2030 to provide additional CVP supplies to the City in exchange for the City discharging a like amount of tertiary-treated recycled water to the DMC. The City assumes that the Recycled Water Distribution Network and Exchange will be implemented as needed to meet future demand conditions and is currently projected to supply an amount ranging from 1,925 af/yr in 2030 to 7,500 af/yr in 2045. This water supply is considered to be 100 percent reliable.
- The City's recycled water supply is expected to be 100 percent reliable. Based on the projected non-potable demands and assuming that the City makes investments in infrastructure and permitting, the City estimates that they will have access to 1,000 af/yr of recycled water supply in 2025, increasing to 6,300 af/yr in 2045.

The reliability of each of the City's existing and additional planned future water supplies and their projected availability during a five-consecutive-dry year (multiple dry year) period at buildout is shown in Table 5-13.

Table 5-13. Projected Existing and Additional Planned Future Water Supplies Available Five-Consecutive-Dry Years at Buildout

Supply	Percent Allocation/ Entitlement	Projected Available Supplies, af/yr				
		Year 1	Year 2	Year 3	Year 4	Year 5
Existing Water Supplies						
USBR CVP - Tracy Contract[a]	40	2,372	2,372	2,372	2,372	2,372
USBR CVP - BCID Contract	0	0	0	0	0	0
USBR CVP - WSID Contract	0	0	0	0	0	0
Total CVP Supplies		**2,372**	**2,372**	**2,372**	**2,372**	**2,372**
BBID (pre-1914 to meet Tracy Hills demand)	100	3,300	3,300	3,300	3,300	3,300
SCWSP (SSJID) (pre-1914)	*See Note (b)*	11,120	11,120	6,177	6,177	11,120
Groundwater[c]	100	4,500	4,500	4,500	4,500	4,500
Semitropic Water Storage Bank	100	0	1,722	1,722	1,722	1,722
Total Existing Potable Supplies		**21,292**	**23,014**	**18,071**	**18,071**	**23,014**
Additional Planned Future Water Supplies						
Additional USBR CVP (BBID contract)	0	0	0	0	0	0
Aquifer Storage and Recovery[c][d]	100	200	200	200	200	200
Recycled Water Exchange[c]	100	7,500	7,500	7,500	7,500	7,500
Recycled Water (non-potable)[c]	100	6,300	6,300	6,300	6,300	6,300
Total Additional Planned Future Potable Supplies		**7,700**	**7,700**	**7,700**	**7,700**	**7,700**
Total Potable Supplies		**28,992**	**30,714**	**25,771**	**25,771**	**30,714**
Total Additional Planned Future Non-Potable Supplies		**6,300**	**6,300**	**6,300**	**6,300**	**6,300**
TOTAL WATER SUPPLY		**35,292**	**37,014**	**32,071**	**32,071**	**37,014**

Source: City of Tracy 2020 UWMP, Tables 7-4 and 7-5, June 2021.

(a) Percent of historical use.

(b) Information provided by SSJID. SSJID's reliability estimates for a five consecutive year drought were based on the historical supplies available for the SCWSP during the 2012 to 2016 drought period. During 2012, 2013, and 2016 (the first, second, and fifth years), SSJID was able to provide the full allocation to SCWSP participants, whereas during 2014 and 2015 (the third and fourth years), SSJID was only able to provide 75 percent of the full allocation to SCWSP participants.

(c) Groundwater and recycled water volumes assume the City invests in infrastructure and/or permitting.

(d) ASR volumes assume surplus supplies are available in wet years to inject and store, as well as additional investment in ASR construction and operation.

5.6.2 Emergency Water Supply Conditions

During the recent drought conditions in California, water supply deliveries from the SWP and CVP (and other surface water supply sources throughout California) were severely reduced and even the availability of pre-1914 water rights was challenged. Many water supply agencies, including the City, implemented their Water Shortage Contingency Plans, including mandatory water conservation measures, to reduce water use. Even with 0 percent deliveries from the City's USBR CVP agricultural supplies in 2014, the diversity of the City's water supply portfolio together with water conservation efforts by the City's customers allowed the City to meet all water demands. If the recent drought were to re-occur, and deliveries of surface water supplies are reduced further, the City's Water Shortage Contingency Plan would be enacted as needed.

The City's Water Shortage Contingency Plan includes shortage response actions for six water shortage levels up to greater than 50 percent shortage due to foreseeable or unforeseeable events. The City's Water Shortage Contingency Plan is included in Appendix H of the 2020 UWMP. The City may implement demand reduction actions, supply augmentation, mandatory restrictions, and other actions as appropriate for the shortage level to reduce the gap between supply and demand.

Further, the City has prepared a Water System Emergency Response Plan which provides a framework for emergency response by the City's Utilities Department by describing the department's emergency management organization, roles, and responsibilities and emergency policies and procedures. The Water System Emergency Response Plan provides action plans to be implemented to address the emergency.

5.6.3 Non-Potable Water Supply Reliability

Recycled water supplies are generally regarded as being highly reliable water supplies, even during drought conditions. This is because wastewater flows are primarily generated from interior water uses which generally remain about the same throughout the year and during drought conditions (reductions in water use during drought conditions are primarily the result of reduced exterior water uses which generally do not become wastewater flows). For this reason, it is assumed that recycled water supplies will be 100 percent reliable under all hydrologic conditions.

5.7 SUFFICIENCY OF THE CITY'S WATER SUPPLIES

5.7.1 Potable Water Supply Availability

Table 5-14 summarizes the projected availability of the City's existing and planned future potable water supplies compared with projected water demands in normal, single dry and multiple dry years at buildout.

To be conservative, water demands were assumed to be at normal levels. With future planned projects implemented, the results of the assessment show that water supply is sufficient during normal years. However, during a single dry year or a multiple dry year period, the City must depend more heavily on conservation efforts, groundwater, and the proposed future supply projects to overcome the gap between supply and demand. As described in the City's 2020 UWMP, these findings are primarily due to projected reduced reliability of the City's CVP supplies and SSJID supplies in dry years.

Table 5-14. Summary of Buildout Total Water Supply Versus Demand During Hydrologic Normal, Single Dry, and Multiple Dry Years[a]

Hydrologic Condition		Supply and Demand Comparison, af/yr
Normal Year[b]		
Available Total Water Supply		40,168
Total Water Demand		39,800
	Potential Surplus (Deficit)	368
	Percent Shortfall of Demand	-
Single Dry Year[c]		
Available Total Water Supply		30,259
Total Water Demand		39,800
	Potential Surplus (Deficit)	(9,541)
	Percent Shortfall of Demand	24%
Multiple Dry Years[d]		
Year 1	Available Total Water Supply[e]	35,292
	Total Water Demand	39,800
	Potential Surplus (Deficit)	(4,508)
	Percent Shortfall of Demand	11.3%
Year 2	Available Total Water Supply	37,014
	Total Water Demand	39,800
	Potential Surplus (Deficit)	(2,786)
	Percent Shortfall of Demand	7.0%
Year 3	Available Total Water Supply	32,071
	Total Water Demand	39,800
	Potential Surplus (Deficit)	(7,729)
	Percent Shortfall of Demand	19.4%
Year 4	Available Total Water Supply	32,071
	Total Water Demand	39,800
	Potential Surplus (Deficit)	(7,729)
	Percent Shortfall of Demand	19.4%
Year 5	Available Total Water Supply	37,014
	Total Water Demand	39,800
	Potential Surplus (Deficit)	(2,786)
	Percent Shortfall of Demand	7.0%

(a) Water demands are from Table 4-16.
(b) Normal Year supplies are from Table 5-11
(c) Single Dry Year supplies are from Table 5-12.
(d) Multiple Dry Year supplies are from Table 5-13
(e) Assumes 0 percent of the City's storage in Semitropic is available for the first year.

To close the gap between supply and demand during dry years, the City will need to implement its Water Shortage Contingency Plan to reduce water demands and implement future water supply projects. This includes full implementation of the proposed Recycled Water Distribution Network and Exchange Program and expansion of the ASR Program. Delays in implementing these projects could result in greater water supply shortages and the need for additional water conservation to meet demands. Investments in wet year water supplies will also be needed to refill storage in Semitropic and expand the City's ASR program.

The dry year shortfalls presented in Table 5-14 include water supply and demand projections with numerous uncertainties and the situation is dynamic and discussed in Section 7 of the 2020 UWMP. The City continues to work on strategies and actions to address the projected water supply shortfall. Uncertainties are itemized below:

- The Bay-Delta Plan Amendment implementation is under negotiation. The SSJID and others are continuing negotiations with the SWRCB on implementation of the Bay-Delta Plan Amendment for water supply cutbacks, particularly during droughts. This is a dynamic situation and the projected drought cutback allocations may need to be revised before the next (i.e., 2025) UWMP depending on the outcome of ongoing negotiations. The City has considered a conservative estimate of the potential impacts of the Bay-Delta Plan Amendment on the SCWSP (and therefore the City), which is provided in Appendix G of its 2020 UWMP.
- The supply yield of the City's development of additional ASR and recycled water supplies are accounted for in current supply projections. However, implementation of these projects will require significant investment by the City. Similarly, investments in wet years supplies will be needed to refill storage in Semitropic and expand the City's ASR program.
- The City continues to work closely with the USBR and SSJID on their rationing policies to ensure that M&I needs can be met. Rationing policies may potentially be revised.
- The City's projected water demands are subject to change in the future based on water conservation policies and regulations for current and future development, and the pace and extent of development.
- Frequency and duration of cutbacks and, therefore, the shortfalls are also uncertain. In addition to the supply volumes, the above listed uncertainties would also impact the projected frequency and duration of shortfalls.

5.7.2 Recycled Water Supply Availability

Recycled water will be treated to a tertiary level in accordance with Title 22 requirements at the City's WWTP and will be distributed to recycled water use areas within the City's SOI for use for landscape irrigation and other non-potable uses and will be used as part of the Recycled Water Distribution Network and Exchange Program. It is anticipated that with expansion of the City's WWTP adequate recycled water supplies will be available on an annual basis to meet the projected recycled water demands at buildout of the City's General Plan.

The projected future use of recycled water supplies to meet non-potable water demands such as landscape irrigation within the City's service areas is critical to reduce potable water demands and reserve the City's available potable water supplies for their most important uses and to ensure that the City has adequate water supplies to meet future water demands. Without this future recycled water use within the City's service areas, and without the Recycled Water Distribution Network and Exchange Program, the City would have inadequate potable water supplies to meet anticipated future water demands.

5.8 WATER MANAGEMENT STRATEGIES AND OPTIONS

The City has developed strategies and actions to address the projected supply shortfalls. These are discussed in the City's 2020 UWMP and summarized below.

5.8.1 Recycled Water for Non-Potable Use

The City continues to develop recycled water supplies as discussed in Section 5.5.1. Recycled water is planned to augment non-potable demands that would otherwise be supplied with potable water. Buildout potable water demands could be less than the current projections and therefore the resultant supply shortage will likely to be smaller.

5.8.2 Future Water Supply Projects

The City continues to evaluate the expansion of its existing supply and to obtain new supply sources, including the ASR Program and Recycled Water Distribution Network and Exchange Program. Other potential supply options, such as direct potable reuse of recycled water, are also being considered.

The City has also recently entered discussions with the Contra Costa Water District (CCWD) and the San Luis & Delta-Mendota Water Authority to explore the City's potential participation in the Phase 2 Los Vaqueros Reservoir Expansion Project. Los Vaqueros Reservoir is an offstream storage facility located in the coastal foothills west of the Sacramento-San Joaquin Delta. CCWD completed construction of the Los Vaqueros Project in 1997 with an original storage capacity of 100,000 acre-feet. CCWD stores water in Los Vaqueros Reservoir that is diverted from the Delta when water quality is favorable for later release and blending when Delta water quality is degraded. An initial expansion, Phase 1, to 160,000 acre-feet was completed in 2012 to address seasonal water quality degradation and drought needs. The reservoir also provides important emergency water supply storage, recreation, and flood management. The proposed Phase 2 expansion project builds upon the successful Phase 1 expansion completed in 2012. The proposed project will include a regional intertie (the Transfer-Bethany Pipeline), improved pump stations and pipelines and could increase the reservoir's capacity up to 275,000 acre-feet. The Transfer-Bethany Pipeline is currently anticipated to be completed in 2025/2026, with the reservoir expansion to be completed by 2030. The City's participation in the project would increase the City's water supply reliability by providing storage of supplies for use in dry years. The estimated cost for 5,000 acre-feet of storage for the City will be approximately $10 million plus an additional $1.5 million for implementation. In October 2021, the Tracy City Council authorized staff to initiate the process to participate in the project and authorized the City Manager to execute the project activity agreement.

The City is also participating in the proposed B.F. Sisk Dam Raise & Reservoir Expansion Project. The proposed B.F. Sisk Dam Raise & Reservoir Expansion by the USBR and the San Luis Delta Mendota Water Authority provides a reliable option for storage of excess water during the wet season and use during drought conditions when needed. The B.F. Sisk Dam and Reservoir, located approximately 50 miles south of the City, is a major storage facility of the Central Valley Project from which the City receives surface water. The project's environmental document has already been prepared for expansion of the reservoir. The proposed project will add 130,000 acre-feet of additional storage capacity in the reservoir. The project's feasibility study is in its final stages of completion and total cost of the expansion project is estimated at $1 billion. If the City participates in the project, water will be delivered to the City's JJWTP from the DMC through an exchange agreement with the USBR and other participating agencies. The estimated cost for 5,000 acre-feet of storage for the City will be approximately $38 million. In June 2022, the Tracy City Council authorized staff to initiate the process to participate in the project and authorized the City Manager to execute the project activity agreement.

5.8.3 Implementation of Demand Management Measures

The City has an active water conservation program and continues to implement the demand management measures described in Section 9 of the City's 2020 UWMP. Further, in response to the anticipated future shortfalls, the City has developed a robust Water Shortage Contingency Plan that systematically identifies ways in which the City can reduce water demands. The Water Shortage Contingency Plan is included in Section 8 of the City's 2020 UWMP.

5.8.4 Policy-Based Water Efficiency Tools

The City is currently exploring other policy-based water efficiency tools that other supply-constrained agencies across California have implemented. These policy-based tools are often bundled together and referred to as Water Demand Offset (WDO) or Water Neutrality policies. Through these policies, project developers are generally required to offset the new demand anticipated by the development through some combination of demand mitigation options, such as:

- **On-site retrofits.** Project developer with existing property reduces total projected water demand by retrofitting existing property with efficient water fixtures. If projected water demand is reduced below baseline for existing property, no off-site WDOs are required. If not, offsite WDOs are required.
- **Off-site retrofits.** Project developer coordinates and pays for installation of water efficient fixtures at other properties or converts existing irrigation systems to recycled water for other off- site properties, typically those owned by other entities.
- **On-site reuse.** Larger scale developments are required to implement on-site reuse of water, including rainwater, greywater, stormwater, and blackwater, as has recently been implemented by the Cities of San Francisco and Menlo Park.
- **Supply augmentation.** Project developer secures its own water supply to serve the development, either through direct provision of water to the development or through an agreement to transfer rights to the water supplier.

- **WDO fees.** Project developer pays fees to implementing entity based on the amount of water offset, and the agency uses the fees to fund water conservation programs. Such conservation programs could include system water loss mitigation projects (e.g., capital improvement, Advanced Metering Infrastructure [AMI] meters, etc.), purchase of water efficient equipment (e.g., NO-DES hydrant flushing machine to recycle water used to flush mains), and recycled water system infrastructure, as well as fixture rebate or retrofit and education-based conservation programs.

Such policies could be designed as a "net neutral" policy wherein the new development is required to offset all new demands associated with the development project and minimize the overall supply reliability impacts for the existing customers.

5.9 SUMMARY OF WATER SUPPLY RECOMMENDATIONS

The following summarizes recommendations related to the City's water supplies:

- Provisions for ammonia addition should be added to the City's existing Lincoln Well, Lewis Manor Well, Park & Ride Well and Ball Park Well, and any future wells, to provide maximum flexibility for the City's use of groundwater in conjunction with the City's surface water supplies which are disinfected through chloramination.
- The City's ASR Program should be expanded in the future to provide up to 1,000 af/yr of supply. The City is considering requesting an amendment to its ASR permit to allow for the use of treated CVP supplies for ASR injection, in addition to the SCWSP water supplies. This would provide more operational flexibility for ASR injection and allow the City to optimize the storage of surface water supplies in wet years for later extraction in dry years. An evaluation of potential ASR options and operational scenarios should be conducted as additional ASR wells are planned to determine if dedicated SSJID supply pipelines to the ASR wells will be required if the City's ASR permit cannot be modified to allow for other supplies to be injected. See Chapter 8 for additional discussion about the City's future ASR wells.
- The City should continue discussions with the Contra Costa Water District for the City's participation in the Phase 2 Los Vaqueros Reservoir Expansion Project. The City's participation in the project would increase the City's water supply reliability by providing storage of supplies for use in dry years.
- The proposed Recycled Water Distribution Network and Exchange Program should be developed as soon as possible to provide for the exchange of recycled water supplies for surface water supplies which can be treated and used to meet the City's potable water demands. The City's 2020 UWMP assumes an exchange quantity of 7,500 af/yr; however, if this amount could be increased, projected water shortages may be reduced. Subsequent revisions to the projected potable water demand and/or the water supply availability and reliability assumptions may change the required quantities and timing of the proposed Recycled Water Distribution Network and Exchange Program.

- Development the Recycled Water Distribution Network and Exchange Program will require an expansion of the City's WWTP to be able to produce the recycled water required for the exchange and the design and construction of a recycled water pipeline to discharge recycled water to the DMC downstream of the City's JJWTP intake. Additional discussion of the pipeline required for the Recycled Water Distribution Network and Exchange Program is provided in Chapter 9.
- The City's recycled water system should continue to be developed to the maximum extent possible to allow for irrigation demands to be met with recycled water supplies to offset the demand for potable water supplies. The quantity required is estimated to be 6,300 af/yr by buildout based on the recycled water use assumptions described in Chapter 4.

As described in this Citywide Water System Master Plan Update, and in the City's 2020 UWMP, water supply conditions continue to change in California, and the availability and reliability of the City's water supplies may continue to change in the coming years. City staff are continuously monitoring water supply conditions and making adjustments to water system operations as needed. Additional ASR wells and/or other infrastructure improvements may be needed to serve developments which rely on water supplies with agricultural rights under various agreements with the City. The water supply recommendations described above, and their associated costs, may need to be refined in the future as water supply conditions change.

CHAPTER 6
System Performance and Operational Criteria

6.1 OVERVIEW

The purpose of this chapter is to define the recommended performance and operational criteria for the City's potable and recycled water distribution systems. For the potable water system, these criteria include recommendations for the required fire flow and flow duration, definitions of "emergency events", and recommendations for surface water treatment capacity, system storage capacity (operational, fire flow, and emergency components), system pumping capacity, minimum and maximum system pressures, and maximum pipeline velocity and head loss. The recycled water system performance and operational criteria includes recommendations for recycled water treatment capacity, system storage capacity (seasonal and operational components), system pumping capacity, minimum and maximum system pressures, and maximum pipeline velocity and head loss.

The City currently uses the City Design Standards (dated February 2020) and City Standard Plans and Specifications (dated February 2020) for the planning and design of its potable and recycled water distribution systems. The City Design Standards and City Standard Plans and Specifications should be referenced for specific design information for water system facilities as applicable.

Key water system design criteria and operational standards from the City Design Standards and City Standard Plans and Specifications documents are incorporated into this chapter; however, additional explanation and discussion have been added to further describe various system recommendations. The following sections of this chapter present the recommended performance and operational criteria for the City's potable and recycled water systems:

Potable Water System

- General Potable Water System Reliability and Recommendations
- Fire Flow Requirements
- Potable Water System Capacity During High Demand Periods
- Water Treatment Capacity
- Potable Water Storage Capacity
- Potable Water Pumping Facility Capacity
- Potable Water Critical Supply Facilities
- Potable Water Transmission and Distribution Pipeline Sizing and Recommended System Pressures

Recycled Water System

- Recycled Water Demand Condition Evaluation
- Recycled Water Treatment Capacity
- Recycled Water Storage Capacity
- Recycled Water Pumping Facility Capacity
- Recycled Water Transmission Pipeline Sizing and Recommended System Pressures

6.2 POTABLE WATER SYSTEM

Components of the recommended performance and operational criteria for the City's potable water system are discussed below.

6.2.1 General Potable Water System Reliability and Recommendations

Attention to enhancing the reliability of the system under all conditions is an important part of maintaining high quality water service. Water system reliability is achieved through a number of system features including: (1) appropriately sized storage facilities, (2) redundant or "firm" pumping, transmission, and treatment facilities where required, and (3) alternate power supplies. Reliability and water quality are also improved by designing looped water distribution pipelines and avoiding dead-end distribution mains whenever possible. Looping pipeline configurations reduces the potential for stagnant water and the associated problems of poor taste and low chlorine residuals. In addition, proper valve placement is also necessary to maintain reliable and flexible system operation under normal and abnormal operating conditions.

6.2.1.1 Water Quality Standards

Water quality standards largely pertain to protecting public health and consistently delivering a satisfactory product to the customer. The U.S. Environmental Protection Agency (EPA) and the State Water Resources Control Board Division of Drinking Water (DDW) are the agencies responsible for establishing water quality standards. The EPA and DDW prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The City, as water purveyor, is responsible for ensuring that the applicable water quality standards and regulations are met at all times.

6.2.1.2 Recommendations for New Developments

Various policies to reduce water use and comply with water efficiency standards were recommended in Chapter 2 for future service areas and new developments within the City. These policies were recommended to assist the City with achieving its water conservation goals and maintaining the long-term sustainability of its water resources. As new developments are integrated into the City's existing water system, the recommended policies discussed in Chapter 2 should be reviewed for compliance. In addition, proposed water system facilities located in the future service areas and new developments within the City should also meet the recommended system performance criteria (e.g., minimum and maximum system pressures) discussed in the following sections and more specifically under *Section 6.2.8 Potable Water Transmission and Distribution Pipeline Sizing and Recommended System Pressures.*

6.2.2 Fire Flow Requirements

The City's Public Works Department operates and maintains the water distribution system within the City, but the City's Fire Department (Fire Department) is concerned with the availability of adequate water supply for firefighting purposes. Consequently, the Fire Department establishes minimum water flows and residual system pressures during a fire fighting event that the City is responsible for providing from the potable water system.

The Fire Department uses the California Fire Code (CFC) Table B150.1 *Minimum Required Fire Flow and Flow Duration for Buildings,* to assist them in establishing minimum fire flows and durations for individual structures. The recommended fire flow requirements for the City based on various land use designations are presented in Table 6-1. These fire flow requirements were developed based on discussions with the Fire Department's Fire Marshal and will be used for the evaluation of the existing and future water system.

For planning purposes, the minimum fire flows identified in Table 6-1 are to be met concurrently with maximum day demand conditions while maintaining a minimum residual system pressure of 20 pounds per square inch (psi) throughout the water system. This criterion has been decreased from the 2012 WSMP, which used 30 psi as the minimum residual system pressure during a single fire flow event. For this Citywide Water System Master Plan, the criterion has been adjusted for consistency with the Fire Department's requirements and typical industry standards.

For large pressure zones, the City's water system should also have the capability to meet a system demand condition equal to the occurrence of a maximum day demand with two simultaneous fire flow events within that pressure zone while maintaining a minimum residual system pressure of 20 psi throughout the water system[1]. This conservative assumption of two simultaneous fire flow demands will help stress the City's water system and determine if the water system can provide reliable service during high demand conditions. Additionally, as discussed in subsequent sections of this chapter, fire flows presented in Table 6-1 and their expected duration will also be used to establish the City's storage capacity requirements.

[1] It is assumed that these two fire flow events will consist of one smaller single family residential fire flow combined with another larger industrial fire flow.

Table 6-1. Recommended Fire Flow Requirements[a,b]

Land Use Designation	Non-Sprinklered[c]			Sprinklered[c,d]		
	Fire Flow, gpm	Duration, hours	Recommended Storage, MG	Fire Flow, gpm	Duration, hours	Recommended Storage, MG[j]
Single Family Residential[e]	1,500	2	0.18	1,500	2	0.18
Multi Family Residential[f]	2,500	2	0.30	2,500	2	0.30
Commercial/Office[g]	6,000	4	1.44	3,500 [i]	4	0.72
Industrial	8,000	4	1.92	4,500 [i]	4	0.96
Institutional[h]	8,000	4	1.92	4,500 [i]	4	0.96

(a) Construction type and fire flow calculation area are not generally known during the development of a master plan; consequently, fire flow requirements set forth in this table are based on previous estimates for these land use types and similar communities.

(b) Unique projects or projects with alternate materials may require higher fire flows and should be reviewed by the Fire Marshal on a case-by-case basis (e.g., proposed commercial/industrial areas and schools).

(c) Specific fire flows were determined from Table B105.1 of the 2016 CFC, and depend on construction type and fire flow calculation area. Refer to Section 903 of the 2016 CFC and Section 9.06.060 of the City of Tracy Municipal Code for automatic sprinkler system requirements.

(d) As stated in the City of Tracy Design Standards (February 2020), the Fire Marshal normally allows up to a 50 percent reduction in fire flow if a building is provided with an automatic sprinkler system. However, the CFC also requires that no fire flow be less than 1,000 gpm for single family residential or 1,500 gpm for all other building types. For a more conservative fire flow estimate, requirements for sprinklered Single Family and Multiple Family Residential buildings were not reduced for this Citywide Water Master Plan.

(e) Single Family Residential includes Very Low and Low Density Residential land uses.

(f) Multi Family Residential includes Medium, High, and Very High Density Residential land uses.

(g) Commercial/Office includes Commercial, Office, Motel/Hotel and Mixed Use land uses.

(h) Institutional includes Medical, Public Facilities, School, Airport, Church, and Cemetery land uses.

(i) Fire flow includes a 500 gpm demand for on-site sprinkler flow.

(j) Recommended storage volumes do not include volume associated with 500 gpm sprinkler flow.

6.2.3 Potable Water System Capacity During High Demand Periods

Maximum day demand plus fire flow and peak hour demand conditions will be used to assess the adequacy of the City's potable water system during high demand periods. Adopted peaking factors for maximum day and peak hour demands are discussed in Chapter 4. The following sections discuss the assumptions and recommended criteria for each demand condition.

6.2.3.1 Maximum Day Demand plus Fire Flow

In accordance with typical industry standards, the City's water system should have the capability to meet a system demand condition equal to the occurrence of a maximum day demand concurrent with either one or two simultaneous fire flow event(s) while meeting the recommended system performance criteria (e.g., minimum and maximum system pressures) discussed under *Section 6.2.8 Potable Water Transmission and Distribution Pipeline Sizing and Recommended System Pressures.*

Maximum day demand plus fire flow should be met from a combination of supply sources (i.e., treated surface water from the JJWTP and SSJID supplies plus groundwater) and treated water storage reservoirs. The analysis of specific fire flow evaluations will be conducted assuming the largest booster pump at each pump station is offline (i.e., firm booster pumping capacity). In addition, the City's groundwater well system (well pumps) will be assumed to pump at firm capacity (i.e., firm groundwater pumping capacity) during a specific fire flow evaluation. Firm groundwater pumping capacity assumes that 20 percent of the City's groundwater wells will be out of service at any given time due to maintenance or operational issues.

These conservative assumptions ensure the reliability and flexibility of the system to provide sufficient flow during emergency fire flow conditions. It is also assumed that the pump stations with only one booster pump or without back-up power capability (either an on-site generator or adaptor for a plug-in generator) will not be available during an emergency fire flow analysis.

6.2.3.2 Peak Hour Demand

Peak hour demand should be met from a combination of supply sources (i.e., treated surface water from the JJWTP and SSJID supplies plus groundwater) and treated water storage reservoirs. Assumptions regarding firm pumping capacity will also apply during a peak hour demand condition. During a peak hour demand condition, the City's water system should be able to meet the recommended system performance criteria (e.g., minimum and maximum system pressures) discussed under *Section 6.2.8 Potable Water Transmission and Distribution Pipeline Sizing and Recommended System Pressures.*

6.2.4 Water Treatment Capacity

Sufficient water treatment capacity from a combination of the existing and/or expanded JJWTP, the City's treated surface water supplies from SSJID, and groundwater wells should be available to meet the City's maximum day demand condition. In addition, the City's goal is to meet maximum day demands without relying on groundwater. Sufficient treated water pumping capacity should also be available to assist in meeting a maximum day demand condition.

6.2.5 Potable Water Storage Capacity

The total potable water storage capacity required will be based on the following three components within each pressure zone:

- Operational Storage
- Fire Storage
- Emergency Storage

A discussion of these three storage components, along with a discussion of "credits" for groundwater supply and treated surface water supply, follows.

6.2.5.1 Operational Storage

Over any 24-hour period, water demands will vary. Typically, higher water demands will occur during the early morning hours when people are irrigating landscape and getting ready to go to work or school. Water demands will then decline to some nominal baseline level (depending on the proximity to water use patterns of adjacent commercial/industrial areas), and will then begin to increase again depending on outside water needs (and corresponding temperature), until it reaches a higher water demand in the early evening hours as people return home from work or school. Throughout the year, the peaks of this cycle will vary according to customer needs; thereby, creating maximum day and peak hour demands.

Typically, water treatment plants, supply turnouts, and/or wells are operated at a constant rate over a 24-hour period (baseline) and augmented by additional flow from storage tanks, and/or wells during high demand periods, as needed. Storage tanks are normally refilled when demands drop below the baseline water production flow rate. The storage volume used to meet these peak demand periods is called operational storage.

The operational storage requirements should be calculated based on the diurnal demand in a particular pressure zone or service area. If sufficient data is not available to develop a diurnal demand, then the recommended volume of water to be held in reserve for operational storage should be at least equal to 30 percent of the total volume of water used on a maximum day demand condition.

6.2.5.2 Fire Storage

As discussed above, fire flow requirements are identified in the CFC. These requirements are based on flow (in gpm), size of building (in square feet), and type of construction (wood frame, metal, masonry, installation of sprinklers, etc.). After a fire flow requirement is established, it is multiplied by the required fire flow duration to produce an estimate of the total volume of fire flow storage required. Table 6-1 presents the recommended fire flow criteria and associated required fire flow storage.

Sufficient fire flow storage should be available for the following simultaneous fire flow events in larger pressure zones (i.e., Zones 1 and 2):

- A Single Family Residential fire flow of 1,500 gpm for a duration of two hours. The resulting volume required for fire flow storage is 0.18 MG.
- An Industrial fire flow of 4,000 gpm for a duration of four hours (if sprinklered). The resulting volume required for fire flow storage is 0.96 MG[2].

If unavailable by gravity storage, the fire flow must be supplied with a National Fire Protection Association (NFPA) rated fire pump. If an NFPA rated fire pump is not used, then a pump(s) and motor(s) combination with a backup power source of sufficient capacity to meet the required maximum fire flow and minimum residual pressure requirements, as determined by the Fire Marshal, will be required.

6.2.5.3 Emergency Storage

A reserve of stored water is also required to meet demands during an emergency. An emergency is defined as an unforeseen or unplanned event that may degrade the quality or quantity of potable water supplies available to serve customers. There are three types of emergency events that a water utility typically prepares for:

- Minor emergency. A fairly routine, normal, or localized event that affects a few customers, such as a pipeline break, malfunctioning valve, hydrant break, or a brief power loss. Utilities plan for minor emergencies and typically have staff and materials available to correct them quickly.
- Major emergency. A disaster that affects an entire, and/or large, portion of a water system, lowers the quantity and quality of the water, or places the health and safety of the community at risk. Examples include water treatment plant failures, raw water contamination or major power grid outages. Water utilities infrequently experience major emergencies.
- Natural disaster. A disaster caused by natural forces or events that create water utility emergencies. Examples include earthquakes, forest or brush fires, hurricanes, tornados or high winds, floods, and other severe weather conditions such as freezing or drought that damage or cause water system facilities to not be able to operate.

Determination of the required volume of emergency storage is a policy decision based on the assessment of the risk of failures and the desired degree of system reliability. The amount of required emergency storage is a function of several factors including the diversity of the supply sources, redundancy and reliability of the production facilities, and the anticipated length of the emergency outage. In developing an emergency storage requirement for the City, typical industry standards were used.

[2] Recommended storage does not include volume associated with 500 gpm sprinkler flow (refer to Table 6-1). Assumes a 50 percent reduction in the required fire flow due to the installation of fire sprinklers.

The American Water Works Association (AWWA) states that no formula exists for determining the amount of emergency storage required, and that the decision will be made by the utility based on a judgment about the perceived vulnerability of the system. For this Citywide Water System Master Plan, it has been assumed that the emergency storage requirement will be based on minor emergencies and *specific* major emergency criteria. The 2012 WSMP used an emergency storage volume requirement of two (2) times the average day demand. After reviewing emergency storage criteria for other similar water systems within the region, and taking into account the City's redundant sources of supply (JJWTP, SSJID, and groundwater), it is recommended that the City reduce the minimum quantity of emergency storage volume required to 1.5 times the average day demand for this Citywide Water System Master Plan Update.

6.2.5.4 Groundwater Credit

Based on the City's available groundwater wells, groundwater storage can account for a portion of the recommended emergency storage. The following must be true to use the groundwater supply to offset the need to provide surface storage:

- Groundwater supply is of potable water quality and can be reliably accessed (i.e., wells are equipped with on-site emergency generators).
- Groundwater supply is not already being relied upon to meet the City's average day demand requirements.
- Sufficient water distribution facilities are available to distribute this water to demand areas.

It will be assumed that only the firm groundwater supply will be available for a groundwater credit to offset the City's emergency storage requirement (i.e., 20 percent of wells could be out of service at any given time).

6.2.5.5 Treated Surface Water Supply Credit

Because the City currently has two independent sources of treated surface water supply (JJWTP and SSJID supplies), some quantity of treated surface water supply capacity can account for a portion of the City's recommended emergency storage. For this Citywide Water System Master Plan, it will be assumed that the smaller of the treated surface water supply sources (SSJID) will be available to offset a portion of the emergency storage requirement. However, the following must be true to use treated surface water supply to offset the need to provide surface storage:

- Treated surface water supply can be reliably accessed (i.e., treated surface water supply facility is equipped with on-site emergency generator).
- Sufficient treated surface water booster pumping facilities are available to distribute this water to demand areas.

6.2.5.6 Total Storage Capacity Recommended

The City's recommended potable water storage capacity should be the sum of the following components:

- Operational: Volume of water necessary to meet diurnal peaks observed throughout the day, assumed to be equivalent to at least 30 percent of the maximum day demand.
- Fire Flow: Volume of water necessary to supply two simultaneous fire flow events in larger pressure zones (i.e., Zones 1 and 2).
- Emergency: Volume of water necessary to provide 1.5 times an average day demand.
- Groundwater Credit: Equal to the firm groundwater supply that can be reliably accessed (facilities equipped with auxiliary power).
- Treated Surface Water Supply Credit: Equal to the smaller of the available treated surface water supply sources (SSJID).

It should be noted that the sum of groundwater and treated surface water supply credits cannot be greater than the recommended emergency storage volume. The amount of total system storage and system peaking capacity required to meet these criteria will change over time as the City continues to grow and potable water demands increase.

6.2.6 Potable Water Pumping Facility Capacity

Sufficient firm water system pumping capacity should be provided to meet the greater of the following two demand conditions within each pressure zone and any additional pressure zone(s), which are provided service from this particular pressure zone.

1. A maximum day demand with two simultaneous fire flow events in larger pressure zones (i.e., Zones 1 and 2 should assume one smaller single family residential fire flow combined with another larger industrial fire flow) with booster pumps and well pumps assumed to operate at firm pumping capacity.
2. A peak hour demand with booster pumps and well pumps assumed to operate at firm pumping capacity.

The highest demand requirement between these two demand conditions sets the water system pumping capacity requirement. However, sufficient pumping capacity should also be provided so that the maximum day demand within each pressure zone can be supplied using firm pumping capacity with no assistance from storage reservoirs.

6.2.7 Potable Water Critical Supply Facilities

Critical pumping facilities are defined as those facilities that provide service to pressure zone(s) and/or service area(s) which do not have sufficient emergency storage available (see *Section 6.2.5.3 Emergency Storage*) and that meet the following criteria:

- The largest pumping facility that provides water to a particular pressure zone and/or service area.
- A facility that provides the sole source of water to single or multiple pressure zones and/or service areas.
- A pumping facility that provides water from a supply turnout.
- A pumping facility that provides water from key groundwater supply wells (depends on capacity, quality and location).

All critical pumping facilities should be equipped with an on-site, back-up power generator. At less critical facilities, a plug-in adapter will be used to allow interconnection to a portable generator, which will be brought to the site by City staff during a prolonged power outage. In addition, portable generator booster connections will be configured at all tank/booster pump locations.

The City should also consider the following policies to make operations of the City's pumping facilities more efficient:

- Install solar power systems, or alternative power sources, at existing and new pump stations and other water system facilities, as feasible, to reduce electrical power consumption.
- Increase the frequency of routine O&M activities for existing pump stations and wells to maintain pump efficiencies and reduce power demands.

6.2.8 Potable Water Transmission and Distribution Pipeline Sizing and Recommended System Pressures

The following criteria will be used as guidelines for sizing new transmission and distribution pipelines. However, the City's existing system will be evaluated on a case–by-case basis. For example, if an existing pipeline experiences head loss in excess of the criteria described below during a maximum day plus fire flow event, this condition, by itself, does not necessarily indicate a deficiency as long as the minimum system pressure criterion is satisfied.

Consequently, the City's existing system will be evaluated using pressure as the primary criterion; and secondary criteria, such as pipeline velocity, head loss, age, and material type, will be used as indicators to locate where water system improvements may be needed.

New transmission and distribution pipelines to serve the City's future service areas should be located within designated utility corridors wherever possible. These designated utility corridors should be within public rights-of-way to minimize or eliminate the need for utility easements within private property.

6.2.8.1 Potable Water Transmission System

Transmission pipelines are generally 18-inches in diameter or larger and should be designed based on the criteria described below for average day, maximum day, and peak hour demand conditions. The criteria reflect industry standards and West Yost's experience working with the City's existing water system.

- Average Day Demand
  - Pressures should be maintained between a maximum of 100 psi[3] and a minimum of 40 psi.
  - Maximum velocity within transmission pipelines should be 3 fps.
  - Head losses within the transmission system pipelines should be limited to 3 feet per thousand feet (ft/kft) of pipeline.
- Maximum Day Demand
  - Pressures should be maintained between a maximum of 100 psi[4] and a minimum of 40 psi.
  - The maximum velocity within the transmission system pipelines should be 6 fps.
  - Head losses within the transmission system pipelines should be limited to 3 ft/kft of pipeline.
- Peak Hour Demand
  - Pressures should be maintained between a maximum of 100 psi[4] and a minimum of 40 psi.
  - The maximum velocity within the transmission system pipelines should be 6 fps
  - Head losses within the transmission system pipelines should be limited to 3 ft/kft of pipeline.

6.2.8.2 Potable Water Distribution System

Distribution pipelines are generally less than 18-inches in diameter and should be sized based on the criteria described below for average day, maximum day plus fire flow, and peak hour demand conditions. The criteria reflect industry standards and West Yost's experience working with the City's existing water system.

- Average Day Demand
  - Service pressures should be maintained between a maximum of 80 psi[4] and a minimum of 40 psi.
  - The maximum velocity within the distribution system pipelines should be 6 fps.

[3] A pressure reducing valve will be required on all water services with a static pressure greater than 80 psi.

[4] A pressure reducing valve will be required on all water services with a static pressure greater than 80 psi.

  - Head losses within the distribution system pipelines should be limited to 7 ft/kft of pipeline

- Maximum Day Demand plus Fire Flow
  - The minimum allowable residual pressure should be 20 psi at the flowing fire hydrant during the occurrence of a single fire flow event for smaller pressure zones.
  - The minimum allowable residual pressure should be 20 psi at the flowing fire hydrants during the occurrence of two simultaneous fire flow events for larger pressure zones.
  - The maximum velocity within the distribution system pipelines should be 12 fps, or the head losses within the distribution system pipelines should be limited to 10 ft/kft of pipeline, whichever criteria is more conservative given the specific hydraulic/system condition.
- Peak Hour Demand
  - Service pressures should be maintained between a maximum of 80 psi[5] and a minimum of 40 psi.
  - The maximum velocity within the distribution system pipelines should be 8 fps, or the head losses within the distribution system pipelines should be limited to 7 ft/kft of pipeline, whichever criteria is more conservative given the specific hydraulic/system condition.

A summary of the recommended potable water system performance and operational criteria is presented in Table 6-2 and reflect typical water system industry standards including the California Safe Drinking Water Act and related laws, and AWWA standards.

[5] A pressure reducing valve will be required on all water services with a static pressure greater than 80 psi.

Table 6-2. Summary of Recommended Potable Water System Performance and Operational Criteria

Component	Criteria	Remarks / Issues
Fire Flow Requirements (flow [gpm] @ duration [hours])		
Single Family Residential	1,500 gpm @ 2 hrs	Existing development will be evaluated on case-by-case basis because of the historical varying standard.
Multi Family Residential	2,500 gpm @ 2 hrs	
Commercial/Office	3,500 gpm @ 4 hrs (with approved automatic sprinkler system)	
Industrial	4,500 gpm @ 4 hrs (with approved automatic sprinkler system)	
Institutional	4,500 gpm @ 4 hrs (with approved automatic sprinkler system)	
Water System Capacity		
Maximum Day Demand plus Fire Flow	Provide firm capacity equal to maximum day demand plus fire flow	Assume two simultaneous fire flow events in larger pressure zones (i.e., Zones 1 and 2).
Peak Hour Demand	Provide firm capacity equal to peak hour demand	
Water Treatment Capacity		
Treated Water Supply Capacity	Provide capacity equal to maximum day demand	--
Treated Surface Water Supply Capacity	Provide capacity equal to maximum month demand	--
Treated Water Pumping Capacity	Provide capacity equal to maximum day demand	--
Water Storage Capacity		
Operational	30 percent of maximum day demand	
Fire	Assume one Single Family Residential fire flow concurrent with a larger Industrial fire flow in larger pressure zones (i.e., Zones 1 and 2)	1,500 gpm @ 2 hrs = 0.18 MG 2,500 gpm @ 2 hrs = 0.30 MG 3,000 gpm @ 4 hrs = 0.72 MG 4,000 gpm @ 4 hrs = 0.96 MG
Emergency	1.5 x average day demand	--
Groundwater Credit (GWC)	Equal to the firm groundwater supply that can be reliably accessed (facilities equipped with auxiliary power)	The maximum combined emergency storage credit is equal to the recommended emergency storage capacity.
Treated Surface Water Credit (TSWC)	Equal to the smaller of the available treated surface water supply sources	
Total Water Storage Capacity	Operational + Fire + Emergency - GWC - TSWC	If possible, total storage should be evaluated by pressure zone.
Pumping Facility Capacity		
Pumping Capacity	Provide the greater of maximum day with two concurrent fire flows in larger pressure zones (i.e., Zones 1 and 2) or peak hour demand within each pressure zone	Assume firm pumping capacity. Sufficient pumping capacity should also be provided so that the maximum day demand can be supplied using firm pumping capacity with no assistance from storage reservoirs.
Backup Power	Equal to the firm capacity of the pumping facility	On-site generator for critical stations.[(a)] Plug-in portable generator for less critical stations.
Water Transmission Line Sizing		
Diameter	18-inches in diameter or larger	Locate new transmission pipelines within designated utility corridors wherever possible.
Average Day Demand Condition	--	Criteria based on requirements for new development, existing transmission mains will be evaluated on case-by-case basis. Evaluation will include review of age, material type, velocity, head loss, and/or pressure.
Minimum Pressure [psi]	40 psi	
Maximum Pressure [psi]	100 psi	
Maximum Head loss [ft/kft]	3 ft/kft	
Maximum Velocity [fps]	3 fps	
Maximum Day Demand Condition	--	
Minimum Pressure [psi]	40 psi	
Maximum Head loss [ft/kft]	3 ft/kft	
Maximum Velocity [fps]	6 fps	
Peak Hour Demand Condition	--	
Minimum Pressure [psi]	40 psi	
Maximum Head loss [ft/kft]	3 ft/kft	
Maximum Velocity [fps]	6 fps	
Hazen Williams "C" Factor	130	For consistency in hydraulic modeling.
Pipeline Material	Ductile Iron	
Water Distribution Line Sizing		
Diameter	Less than 18-inches in diameter	Must verify pipeline size with maximum day plus fire flow analysis. Locate new distribution pipelines within designated utility corridors wherever possible.
Average Day Demand Condition	--	Criteria based on requirements for new development, existing distribution mains will be evaluated on case-by-case basis. Evaluation will include review of age, material type, velocity, head loss, and/or pressure.
Minimum Pressure [psi]	40 psi	
Maximum Pressure [psi]	80 psi	
Maximum Head loss [ft/kft]	7 ft/kft	
Maximum Velocity [fps]	6 fps	
Maximum Day w/ Fire Flow Demand Condition	--	
Minimum Pressure [psi]	20 psi for a single fire flow event in smaller pressure zones; 20 psi for two simultaneous fire flow events in larger pressure zones	
Maximum Head loss [ft/kft]	10 ft/kft	
Maximum Velocity [fps]	12 fps	
Peak Hour Demand Condition	--	
Minimum Pressure [psi]	40 psi	
Maximum Head loss [ft/kft]	7 ft/kft	
Maximum Velocity [fps]	8 fps	
Minimum Pipeline Diameter	--	--
General	8-inches	--
Industrial	12-inches	--
Distribution to cul-de-sac / dead-end street	6-inches	Permanent dead end runs shall be no longer that 250 feet unless in a cul-de-sac.
Distribution to fire hydrants	8-inches	--
Hazen Williams "C" Factor	130	For consistency in hydraulic modeling.
Pipeline Material	Ductile Iron	
Maximum Water Service Pressure	80 psi	Install PRV if service pressure is greater than 80 psi.

(a) A pumping facility is defined as critical if it provides service to pressure zone(s) and/or service area(s) which do not have sufficient emergency storage, and that meet the following criteria:

- The largest facility that provides water to a particular pressure zone and/or service area;
- A facility that provides the sole source of water to single or multiple pressure zones and/or service areas;
- A facility that provides water from a supply turnout; or
- A facility that provides water from key groundwater supply wells (depends on capacity, quality and location).

6.3 RECYCLED WATER SYSTEM

Components of the recommended performance and operational criteria for the City's backbone recycled water system are discussed below.

6.3.1 Recycled Water Demand Condition Evaluation

A peak hour demand condition during an 8-hour irrigation period will be used to assess the adequacy of the City's recycled water system.

6.3.2 Recycled Water Treatment Capacity

Sufficient recycled water treatment capacity should be available to meet the City's maximum day recycled water demand condition.

6.3.3 Recycled Water Storage Capacity

The total recycled water storage capacity required will be based on the following components:

- Seasonal Storage
- Operational Storage

A discussion of these two storage components follows.

6.3.3.1 Seasonal Storage

As described in Chapter 4, landscape irrigation demands are highest during the summer months (when plant evapotranspiration rates are high) and very low during the winter months. Demand for recycled water supplies to meet these seasonally varying demands will also vary month to month, depending on the specific climatic conditions that are occurring. Therefore, some seasonal storage may have to be provided to store recycled wastewater generated during low irrigation demand periods for use during the high summer demand periods. The actual quantity of seasonal storage required, if any, will be determined using an annual water balance between total recycled water supply available and the total seasonal recycled water demand.

6.3.3.2 Operational Storage

Sufficient operational storage should be provided to supply the demands of an eight-hour irrigation period during a maximum summer month demand condition, with a 10 percent demand increase occurring for one hour (i.e., peak hour) during the irrigation period. Due to concerns about water quality, it is recommended that this operational storage be entirely stored within an enclosed reservoir or tank system to limit exposure to potential contaminant sources after treatment, but before distribution and direct use.

6.3.3.3 Total Storage Capacity

The City's recommended recycled water storage capacity should be the sum of the following components:

- Seasonal: Volume of recycled water necessary to balance the required annual recycled water demands with the annual recycled water supply available.
- Operational: Volume of recycled water necessary to supply the demands of an eight-hour irrigation period during a maximum summer month demand condition, with a 10 percent demand increase occurring for one hour.

The amount of total system storage and system peaking capacity required to meet these criteria will change over time as the City continues to grow and recycled water demands increase.

6.3.4 Recycled Water Pumping Facility Capacity

Sufficient pumping capacity should be provided to meet the City's peak hour recycled water demand condition within each pressure zone and any additional pressure zone(s), which are provided service from this particular pressure zone.

6.3.5 Recycled Water Transmission Pipeline Sizing and Recommended System Pressures

Backbone recycled water system transmission pipelines are generally 16-inches in diameter or larger and should be designed based on the criteria described below for a peak hour demand condition.

- Peak Hour Demand
  - Service pressures should be maintained between a maximum of 100 psi and a minimum of 60 psi.
  - The maximum velocity within the transmission system pipelines should be 10 fps; however, a pipeline velocity of 6 fps is desirable.

A summary of the recommended recycled water system performance and operational criteria is presented in Table 6-3.

Table 6-3. Summary of Recommended Recycled Water System Performance and Operational Criteria		
Component	Criteria	Remarks / Issues
Demand Condition Evaluation		
Peak Hour Demand	Provide capacity equal to peak hour demand during an 8-hour irrigation period	--
Recycled Water Treatment Capacity		
Recycled Water Treatment Capacity	Provide capacity equal to a maximum day demand	--
Recycled Water Storage Capacity		
Seasonal	Equal to volume required to balance the annual demands with the annual supply available	--
Operational	Equal to volume required to supply the demands of an eight-hour irrigation period during a maximum summer month with a 10 percent demand increase occurring for one hour	--
Total Water Storage Capacity	Seasonal + Operational	--
Pumping Facility Capacity		
Pumping Capacity	Provide capacity equal to peak hour demand within each pressure zone	Firm pumping capacity will not be required.
Recycled Water Transmission Line Sizing		
Diameter	16-inches in diameter or larger	--
Peak Hour Demand Condition	--	--
Minimum Pressure [psi]	60 psi	--
Maximum Pressure [psi]	100 psi	--
Maximum Velocity [fps]	10 fps	Pipeline velocity of 6 fps is desirable.
Hazen Williams "C" Factor	130	For consistency in hydraulic modeling.
Pipeline Material	C-900 PVC	

CHAPTER 7
Existing Potable Water System Evaluation

7.1 OVERVIEW

The purpose of this chapter is to first describe the City's existing potable water distribution system, including the corresponding hydraulic model update. Existing water system information was updated through the review of previous reports, maps, plans, record drawings, operation records, GIS files, and other available data provided to West Yost by City staff. Using this information, the City's current hydraulic model was then updated to represent the existing potable water system.

The remainder of the chapter presents an evaluation of the City's existing potable water distribution system and its ability to meet the recommended performance and operational criteria (previously described in Chapter 6) under existing water demand conditions. The evaluation includes an analysis of water storage capacity, pumping capacity, and the existing water system's ability to meet recommended water system performance and operational criteria under peak hour demand and maximum day demand plus fire flow scenarios. This evaluation does not include a condition assessment of the City's existing water system assets and does not cover replacement of existing infrastructure due to age or physical deterioration.

Evaluations, findings, and recommendations for addressing any deficiencies identified within the existing potable water distribution system are included. Recommendations were used to develop a Capital Improvement Program (CIP), which includes an estimate of probable construction costs. The recommended existing potable water system CIP is described further in Chapter 10.

The following sections of this chapter describe the components of the City's existing potable water distribution system evaluation:

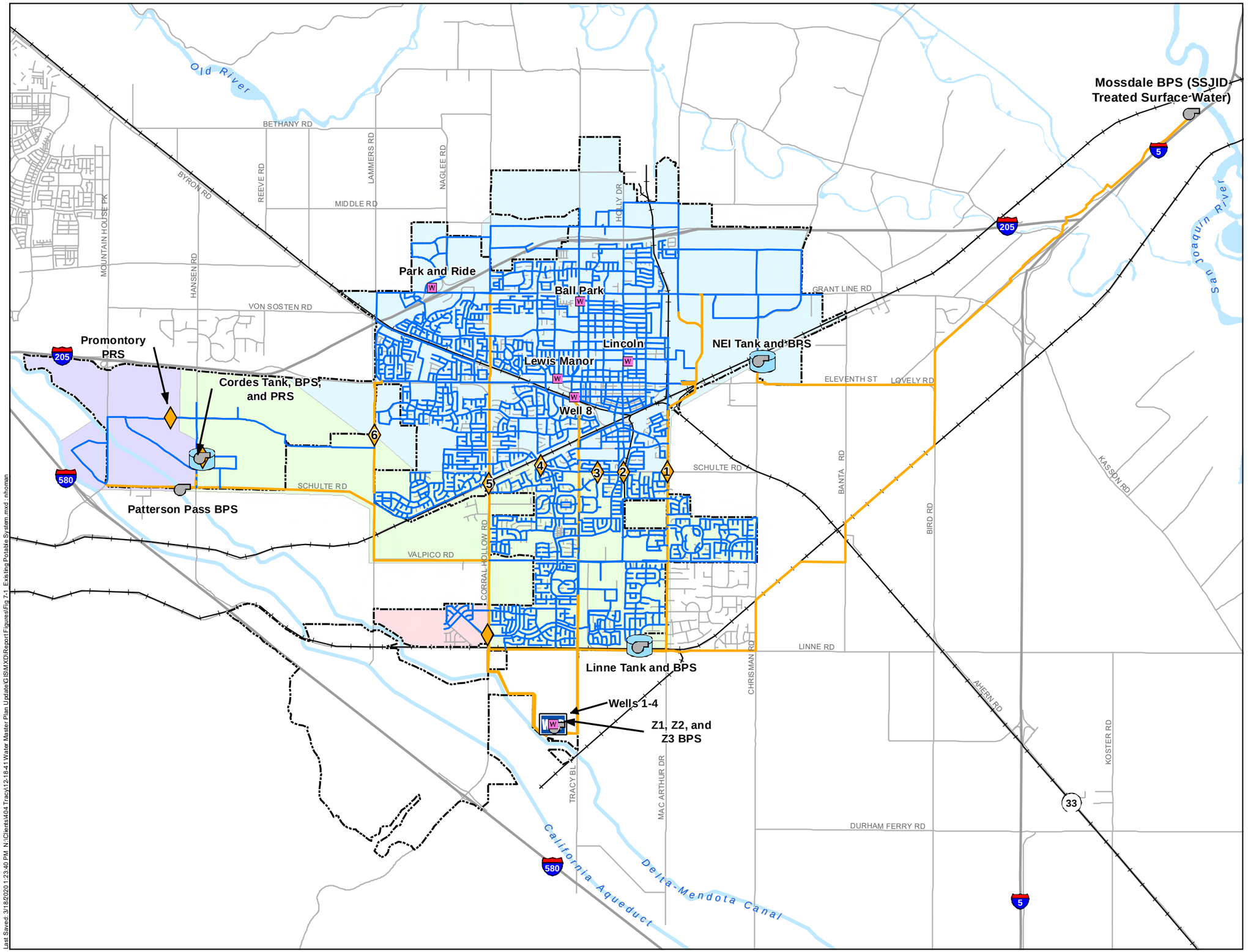
- Description of Existing Potable Water System Facilities
- Hydraulic Model Update
- Existing Potable Water System Evaluation
- Summary of Recommended Existing Potable Water System Improvements

7.2 DESCRIPTION OF EXISTING POTABLE WATER SYSTEM FACILITIES

This section provides a summary of the City's existing potable water system facilities. The City's existing potable water system facilities are located throughout the water service area as shown on Figure 7-1. Additional details regarding each facility are presented below.

7.2.1 John Jones Water Treatment Plant

The City's JJWTP is located just north of the DMC in the southern portion of the City as shown on Figure 7-1. The JJWTP was originally constructed in 1979, expanded in 1988, and then expanded again in 2008. It currently has a treatment capacity of 30 mgd.



Symbology

- Pressure Regulating Station
- Booster Pump Station
- Groundwater Well
- Storage Tank
- WTP John Jones Water Treatment Plant

Pipeline Diameter

- Less than 18-inches
- Greater than or equal to 18-inches

Pressure Zone

- Zone 1
- Zone 2
- Zone 3 (IPC/PPBP)
- Ellis Reduced Zone
- City Limits

Notes:

1. All facilities included in the existing system hydraulic model are shown. Not all existing facilities were included in the model. See Section 7.3.2 for details.
2. Pressure Zones represent the approximate boundaries after the IPC zone split is implemented.
3. The City's hydraulic model is not an all pipes model. Some pipes which are not hydraulically significant were excluded from the model.
4. Lewis Manor Well is currently inactive.

TRACY

WEST YOST ASSOCIATES

Figure 7-1

Existing Potable Water System Facilities

City of Tracy
Water System Master Plan Update

Last Saved: 3/18/2020 1:23:40 PM N:\Clients\404 Tracy\12-1841 Water Master Plan Update\GIS\MXD\Report Figures\Fig 7-1_Existing Potable System.mxd - mhoman

The most recent expansion added treatment through granulated activated carbon and ultraviolet light disinfection. Granulated activated carbon removes dissolved organic compounds contained in the water, and ultraviolet light disinfection provides an additional level of treatment. Several new process upgrades including new flocculation/sedimentation basins, washwater basins, and chemical addition facilities were also added during the expansion. The site plan, process schematic, and hydraulic profile from the JJWTP Expansion Project is provided in Appendix B.

The City operates three surface water intake pumps at the JJWTP with the capacity to pump a total of approximately 27 mgd of raw surface water from the DMC to the JJWTP for treatment. The key characteristics of the existing surface water intake pumps are summarized in Table 7-1.

Table 7-1. Existing Surface Water Intake Pumps[a]

Intake Pump Name	Year Installed	Production Capacity, mgd	Pump Type	Motor Horsepower	Motor Type
Pump No. 1	2008	14[b]	Vertical Turbine	150	VFD[c]
Pump No. 2	2008	14[b]	Vertical Turbine	150	VFD[c]
Pump No. 3	2008	14[b]	Vertical Turbine	150	VFD[c]

(a) Source: JJWTP Expansion Project, Sheet G-8 (Carollo Engineers).
(b) Intake pumps were designed for 15 mgd. However, testing of the installed pumps determined that the actual production capacity of each pump is 14 mgd. In addition, due to the hydraulics of the JJWTP intake, the maximum intake pumping capacity with all three pumps running is 27 mgd.
(c) Variable Frequency Drive.

7.2.2 South County Water Supply Project

The City, in partnership with the cities of Manteca, Lathrop and Escalon, and SSJID, constructed a new surface water treatment plant near Woodward Reservoir in Stanislaus County and new transmission pipelines to deliver treated surface water to each city. The City's treated surface water allocation from the SCWSP is 17 mgd of treatment capacity and 11,120 af/yr of water supply.

Treated surface water from the surface water treatment plant located near Woodward Reservoir is conveyed to the City through a dedicated 36-inch diameter transmission main and pumped to the City by the Mossdale Pump Station located at the intersection of Manthey and Stewart Roads (see Figure 7-1). Water pumped from the Mossdale Pump Station first fills the City's Linne and NEI storage tanks through 18-inch and 30-inch diameter transmission mains before being pumped into the City's distribution system to serve system demands. The Mossdale Pump Station is operated by SSJID.

7.2.3 Groundwater Wells

The City currently has eight groundwater production wells that provide the City's potable water system with groundwater supply. Currently, the Lewis Manor Well is inactive due to high levels of manganese. As discussed in Chapter 5, a ninth well, Well 8, was constructed in 2004 to be used for the City's ASR Program, but can also be used as an extraction well to serve water demands directly under normal and/or emergency conditions.

The groundwater wells located at the JJWTP (Wells 1-4) pump directly into the Chlorine Contact Basin or Clearwell #2, where the groundwater is blended with the finished surface water and chlorinated prior to distribution. Groundwater from the other remaining wells located in Zone 1 is chlorinated at each well site and pumped directly into the distribution system.

The locations of these existing groundwater wells are shown on Figure 7-1. Table 7-2 presents a summary of these existing groundwater well facilities with key characteristics such as design capacity and age.

Table 7-2. Existing Groundwater Wells

Well Name/Number	Well Location/Address	Year Drilled	Total Well Depth (Casing Depth), ft	Casing Diameter, inches	Depth of Perforated Zone, ft[a]	Design Capacity, gpm	Production Capacity, mgd
Well 1	JJWTP	1986	1,010 (1,000)	16"	450-550 580-980	1,500	2.2
Well 2	JJWTP	1989	990 (870)	16"	420-850	2,000	2.9
Well 3	JJWTP	1989	1,020 (900)	16"	420-890	2,000	2.9
Well 4	JJWTP	1989	1,020 (950)	16"	380-940	2,000	2.9
Lincoln Well	Lincoln Park	1990	1,000 (1,000)	16"	490-980	2,500	3.6
Well 5[b] (Lewis Manor Well) (Currently Inactive)	902 Twelfth Street (north of Eleventh Street between Tracy Boulevard and Corral Hollow Road)	2000	1,015 (1,000)	18"	410-480 601-630 650-670 805-830 900-930 965-990	2,500	3.6
Well 6 (Park& Ride Well)	2650 North Naglee Road (North of I-205 adjacent to West Valley Mall)	2001/02	1,250 (1,216)	18"	550-598 610-636 656-678 738-754 774-796 966-982 1,014-1,122 1,176-1,196	2,000	2.9
Well 7 (Ball Park Well)	2001 Bessie Avenue (east of Tracy Boulevard south of Grant Line Road)	2002	1,070 (894)	18"	550-598 570-732 850-874	2,500	3.6
Well 8[c]	Tracy Boulevard and Sixth Street	2004	850 (850)	18"	370-460 510-640 680-820	2,500	3.6

(a) Source: GEI Consultants, Summary of Groundwater Conditions November 2007 through November 2008, dated January 23, 2009.
(b) Well is currently inactive due to high manganese levels.
(c) Well 8 can be operated as an injection/extraction well as part of the City's ASR Program.

7.2.4 Water Storage Facilities

The City currently operates five treated water storage reservoirs (two clearwells and three storage tanks). Table 7-3 presents a summary of these existing storage facilities with key characteristics such as storage capacity and age. As shown, the City currently has a total potable water storage capacity of approximately 16.2 MG. However, Clearwell #1 operates as a chlorine contact basin and cannot be counted as system storage capacity. Therefore, the total available potable water storage capacity is reduced to approximately 15.5 MG. The locations of the City's three storage tanks are shown on Figure 7-1 (the two clearwells are located at the JJWTP).

Table 7-3. Existing Treated Water Storage Facilities

Storage Facility Name	Storage Type	Material	Year Constructed	Storage Capacity, MG
Clearwells				
#1[(a)]	Partially Buried Tank	--	1978	0.66
#2[(b)]	Partially Buried Tank	--	1987	4.0
Storage Tanks				
Linne	Fully Buried Tank	Concrete	2005	7.1
NEI	Partially Buried Tank	Concrete	2002	2.4
Cordes	Partially Buried Tank	Concrete	2015[(c)]	2.0
			Total Storage Capacity, MG	**16.2**
			Total Available Storage Capacity, MG	**15.5[(d)]**

(a) Clearwell #1 has a design capacity of 1.0 MG, but it has been reduced to 0.66 MG due to the weir within Clearwell #1. Also known as the Chlorine Contact Basin.
(b) Clearwell #2 has a design capacity of 5.6 MG, but it has been reduced to 4.0 MG due to the weir within Clearwell #1.
(c) Although it was constructed in 2015, the Cordes Tank was not put into service until November 2019.
(d) Does not include Clearwell #1 as it is operated as a Chlorine Contact Basin and cannot be counted as system storage capacity.

7.2.5 Booster Pump Stations

The City currently has eight booster pump stations.[1] The locations of these existing booster pump stations are shown on Figure 7-1 (Zone 1, Zone 2, and Zone 3 booster pump stations are located at the JJWTP). Table 7-4 presents a summary of the existing booster pump stations with key characteristics such as design capacity and number of booster pumps.

The booster pumps located at the JJWTP pump treated surface water supply (from USBR) stored in Clearwell #2 into the City's potable water system. The booster pumps located at the Linne and NEI storage tanks pump treated surface water supply (from SSJID) stored in their respective storage tanks into the City's potable water system. The Cordes Booster Pump Station (BPS) pumps treated surface water supply from the Cordes Tank and serves customers located in the PPBP and the IPC development.

[1] The Patterson Pass Booster Pump Station is inactive since the Cordes Booster Pump Station is now operating. The Zone 4 Booster Pump Station is operational, but is not included in the existing system evaluation because Zone 4 has just started development.

Table 7-4. Existing Booster Pump Stations

Booster Pump Station Name	Location	Year Installed	Pump 1, gpm	Pump 2, gpm	Pump 3, gpm	Pump 4, gpm	Pump 5, gpm	Pump 6, gpm	Rated Capacity[a], gpm	Firm Capacity[b], gpm	Firm Capacity[b], mgd
Zone 1[c]	JJWTP	2000	12,000	12,000					24,000	12,000	17.3
Zone 2[c]	JJWTP	1987	3,300	6,700	6,700	3,300			20,000	13,300	19.2
Zone 3	JJWTP	2018	2,600	2,600	370				5,570	2,970	4.3
Zone 4[d]	JJWTP	2018	1,225	1,225	1,225	--[e]			3,675	2,450	3.5
Linne[c]	Linne Tank	2005	4,865	4,865	4,865	4,865			19,460	14,595	21.0
NEI[c]	NEI Tank	2001	1,400	1,400	1,400	1,400			5,600	4,200	6.0
Patterson Pass[c,f]	Schulte Road, west of Hansen Road	2010	1,000	1,000	1,000	1,000			4,000	3,000	4.3
Cordes[c]	Cordes Tank	2015[g]	675	675	1,600	1,600	1,600	1,600	7,750	6,150	8.9

(a) Maximum pumping capacity of entire pump station.

(b) Assumes that the largest booster pump at the pump station is offline.

(c) Pumps are equipped with variable frequency drives.

(d) Existing potable water system infrastructure for Zone 4 is not shown on Chapter 7 figures because Zone 4 has just started development and was not included in the existing system evaluation.

(e) The City plans to add a fourth 1,225 gpm pump to the Zone 4 BPS in the future.

(f) Patterson Pass BPS is currently on standby and will eventually be decommissioned.

(g) Although it was installed in 2015, the Cordes BPS was not put into service until November 2019.

7.2.6 Pressure Regulating Stations

The City currently has ten pressure regulating stations (PRS) and two pressure reducing valves (PRV) as shown on Figure 7-1 (Zone 4 PRS and Northington Drive PRV are not shown because the areas served by these facilities have just started development). All of the PRS except the Cordes PRS and Promontory Parkway PRS are currently active. Once the IPC zone split occurs (see Section 7.2.7), these two PRS will be placed into service. The IPC zone split will permanently convert several of the existing buildings in the IPC development to be served directly from Zone 2 (these buildings are currently served by Zone 3 in the interim).

Each PRS contains a valve which is used to regulate flow into the downstream pressure zone or sustain pressure within the upstream pressure zone depending on the system pressures within each pressure zone. Each PRS can operate in two different modes:

- Pressure Sustaining Valve (PSV) – The valve will maintain a specified pressure in the upstream pressure zone. If the pressure increases above the valve's set point, the valve will open and release water into the downstream pressure zone.
- Pressure Reducing Valve (PRV) – The valve will allow flow into the downstream pressure zone if the pressure in the downstream pressure zone falls below a specified set point. When the pressure is below the valve's set point, the valve will remain open until the pressure increases.

Although the stations can operate in two different ways, most stations primarily operate in one of the two modes. The primary function of PRS #1 – #6, the Summit Drive PRS, and the Zone 4 PRS is that of a PSV, while the primary function of the Cordes PRS and the Promontory Parkway PRS will be that of a PRV. The two PRVs (Summit Drive and Northington Drive) can only operate in the pressure reducing mode. Table 7-5 presents a summary of these existing pressure regulating stations and pressure reducing valves with key characteristics such as upstream and downstream pressure zones, valve size, and pressure setting.

Table 7-5. Existing Pressure Regulating Stations and Pressure Reducing Valves

Facility Name	Upstream Pressure Zone	Downstream Pressure Zone	Valve Size, inches	Elevation, ft	Pressure Setting (upstream/ downstream), psi
Pressure Regulating Station					
#1	Zone 2	Zone 1	12	63.67	83/56
#2	Zone 2	Zone 1	8	66.57	79/53
#3	Zone 2	Zone 1	6	71.19	78/52
#4	Zone 2	Zone 1	10	64.53	80/54
#5	Zone 2	Zone 1	12	68.29	79/53
#6	Zone 2	Zone 1	12	69.0	78/54
Summit Drive	Zone 3	Zone 2	10	160.0	100/60
Cordes[(a)]	Zone 3	Zone 2	16	147.8	76/36
Promontory Parkway[(a)]	Zone 3	Zone 2	12	149.0	75.5/35.5
Zone 4[(b)]	Zone 4	Zone 3	8	204.5	105/90
Pressure Reducing Valve					
Summit Drive	Zone 3	Ellis Reduced Zone	12	160.0	--/70
Northington Drive[(c)]	Zone 3	Ellis Reduced Zone	12	164.0	--/70

(a) Cordes PRS and Promontory Parkway PRS are currently inactive. They will be placed into service when the IPC zone split occurs.
(b) Existing potable water system infrastructure for Zone 4 is not shown on Chapter 7 figures because Zone 4 has just started development and was not included in the existing system evaluation.
(c) Northington Drive PRV is not shown on Chapter 7 figures because it was not included in the existing system evaluation.

7.2.7 Pressure Zone Boundaries

The City's existing potable water system consists of four interconnected pressure zones (Zone 1, Zone 2, Zone 3, and Ellis Reduced Zone) which are isolated from each other by pressure regulating stations, pressure reducing valves, and closed system valves. Zone 3 (previously called City-Side Zone 3) is currently split into two isolated portions: one which serves the Ellis Reduced Zone, and one which serves the International Park of Commerce and the Patterson Pass Business Park (Zone 3 - IPC/PPBP). A fifth pressure zone, Zone 4 (previously called Tracy Hills Zone 3), has just started development and is therefore not included in this existing system evaluation. Note that documents produced prior to this WSMP Update refer to these pressure zones using the old nomenclature.

Zone 1 extends from the northern City limits south to Schulte Road and is the most developed of the four pressure zones. Therefore, it has more transmission pipelines to convey water throughout the zone. Zone 1 is primarily served from the 36-inch diameter transmission main in Tracy Boulevard either by gravity or via the Zone 1 BPS, and from the NEI Tank and BPS located

at the eastern edge of Zone 1. There are also two major water transmission mains located on the east and west sides of Zone 1 which help distribute water to the lower elevations of the zone: an 18-inch diameter transmission main in Corral Hollow Road and a 20-inch diameter transmission main in MacArthur Drive. During periods of peak demand or in an emergency, Zone 1 can also be served by the five groundwater wells located within Zone 1 or by Zone 2 facilities via PRS #1-#6.

Zone 2 extends from Schulte Road south to Linne Road and is mostly comprised of residential and light industrial land use. Water demands in Zone 2 are primarily served by the 24-inch diameter transmission main in Corral Hollow Road, which extends from the Zone 2 BPS at the JJWTP north and west towards Patterson Pass BPS and the IPC, and by the Linne Tank and BPS.

The Ellis Reduced Zone currently consists of the Ellis Specific Plan development located south of Valpico Road and west of Corral Hollow Road. The Ellis Reduced Zone is served by the 20-inch diameter Zone 3 transmission main in Corral Hollow Road which extends from the Zone 3 BPS at the JJWTP to the intersection of Middlefield Drive and Corral Hollow Road.

The Zone 3 - IPC/PPBP pressure zone currently includes the PPBP (*i.e.*, Safeway and Costco) and all of the existing IPC development. This zone is currently served by the Cordes BPS, which supplies water from the Cordes Tank. The Cordes Tank is filled by the Zone 2 transmission mains in Schulte Road and Hansen Road. As discussed above, although all of the IPC development is currently served by Zone 3 – IPC/PPBP, several of the existing buildings are located within the Zone 2 elevation range. The City plans to split the existing IPC water distribution system into two portions: one served by Zone 2 and one served by Zone 3 - IPC/PPBP. To accomplish this, the 16-inch diameter pipeline in Promontory Parkway between Hansen Road and Lammers Road, which is currently constructed but not active, will placed into service as a Zone 2 pipeline. The Cordes PRS and Promontory Parkway PRS (both currently inactive) will be activated to provide support to Zone 2 from Zone 3 in the event of an emergency. This IPC zone split is expected to occur in the spring or summer of 2020.

Figure 7-1 shows the approximate boundaries of each pressure zone after the IPC zone split occurs. A schematic of the City's potable water system is provided in Appendix C. Table 7-6 provides a summary of the existing pressure zone boundaries with key characteristics such as service elevations and static pressure ranges.

Table 7-6. Existing Pressure Zone Boundaries

Pressure Zone	Nominal Hydraulic Grade, ft	Nominal Range of Service Elevations, ft	Static Pressure Range, psi	Supply Sources
Zone 1	195	0 - 75	40 - 75	JJWTP via 36-inch Main, NEI Tank, Wells, and Pressure Regulating Stations
Zone 2	270	75 - 150	40 - 85[(a)]	JJWTP via Zone 2 Pumps and Linne Tank
Zone 3 - IPC/PPBP (formerly City-Side Zone 3)	368	150 - 245	55 - 95[(a)]	Cordes Tank via Zone 2
Ellis Reduced Zone	323	140 - 185	60 - 80	JJWTP via Zone 3 Pumps

(a) Per the California Plumbing Code, services which experience pressures exceeding 80 psi are required to be fitted with a pressure reducing valve.

7.2.8 Transmission and Distribution System Pipelines

Based on the City's existing hydraulic model, there are approximately 280 miles of existing pipelines in the City's water service area.[2] Pipelines in the existing potable water distribution system range from 4 to 42-inches in diameter. Pipeline materials consist mainly of asbestos cement (AC), cast iron (CI), and ductile iron (DI). The City's existing transmission and distribution system pipeline network is shown on Figure 7-1[3].

7.2.9 SCADA System

The City has a SCADA (Supervisory Control and Data Acquisition) system installed to provide for remote operation and monitoring of its facilities. Most of the major existing distribution facilities have SCADA installed except for PRS #1-#6. Well 8 has SCADA installed, but cannot be remotely operated by the SCADA system.

7.3 HYDRAULIC MODEL UPDATE

A computer simulation model (hydraulic model) transforms information about the physical system into a mathematical model that solves for various demand conditions. The hydraulic model then generates information on pressure, flow, velocity and head loss that can be used to analyze system performance and identify system deficiencies. A hydraulic model can also be used to verify the adequacy of recommended or proposed system improvements.

The City currently has a hydraulic model developed to simulate its potable water system performance. As part of this Citywide Water System Master Plan Update, an update of the current potable water system hydraulic model was performed to ensure that the hydraulic model accurately reflects the City's existing water system. This section summarizes the tasks completed to update the City's current hydraulic model of its potable water distribution system.

7.3.1 Existing Hydraulic Model Description

The City's current hydraulic model of its existing potable water system was last comprehensively updated for the 2012 Citywide Water System Master Plan. Since then, West Yost has been frequently updating the City's hydraulic model with new and proposed facilities to perform developer studies and other water system analyses requested by the City. The resulting developer hydraulic model contains existing facilities from the 2012 WSMP, existing facilities constructed since the 2012 WSMP was completed, and proposed facilities which have not yet been constructed.

For this Citywide Water System Master Plan Update, West Yost first reviewed the developer hydraulic model and coordinated with the City to determine which system facilities and pipelines

[2] The City's existing hydraulic model is not an all pipes model; therefore, the exact length of existing system pipelines is not known.

[3] Pipelines not included in the existing system evaluation are not shown on Figure 7-1. This includes all existing Zone 4 pipelines as well as some existing pipelines in the IPC and the Ellis Specific Plan developments (these pipelines are included in the future system evaluation which is described in Chapter 8).

have actually been constructed since the 2012 WSMP. Existing facilities which have been constructed since the 2012 WSMP were reviewed to ensure that they accurately represented existing conditions and were incorporated into the existing potable water system model. This task is discussed in more detail below.

7.3.2 Review of Existing Water System Facilities

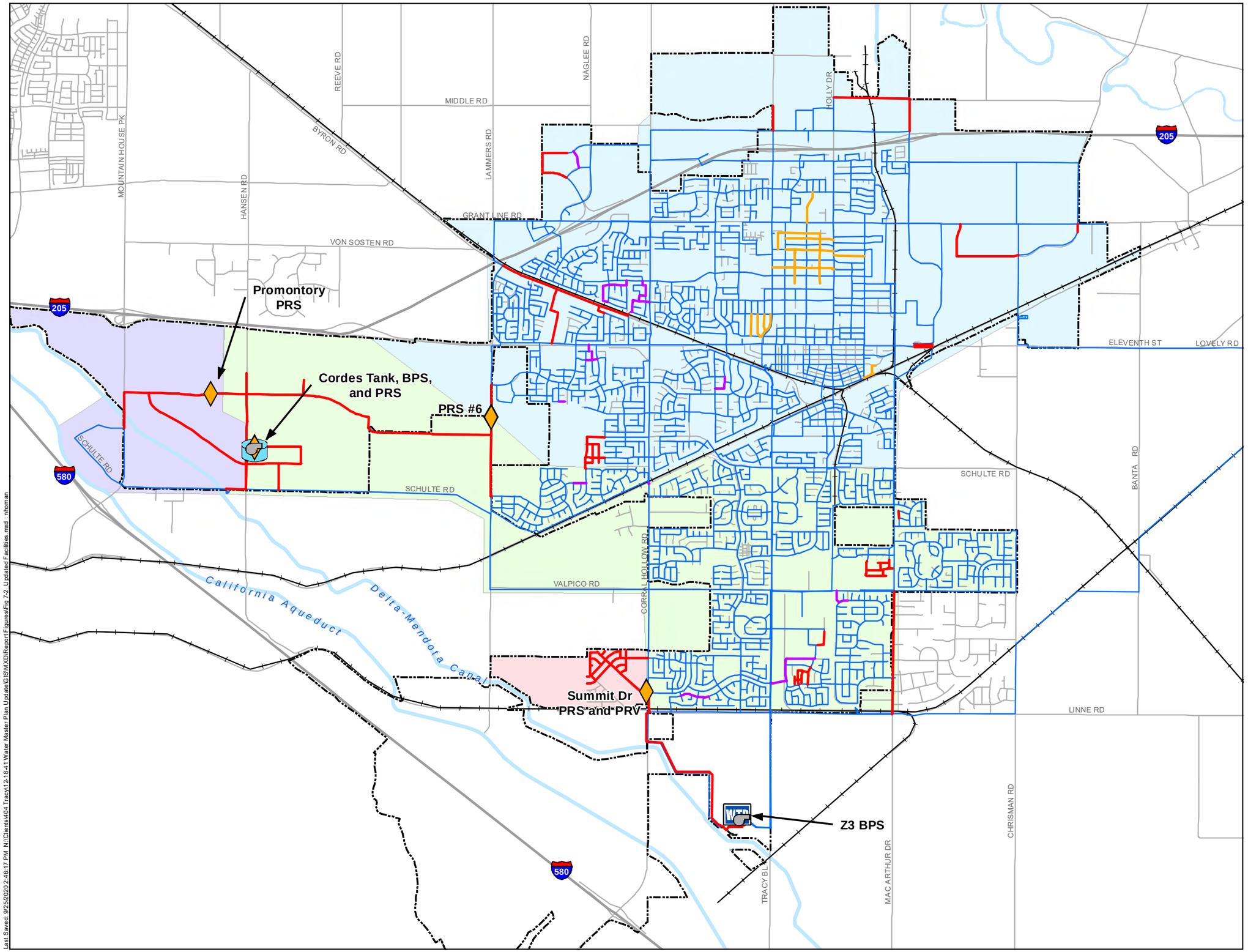
Based on a review of the available facilities data on the existing potable water system, which was provided to West Yost by City staff, the following facilities have been added or revised in the City's existing system hydraulic model since the 2012 WSMP:

- PRS #6 and major 20-inch diameter transmission main in Lammers Road
- 24-inch diameter transmission main in MacArthur Drive
- Cordes Tank, BPS, and PRS
- Major IPC development pipelines
- Promontory Parkway PRS
- Zone 3 BPS
- Zone 3 transmission main in Corral Hollow Road
- Ellis Specific Plan development pipelines
- Summit Drive PRS and PRV
- Other various new pipeline improvements
- Pipelines with incorrect diameters or alignments

As discussed below (see Section 7.4.1), potable water demands for the existing system hydraulic model were allocated based on 2017 meter data. Therefore, some facilities which serve water to areas without demands in 2017 were not included in the existing system hydraulic model (but are included in the future system hydraulic model described in Chapter 8). These facilities include:

- Zone 4 infrastructure, including the Zone 4 BPS, Zone 4 PRS, and major transmission and distribution pipelines
- Northington Drive PRV
- Some pipelines in the IPC development
- Some pipelines in the Ellis Specific Plan development

Figure 7-2 illustrates the locations of the new and revised facilities that were incorporated into the current hydraulic model to accurately represent the City's existing potable water distribution system.



Symbology

- New Pressure Regulating Station
- New Booster Pump Station
- New Storage Tank
- John Jones Water Treatment Plant
- New Pipeline Constructed Since the 2012 WSMP
- Added Pipeline (for Model Refinement)
- Updated Pipeline (for Model Refinement)
- Previously Modeled Pipeline from 2012 WSMP

Pressure Zone

- Zone 1
- Zone 2
- Zone 3 (IPC/PPBP)
- Ellis Reduced Zone
- City Limits

Notes:
1. The City's hydraulic model is not an all pipes model. Some pipes which are not hydraulically significant were excluded from the model.

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Figure 7-2

New and Revised Existing System Facilities

City of Tracy
Water System Master Plan Update

7.3.3 Review of Existing Water System Operations

The hydraulic model was last calibrated as part of the model update performed for the 2012 WSMP. Recalibration of the model was not considered necessary for this update, since the majority of pipelines added to the hydraulic model since the last update are new pipelines with known roughness factors. However, West Yost coordinated with City operations staff to confirm that the model accurately reflects existing and planned facility operations. Key changes made to facility operations since the 2012 WSMP include the following:

- In the decade after delivery of SSJID water to the City began, the City preferentially used SSJID water over USBR water to supply its customers. During these years, the JJWTP would shut down for long periods in the winter. However, in recent years the City has begun to use a more balanced mix of USBR and SSJID water.
- The Zone 1 BPS at the JJWTP has been seldom used in recent years due to decreased water demands.
- The City's wells are primarily used as backup sources of supply in the summer.
- The Lewis Manor well is inactive due to high manganese levels.
- The Cordes Tank and BPS now serve Zone 3 IPC/PPBP, and the Patterson Pass BPS (which previously served the same area) has been placed on standby.
- The Zone 3 BPS now serves the Ellis Reduced Zone.
- Booster pump station VFD settings have been adjusted since the 2012 WSMP.

Controls in the existing system hydraulic model have been updated to reflect these operational changes.

In addition, controls in the existing system hydraulic model were updated to reflect system operation changes which will occur in the next year (2020) after the planned IPC zone split is implemented. Key changes made to facility operations to reflect the IPC zone split include:

- Activating the 16-inch diameter pipeline in Promontory Parkway between Hansen Road and Lammers Road
- Activating the Cordes PRS and Promontory Parkway PRS
- Closing and opening valves to isolate Zone 2 and Zone 3 – IPC/PPBP from each other

7.4 EXISTING POTABLE WATER SYSTEM EVALUATION

This section presents the evaluation of the City's existing potable water distribution system and its ability to meet the City's recommended performance and operational criteria (previously presented in Chapter 6) under existing demand conditions. This evaluation includes an analysis of existing surface water treatment capacity, storage capacity, pumping capacity, and a hydraulic analysis of the water system's performance under maximum day demand plus fire flow and peak hour demand scenarios. Recommended improvements for addressing any identified existing potable water

distribution system deficiencies are summarized in *Section 7.5 Summary of Recommended Existing Potable Water System Improvements*.

7.4.1 Existing Potable Water Demands

The water demands in the City's water system model were previously allocated based on spatially-located 2006 meter data and scaled up using the City's 2007 water production data. For this Citywide Water System Master Plan Update, the previous water demands were updated based on spatially-located 2017 meter data. The location of allocated water meters is shown on Figure 7-3. Allocated demands located in PPBP and IPC were scaled up to the total recorded flow through the Patterson Pass BPS in 2017 to account for water loss and construction meters. Because this area of the City has been growing rapidly, recent water production data was considered the most representative of existing water use in the PPBP and IPC. Allocated demands in all other areas were scaled up to the City's average water production from 2005 through 2013. Due to the recent drought and associated conservation measures, water production data from 2014 through 2017 were considered less representative of existing water use in these areas. Table 7-7 summarizes the City's existing potable water demands by pressure zone.

Table 7-7. Existing Potable Water Demands by Pressure Zone

Pressure Zone		Average Day Demand[a]		Maximum Day Demand[b]		Peak Hour Demand[c]	
		gpm	mgd	gpm	mgd	gpm	mgd
Zone 1		7,124	10.3	12,111	17.4	20,660	29.8
Zone 2[d]		3,856	5.6	6,555	9.4	11,182	16.1
Zone 3	PPBP[e]	392	0.6	667	1.0	1,138	1.6
	IPC[f]	26	0.04	44	0.1	75	0.1
Ellis Reduced Zone		18	0.03	31	0.0	53	0.1
Total		**11,417**	**16.4**	**19,408**	**27.9**	**33,108**	**47.7**

(a) Based on spatially located 2017 water meter data. Meters located in PPBP and IPC were scaled up to represent recent (2017) data from the Safeway meter (796 af/yr). All other meters were scaled up to represent the City's average water production from 2005 - 2013 (17,620 af/yr).

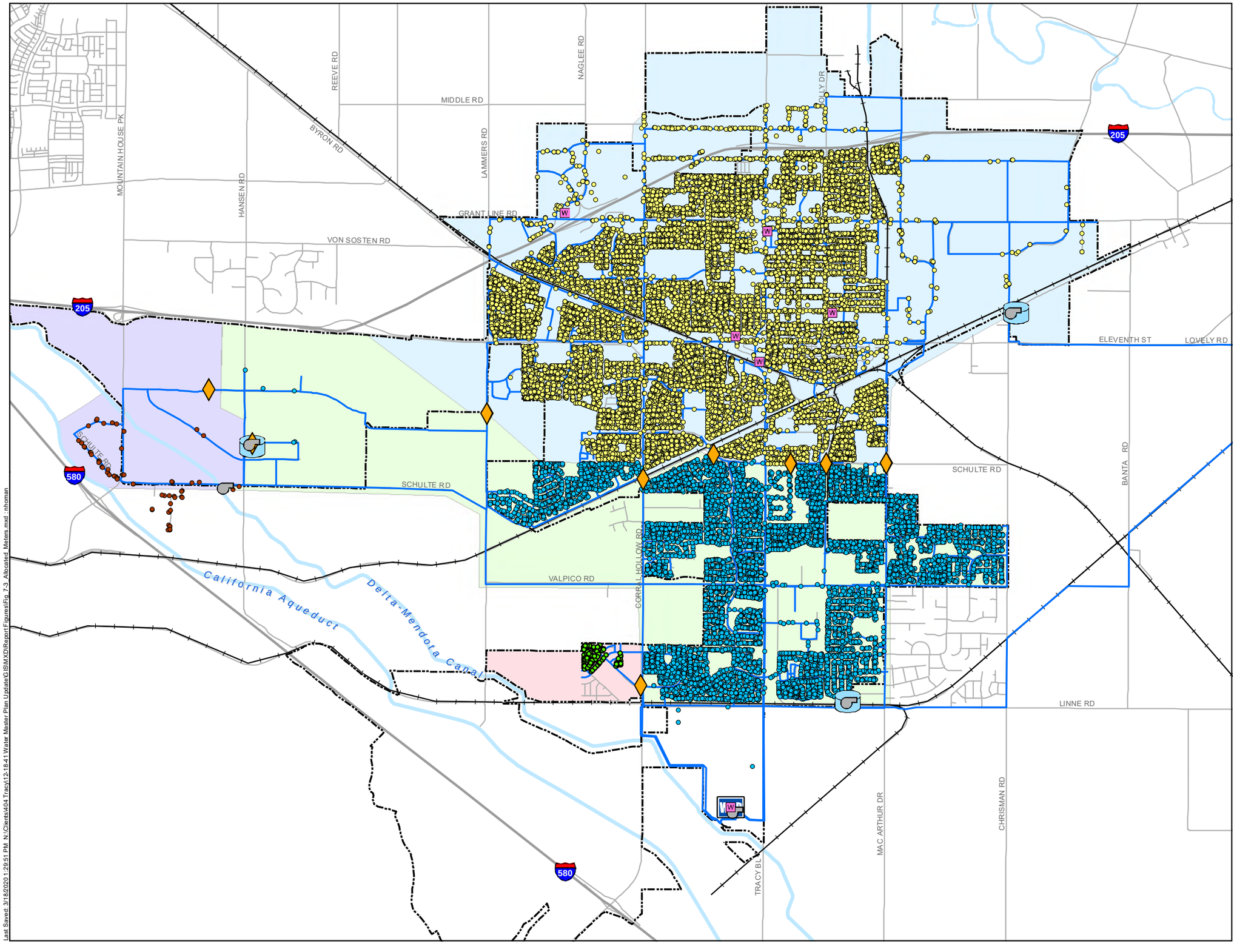
(b) Maximum day demand is 1.7 times the average day demand.

(c) Peak hour demand is 2.9 times the average day demand.

(d) Includes water demands from IPC water meters that will be served by Zone 2 after the IPC zone split (FedEx and Medline buildings).

(e) Water demands from PPBP are not included in the City's water production totals because the water supply for this area is purchased by PPBP from the Byron Bethany Irrigation District. However, the City is responsible for providing water treatment and delivery services to PPBP.

(f) Excludes water demands from IPC water meters that will be served by Zone 2 after the IPC zone split. Includes demands from Amazon, Smucker's, and Buildings 3 and 4.



Symbology

Allocated Water Meter Location

- Zone 1
- Zone 2
- Zone 3 (IPC/PPBP)
- Ellis Reduced Zone
- Pressure Regulating Station
- Booster Pump Station
- Groundwater Well
- Storage Tank
- WTP John Jones Water Treatment Plant
- Pipeline

Pressure Zone

- Zone 1
- Zone 2
- Zone 3 (IPC/PPBP)
- Ellis Reduced Zone
- City Limits

Notes:
1. Based on water meter shapefile recieved from the City on July 2, 2018.

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Figure 7-3

Allocated Water Meters

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7.4.2 Existing Water System Facilities Evaluation

To evaluate the existing potable water system, analyses addressing the following system facilities were conducted:

- Surface Water Treatment Capacity
- Storage Capacity
- Pumping Capacity
- Critical Supply Facilities

The results from the existing potable water system facilities analyses are discussed below.

7.4.2.1 Water Treatment Capacity

Sufficient water treatment capacity from the existing JJWTP, the City's treated surface water supplies from the South County Water Supply Project, and groundwater wells should be available to meet the City's existing maximum day demand condition. In addition, the City's goal is to have sufficient surface water treatment capacity to meet the existing maximum month demand without relying on groundwater. Table 7-8 indicates that the City has sufficient water treatment and capacity to meet existing maximum day demands and that the City's current surface water treatment capacity is sufficient to meet existing maximum month potable water demands.

Table 7-8. Comparison of Available and Required Water Treatment Capacity, mgd

Demand Condition	JJWTP[a]	South County Water Supply Project[b]	Groundwater	Total Treated Water Capacity	Existing Maximum Day Demand	Surface Water Capacity Surplus or (Deficit)
Maximum Day	27	17	21.7[c]	65.7	28	38
Maximum Month[d]	27	17	0.0[e]	44.0	25	19

(a) Supplied from Zone 1 36-inch diameter transmission main, Zone 2 BPS, and Zone 3 BPS. Although the JJWTP is designed to supply 30 mgd, the actual maximum pumping capacity of the intake pumps is 27 mgd.
(b) Supplied from Linne Road and NEI Booster Pump Stations.
(c) Equivalent to firm groundwater pumping capacity, assuming that 20 percent of the City's wells would be out of service (*i.e.*, approximately two wells: one in Zone 1, and one at the JJWTP).
(d) Estimated to be 90 percent of maximum day demands.
(e) The City's goal is to meet maximum month demands without relying on groundwater supply.

7.4.2.2 Storage Capacity

The principal advantages that storage provides for the water system are the ability to equalize demands on supply sources, production facilities, and transmission mains; to provide emergency storage in case of supply failure; and to provide water to fight fires. The City's water service area has two sources of available storage: above-ground storage (*i.e.*, clearwells and storage tanks) and storage available through the groundwater basin. Together, these two sources of storage must be

sufficient to meet the City's operational, emergency, and fire flow storage criteria. The volumes required for each of these three storage components are listed below:

- Operational Storage: 30 percent of a maximum day demand
- Emergency Storage: 1.5 times an average day demand
- Fire Flow Storage: The required fire flow rates multiplied by their associated fire flow duration periods, as required by the City's Fire Department. For larger pressure zones (*i.e.*, Zones 1 and 2), two concurrent fire flow events were assumed for the storage capacity analysis. However, the recommended fire flow storage does not include the volume associated with sprinkler flows.

Because the City's potable water supply includes supply from groundwater wells, the groundwater basin can account for a portion of the recommended emergency storage, in the form of a groundwater credit. However, the following criteria must be met to use the groundwater supply to offset the need to provide above-ground storage:

- Groundwater supply is of potable water quality and can be reliably accessed (*i.e.*, wells are equipped with on-site emergency generators).
- Groundwater supply is not already relied upon to meet the City's average day demand requirements.
- Groundwater supply is of firm groundwater supply availability (*i.e.*, assumes 20 percent of wells will be out of service at any given time).
- Sufficient water distribution facilities are available to distribute this water to demand area.

In addition, the City currently has two independent sources of treated surface water supply, and some quantity of the total treated surface water supply capacity can also account for a portion of the recommended emergency storage. The treated surface water credit assumes that the smaller of the treated surface water supply sources can be available to offset a portion of the emergency storage requirement. However, the following criteria must be met to use treated surface water supply to offset the need to provide above-ground storage:

- Treated surface water supply can be reliably accessed (*i.e.*, treated surface water supply facility is equipped with on-site emergency generator).
- Sufficient treated surface water booster pumping facilities are available to distribute water to demand areas.

In summary, the Emergency Storage Credit is equal to the sum of the groundwater and treated surface water supply credits. However, the Emergency Storage Credit can only provide a maximum storage credit equal to the City's required emergency storage volume.

The existing potable water storage facilities, in conjunction with the available Emergency Storage Credit, were evaluated to determine whether the City's existing potable water system has sufficient storage capacity to provide the required operational, emergency, and fire flow storage. Table 7-9 provides a detailed summary of the City's existing available potable water storage capacity, Emergency Storage Credit, and required storage capacity. Table 7-9 indicates that the City currently has a potable water storage capacity surplus of approximately 4.2 MG in Zone 1, Zone 2, and Ellis Reduced Zone, and a 0.7 MG surplus in Zone 3 - IPC/PPBP.

7.4.2.3 Pumping Capacity

The pumping capacity in the City's existing potable water system was evaluated to assess its ability to deliver a reliable firm capacity to the existing water service area. Firm capacity assumes a reduction in total pumping capacity to account for pumps that are out of service at any given time due to mechanical breakdowns, maintenance, water quality, or other operational issues. At each booster pump station, firm booster pumping capacity was defined as the total booster pump station capacity with the largest pump out of service. For groundwater well pumps, the firm groundwater pumping capacity assumed that 20 percent of the wells would be out of service at any given time.

The pumping capacity criterion for the City, described previously in Chapter 6, requires the City's potable water system to have sufficient firm pumping capacity to meet the greater of either a maximum day demand with two simultaneous fire flow events (one fire flow event in smaller pressure zones) or a peak hour demand. In addition, sufficient firm treated water pumping capacity should be available to meet a maximum day demand condition.

Table 7-10 provides a detailed summary of the City's existing available firm pumping capacity at each pump station and provides a comparison between the City's available firm pumping capacity and the requirements stated above. This pumping capacity analysis indicates that the City's existing booster and groundwater pumping capacity can sufficiently meet the pumping capacity criterion for the existing water service area during the governing flow scenario in each pressure zone.

7.4.2.4 Critical Supply Facilities

All critical pumping facilities should be equipped with an on-site, emergency backup power generator to provide pumping capacity during a power outage. Critical pumping facilities are defined as those facilities that provide service to pressure zone(s) and/or service area(s) which do not have sufficient emergency storage, and that meet at least one of the following criteria:

- The largest pumping facility that provides water to a particular pressure zone and/or service area.
- A facility that provides the sole source of water to single or multiple pressure zones and/or service areas.
- A pumping facility that provides water from a supply turnout.
- A pumping facility that provides water from key groundwater supply wells (depends on capacity, quality, and location).

Table 7-9. Comparison of Available and Required Water Storage Capacity

Station	Status	Available Storage Capacity, MG					Required Storage Capacity, MG				Storage Surplus (Deficit), MG
		Reservoir Capacity	Emergency Storage Credit			Total Available Storage	Operational[d]	Emergency[e]	Fire Flow	Total Required Storage	
			Groundwater Credit[a]	Treated Surface Water Supply Credit[b]	Total Emergency Storage Credit[c]						
Zone 1, Zone 2, and Ellis Reduced Zone[f]											
NEI	Active	2.4	--	25.50	23.76	**37.26**	8.08	23.76	1.14[i]	**32.97**	**4.2**
Lincoln Well	Active	--	5.40								
Lewis Manor Well	Inactive	--	--								
Park and Ride Well	Active	--	4.32								
Ball Park Well	Active	--	5.40								
Well 8[g]	Active	--	--								
Linne	Active	7.1	--								
Well 1[h]	Active	--	--								
Well 2[g,h]	Active	--	--								
Well 3[g,h]	Active	--	--								
Well 4[g,h]	Active	--	--								
Clearwell #2	Active	4.0	--								
Zone 3 IPC/PPBP											
Cordes	Active	2.0	--	0.00	0.90[j]	**2.90**	0.31	0.90	0.96[k]	**2.17**	**0.7**

(a) Credit based on 1.5 days of pumping capacity from active groundwater wells with on-site backup power because the required emergency storage capacity is equal to 1.5 times the average day demand. See Table 7-2 for individual well capacity.

(b) Credit based on 1.5 days of available treatment capacity (17 mgd) from the SCWSP because the required emergency storage capacity is equal to 1.5 times the average day demand.

(c) Equal to the sum of the groundwater and treated surface water supply credits; however, the maximum credit is equal to the required emergency storage capacity.

(d) Based on 30 percent of a maximum day demand (see Table 7-7).

(e) Based on 1.5 times the average day demand (see Table 7-7).

(f) The Ellis Reduced Zone is currently isolated from the Cordes Tank and BPS.

(g) Well does not contribute to Groundwater Credit because it does not have on-site backup power.

(h) Well does not contribute to Groundwater Credit because water produced by the well must be blended with chlorinated water from the JJWTP prior to distribution. The JJWTP is assumed to be offline in an emergency.

(i) Based on storage required for two concurrent fire flow events; a Single Family Residential fire flow and an Industrial fire flow (see Table 6-1).

(j) Surplus Treated Surface Water Supply Credit from other pressure zones can be used to provide emergency storage for Zone 3.

(k) Based on storage required for an Industrial fire flow (see Table 6-1).

Table 7-10. Comparison of Available and Required Firm Pumping Capacity

Pump Station	Backup Power	Status	Firm Capacity[a], gpm	Total Firm Pumping Capacity from Supply Sources, gpm[b]	Existing Maximum Day Demand, gpm	Pumping Capacity from Supply Sources Surplus (Deficit), gpm[b]	Total Firm Pumping Capacity, gpm	Existing Maximum Day Demand with Fire Flow Event(s), gpm	Existing Peak Hour Demand, gpm	Pumping Capacity Surplus (Deficit), gpm[b]
Zones 1 and 2										
NEI	✓	Active	4,200	44,106	19,377[d]	24,728	51,095	24,666[e]	31,842	19,253
Zone 1	✓	Active	12,000							
Lincoln Well	✓	Active	2,500							
Lewis Manor Well	✓	Inactive	--							
Park and Ride Well	✓	Active	2,000							
Ball Park Well	✓	Active	2,500							
Well 8		Active	--							
Linne	✓	Active	14,595							
Zone 2	✓	Active	13,300							
Well 1[c]	✓	Active	--							
Well 2[c]		Active	--							
Well 3[c]		Active	--							
Well 4[c]		Active	--							
Zone 3 IPC/PPBP										
Cordes	✓	Active	6,150	NA[g]	NA[g]	NA[g]	6,150	5,211[h]	1,213	939
Patterson Pass[f]	✓	Inactive	--							
Ellis Reduced Zone										
Zone 3	✓	Active	2,970	2,970	31	2,939	2,970	1,531[i]	53	1,439

(a) Firm booster pumping capacity was defined as the total booster pump station capacity with the largest pump out of service and firm groundwater pumping capacity assumed that 20 percent of the City's wells would be out of service (i.e., approximately two wells: one in Zone 1, and one at the JJWTP).

(b) Pumping capacity surplus (deficit) is the total available firm pumping capacity minus the greater of the maximum day demand with required fire flow event(s) or peak hour demand.

(c) Wells 1-4 located at JJWTP pump directly into the Chlorine Contact Basin or Clearwell #2; therefore, these wells do not provide additional pumping capacity to the system.

(d) Includes maximum day demand for Zone 3 IPC/PPBP.

(e) Maximum day demand plus a 1,500 gpm Single Family Residential fire flow and a simultaneous 4,500 gpm Industrial fire flow.

(f) Patterson Pass BPS is inactive since the Cordes BPS is now operating; therefore, it does not provide additional pumping capacity to the system.

(g) Zone 3 IPC/PPBP is supplied treated water via Zone 2 facilities.

(h) Maximum day demand plus a 4,500 gpm Industrial fire flow.

(i) Maximum day demand plus a 1,500 gpm Single Family Residential fire flow.

As shown previously in Table 7-10, most of the City's existing pumping facilities have on-site emergency backup power installed, except for Wells 2 through 4 and Well 8[4]. However, these wells do not meet the criteria listed above and are not considered critical supply facilities. Therefore, the City is currently equipped with sufficient backup power generators to provide pumping capacity during a power outage at its most critical pumping facilities.

7.4.3 Existing Water System Hydraulic Analysis

The system performance criteria recommended for and results of the existing potable water distribution system hydraulic analysis are discussed below.

7.4.3.1 Existing Water System Performance Criteria

Steady state hydraulic analyses using the updated hydraulic model were conducted to help identify areas of the existing potable water system that do not meet the recommended system performance criteria as presented previously in Chapter 6. The results of the existing potable water system evaluation are presented below for the following scenarios:

- Peak Hour Demand—A peak hour flow condition was simulated for the existing water distribution facilities to evaluate their capability to meet a peak hour demand scenario. Peak hour demands are met by the combined supply from treated surface water, storage tanks, and groundwater.
- Maximum Day Demand plus Fire Flow—To evaluate the existing potable water system under the maximum day demand plus fire flow scenario, individual fire flow demands were first assigned and simulated at various locations within the City's water service area. InfoWater's "*Available Fire Flow Analysis*" tool was used to determine the available fire flow while meeting the maximum day demand plus fire flow performance criteria. Additional fire flow simulations were also performed to simulate a condition equal to a maximum day demand with two concurrent fire flow events. Maximum day plus fire flow demands are met by the combined supply from treated surface water and storage tanks.

The recommended system performance criteria for each scenario are discussed in more detail below.

7.4.3.1.1 Peak Hour Demand Scenario

As shown in Table 7-7, the peak hour demand for the existing water service area was calculated to be 33,108 gpm (47.7 mgd). This peak hour demand represents a peaking factor of 2.9 times the average day demand. During a peak hour demand scenario, a minimum pressure of 40 psi must be maintained throughout the water system. In addition, maximum head losses for distribution mains should not exceed 7 ft/kft and maximum velocities should not exceed 8 fps. For transmission mains, maximum head losses should not exceed 3 ft/kft and maximum velocities should not exceed 6 fps.

[4] Well 8 currently has a plug-in adapter installed to allow interconnection to a portable generator.

7.4.3.1.2 Maximum Day Demand plus Fire Flow Scenario

As shown in Table 7-7, the maximum day demand for the existing water service area was calculated to be 19,408 gpm (32.9 mgd). This maximum day demand represents a peaking factor of 1.7 times the average day demand. Fire flow demands were assigned and simulated at various locations within the City's water service area to determine if the minimum residual pressure criterion of 20 psi could be met during a maximum day demand plus fire flow scenario[5]. Fire flow demands were assigned based on General Plan land use designations and are summarized below in Table 7-11.

Table 7-11. Recommended Fire Flow Requirements[(a)]

Land Use Category	Fire Flow, gpm	Duration, hours
Single Family Residential[(b)]	1,500	2
Multi-Family Residential[(c)]	2,500	2
Commercial/Office[(d)]	3,500[(f)]	4
Industrial	4,500[(f)]	4
Institutional[(e)]	4,500[(f)]	4

(a) Specific fire flow requirements were determined from Table B105.1 of the 2016 CFC and depend on construction type and fire flow calculation area. Non-residential fire flow requirements are based on the assumption that an automatic sprinkler system has been installed. See Table 6-1 for further explanation of how the fire flow requirements were developed.
(b) Includes Very Low and Low Density Residential land uses.
(c) Includes Medium and High Density Residential land uses.
(d) Includes Commercial, Office, Downtown, and Village Center land uses.
(e) Includes Medical, Public Facilities, School, Airport, Church, and Cemetery land uses.
(f) Fire flow includes a 500 gpm demand for on-site sprinkler flow, which is not included in the recommended fire flow storage volume.

The City's water system should also have the capability to meet a system demand condition equal to the occurrence of a maximum day demand with two concurrent fire flow events in the larger pressure zones (*i.e.*, Zones 1 and 2). It is assumed that the two fire flow events will consist of one smaller single family residential fire flow combined with another larger industrial fire flow. This conservative assumption of two simultaneous fire flow demands will help stress the City's water system and determine if the existing water system can provide reliable service during high demand conditions. Consequently, two concurrent fire flow demands were simulated at various locations within Zones 1 and 2 during a maximum day demand condition to determine if the minimum residual pressure criterion of 20 psi could be met during simultaneous fire flow events.

[5] The maximum pipeline head loss and maximum pipeline velocity criteria for a maximum day demand plus fire flow scenario were not applied to the City's existing water system. Because fire flow conditions occur infrequently, no improvements for the existing water system would be recommended if a location failed to meet these secondary criteria if the primary pressure criterion was met.

7.4.3.2 Recommended Improvement Criteria

The system performance criteria described above were used to evaluate the existing potable water system during peak hour demand and maximum day demand plus fire flow scenarios. The existing potable water system is expected to deliver peak hour flow and maximum day demand plus fire flow within the acceptable pressure, velocity and head loss ranges as identified in the system performance criteria presented in Chapter 6. However, the system was evaluated using pressure as the primary criterion. If necessary, recommended improvements needed to comply with the system performance criteria were added to the existing potable water system model to fix any deficiencies found and are discussed below.

7.4.3.3 Existing Water System Evaluation Results

The results from the hydraulic model for the peak hour demand and maximum day demand plus fire flow analyses are presented below.

7.4.3.3.1 Peak Hour Demand Scenario

During a peak hour demand scenario, results indicate that the existing potable water system is capable of maintaining the City's minimum pressure criterion of 40 psi at all existing service locations, as shown on Figure 7-4. Under this scenario, system pressures at existing service locations ranged from 40 to 85 psi. It should be noted that, per the California Plumbing Code, services which experience pressures exceeding 80 psi are required to be fitted with a pressure reducing valve.

As shown on Figure 7-5, there are two locations within the existing system where the distribution system pipelines did not meet the maximum velocity criterion of 8 fps during a peak hour demand scenario. The following list details pipelines in the existing potable water system that exceeded the maximum velocity criterion and summarizes any recommended improvements.

- Location #1: The 12-inch diameter discharge pipeline from the Ball Park Well off of Tracy Boulevard had a velocity of 8.3 fps.

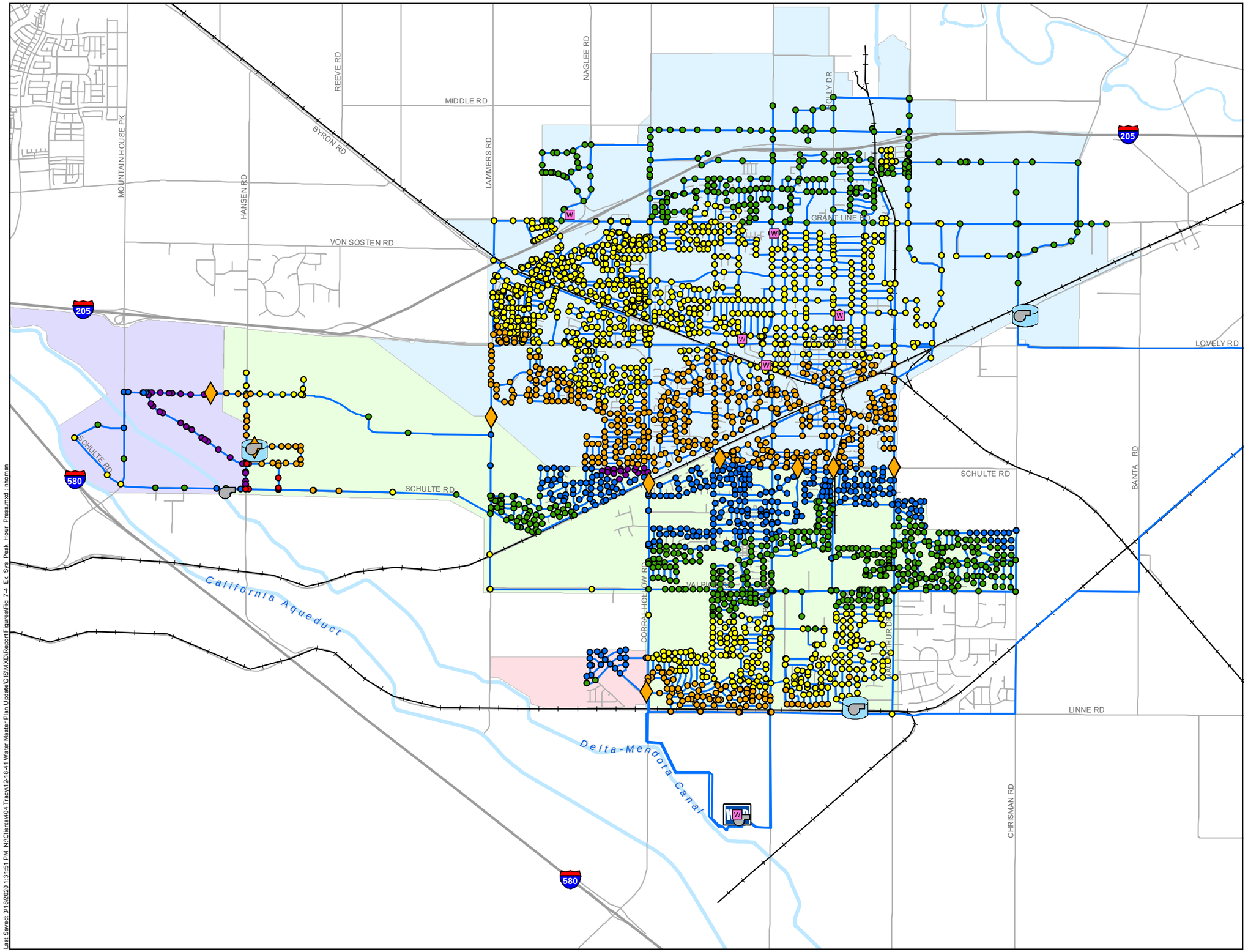
  Recommendation:

  No mitigation is recommended for the 12-inch diameter discharge pipeline from the Ball Park Well, because pipeline velocity is a secondary criterion and no improvements for pipelines exceeding the velocity criterion in the existing potable water system are recommended unless the primary criterion (pressure) is not met.

- Location #2: The 12-inch diameter distribution pipeline located in Sixth Street immediately east of the 36-inch diameter transmission main tie-in had a velocity of 8.3 fps.

  Recommendation:

  No mitigation is recommended for the 12-inch diameter discharge pipeline in Sixth Street immediately east of the 36-inch diameter transmission main tie-in, because pipeline velocity is a secondary criterion and no improvements for pipelines exceeding the velocity criterion in the existing potable water system are recommended unless the primary criterion (pressure) is not met.



Notes:
1. The City's existing hydraulic model is not an all pipes model. Therefore, not all existing pipes are shown or evaluated.
2. Per the California Plumbing Code, services which experience pressures exceeding 80 psi are required to be fitted with a pressure reducing valve.

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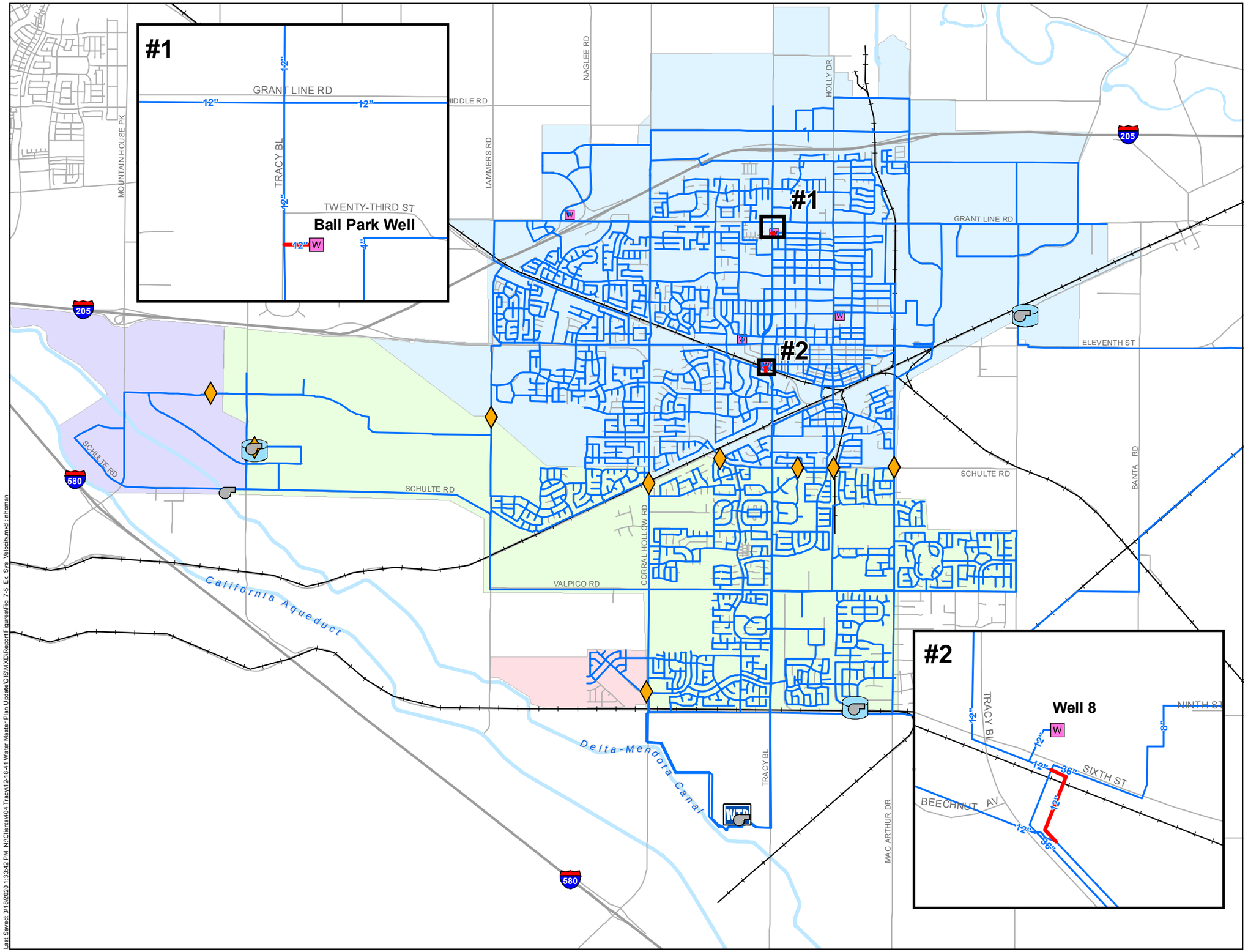
TRACY

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Figure 7-4

Existing System Pressures Peak Hour Demand

City of Tracy
Water System Master Plan Update



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Scale in Feet

Symbology

Pipeline Diameter ≥ 18-inches

- Velocity ≤ 6 fps
- Velocity > 6 fps

Pipeline Diameter < 18-inches

- Velocity ≤ 8 fps
- Velocity > 8 fps
- Pressure Regulating Station
- Booster Pump Station
- Groundwater Well
- Storage Tank
- WTP John Jones Water Treatment Plant

Pressure Zone

- Zone 1
- Zone 2
- Zone 3 (IPC/PPBP)
- Ellis Reduced Zone

Notes:

1. The City's existing hydraulic model is not an all pipes model. Therefore, not all existing pipes are shown or evaluated.

TRACY

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Figure 7-5

Existing Pipeline Velocities Peak Hour Demand

City of Tracy
Water System Master Plan Update

7.4.3.3.2 Maximum Day Demand plus Fire Flow Scenario

Fire flow demands were assigned based on Table 7-11 and simulated at various locations within the City's water service area. InfoWater's "*Available Fire Flow Analysis*" tool was used to determine the available fire flow while meeting a minimum residual pressure of 20 psi within the existing water system during a maximum day demand scenario.

As shown on Figure 7-6, the results from the hydraulic model indicate that there are seven fire flow junctions, grouped into four areas, where the available fire flow is less than the minimum required fire flow. The following list details the areas in the existing potable water system that failed to meet the fire flow requirements and summarizes any recommended improvements.

- Location #1: The hydrant at the southern end of Rhonda Way is surrounded by industrial land use, which has a fire flow requirement of 4,500 gpm. This hydrant is served by an 8-inch diameter distribution pipeline in Rhonda Way which terminates at the hydrant. The available fire flow simulated at this hydrant while maintaining a 20 psi minimum residual pressure was approximately 3,640 gpm.

  Recommendation:

  No mitigation is recommended for the hydrant at the southern end of Rhonda Way because the deficient hydrant is located on a short dead-end line. The deficient hydrant is less than 300 ft away from a hydrant at the intersection of Rhonda Way and Larch Road which is capable of providing 4,500 gpm at 20 psi residual pressure.

- Location #2: Four hydrants within the neighborhood located east of Tracy Boulevard, south of Juanita Market, west of Holly Drive, and north of Carlton Way are not capable of meeting minimum fire flow requirements. This neighborhood is located in an older part of the City, and many of the distribution pipelines in the neighborhood are 4-inches or 6-inches in diameter with low C-factors. The northern-most deficient hydrant, at the intersection of Wall Street and 20th Street, was assigned a fire flow requirement of 1,500 gpm, but could only provide approximately 1,230 gpm. The other three deficient hydrants, located at the intersections of Wall Street and Emerson Avenue, Emerson Avenue and Court Drive, and Court Drive and Lowell Avenue, were assigned a fire flow requirement of 2,500 gpm, but could only provide approximately 820 gpm, 1,590 gpm, and 2,350 gpm, respectively.

  Recommendation:

  It is recommended that the existing pipelines in 20th Street between Bessie Avenue and Parker Avenue, Wall Street between Lowell Avenue and 20th Street, Emerson Avenue between Bessie Avenue and Holly Drive, Court Drive between Whittier Avenue and Lowell Avenue, and Lowell Avenue between Parker Avenue and Holly Drive be replaced with new 8-inch diameter pipelines to improve fire flow to this area.

- Location #3: The hydrant at the intersection of School Street and Ninth Street was assigned a fire flow requirement of 2,500 gpm due to the high density residential units located along School Street. This hydrant is currently served by an 8-inch diameter distribution pipeline in School Street which terminates east of the hydrant. The available fire flow simulated at this hydrant while maintaining a 20 psi minimum residual pressure was approximately 2,330 gpm.

  Recommendation:

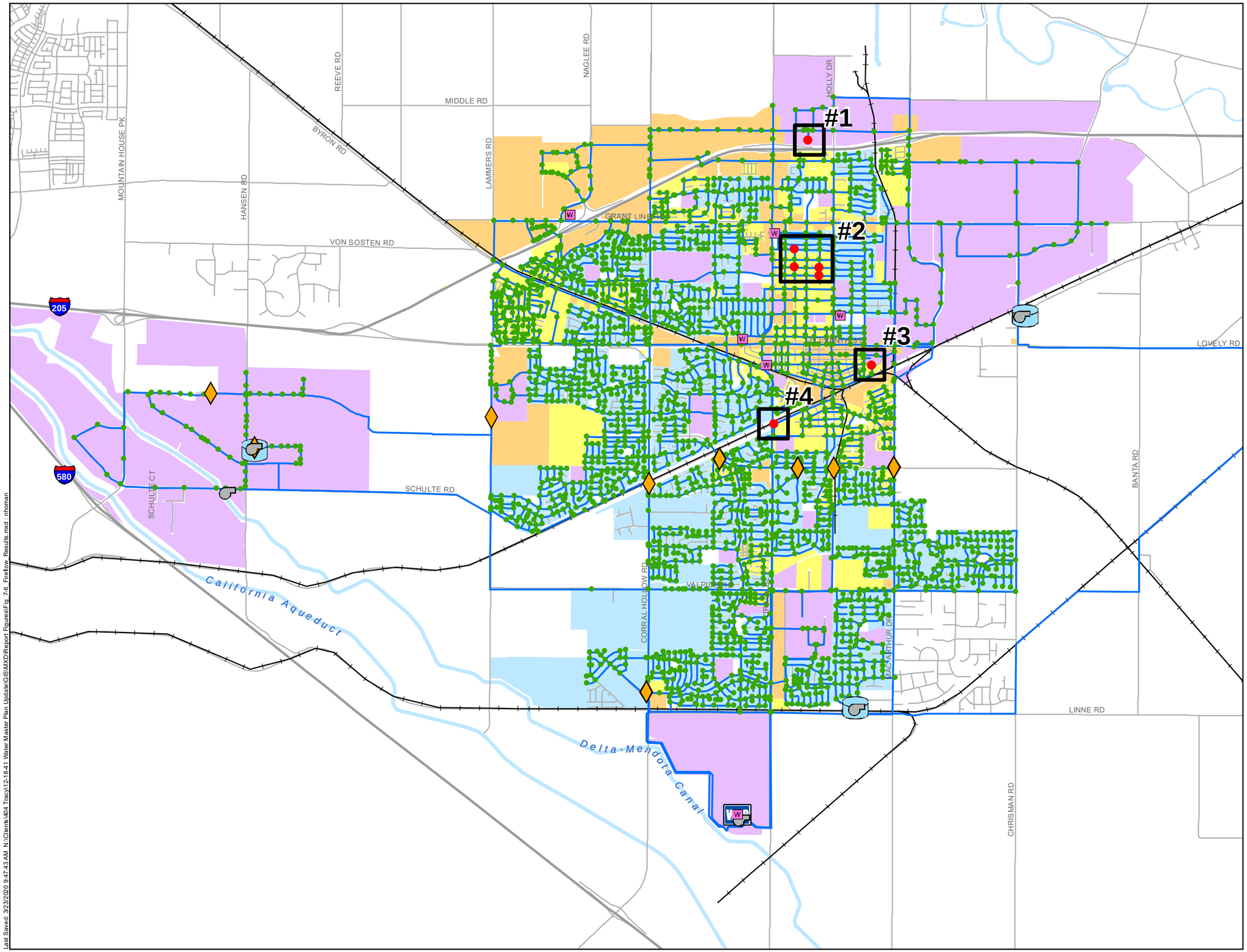
  It is recommended that a new 12-inch diameter pipeline be installed in Ninth Street between School Street and Tenth Street.

- Location #4: The hydrant at the intersection of Tracy Boulevard and Fourth Street was assigned a fire flow requirement of 2,500 gpm due to the medium density residential units located in the vicinity. This hydrant is served by an existing 4-inch diameter pipeline in Tracy Boulevard and an existing 6-inch diameter pipeline in Fourth Street. The available fire flow simulated at this hydrant while maintaining a 20 psi minimum residual pressure was approximately 1,350 gpm.

  Recommendation:

  It is recommended that the existing 4-inch diameter pipeline in Tracy Boulevard north of Mount Diablo Avenue be replaced with a new 12-inch diameter pipeline to improve the fire flow to this area. This improvement was previously recommended in the 2012 WSMP.

Four additional fire flow simulations were performed within the hydraulic model to simulate a condition equal to a maximum day demand with two concurrent fire flow events. Two concurrent fire flow events were simulated during a maximum day demand condition to determine if the minimum residual pressure criterion of 20 psi could be met. Figure 7-7 shows the locations of the additional fire flow simulations. Locations were selected within each pressure zone based on the existing land use designations and spatial distance from supply sources to stress the City's water system. As summarized in Table 7-12, results from the hydraulic model indicate that all four of the concurrent fire flow simulations met the minimum residual pressure criterion of 20 psi.



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Scale in Feet

Symbology

Available Fire Flow

- Does Not Meet Requirement
- Meets Requirement
- Pressure Regulating Station
- Booster Pump Station
- Groundwater Well
- Storage Tank
- WTP John Jones Water Treatment Plant
- Pipeline

Fire Flow Requirement

- 1,500 gpm
- 2,500 gpm
- 3,500 gpm
- 4,500 gpm

Notes:

1. The available fire flow shown is the maximum flow available while maintaining 20 psi residual system pressure.
2. The City's existing hydraulic model is not an all pipes model. Therefore, not all existing pipes are shown or evaluated.

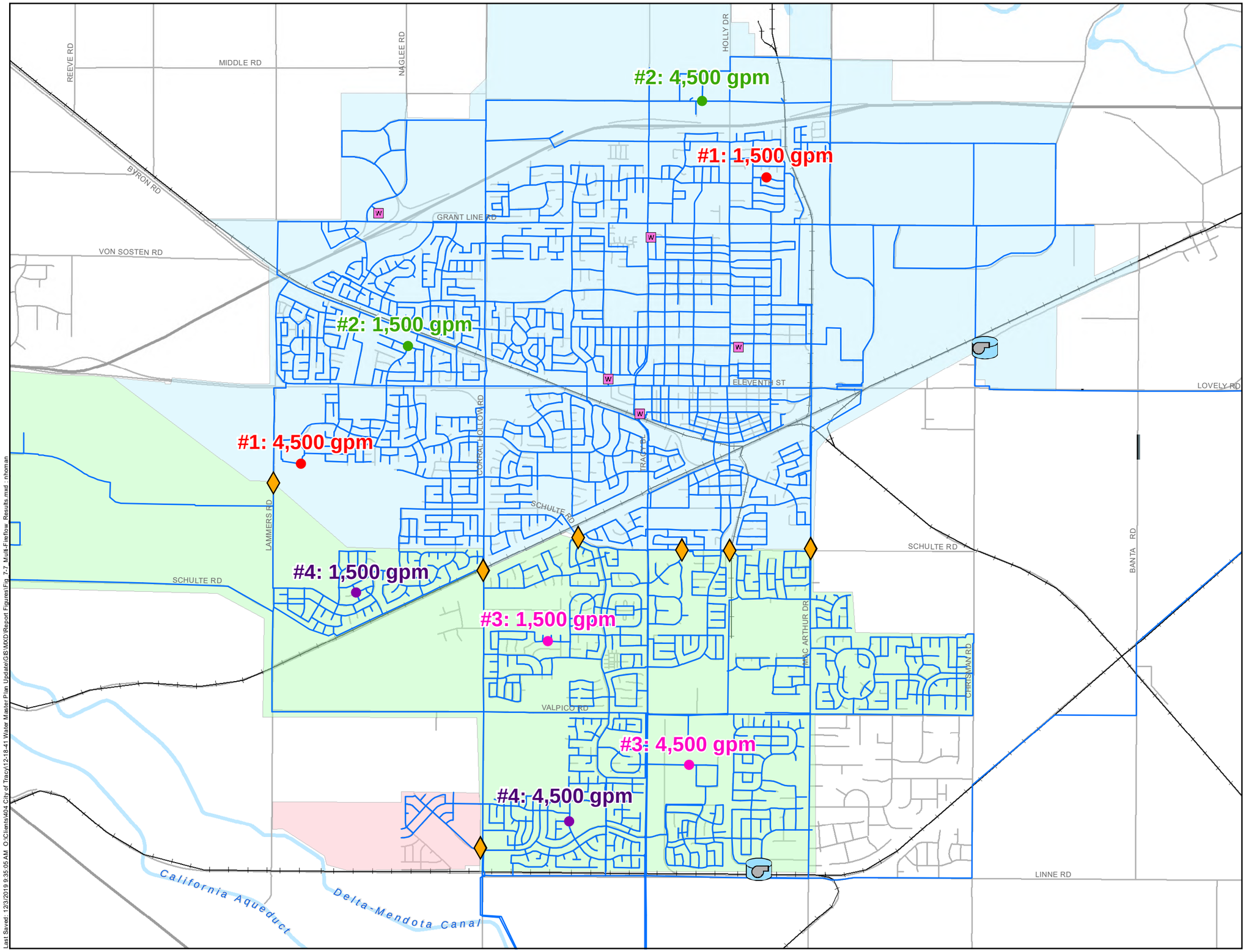
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Figure 7-6

Existing System Available Fire Flow

City of Tracy
Water System Master Plan Update



Notes:
1. The City's existing hydraulic model is not an all pipes model. Therefore, not all existing pipes are shown or evaluated.

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Figure 7-7

Locations of Additional Simultaneous Fire Flow Simulations

City of Tracy
Water System Master Plan Update

Table 7-12. Results of Additional Fire Flow Simulations

Pressure Zone	Location #	Fire Flow Demand, gpm[(a)]	Residual Pressure, psi
Zone 1	1	1,500	51
		4,500	32
	2	1,500	52
		4,500	45
Zone 2	3	1,500	67
		4,500	52
	4	1,500	67
		4,500	32

(a) It is assumed that the two concurrent fire flow events will consist of one smaller Single Family Residential fire flow combined with another larger Industrial fire flow.

7.5 SUMMARY OF RECOMMENDED EXISTING POTABLE WATER SYSTEM IMPROVEMENTS

The recommended hydraulic improvements for the existing potable water distribution system are summarized below. These existing system improvements are recommended based on existing water demands, and are not triggered by future new development. It should be noted that these recommendations only identify facility improvements at a master plan level and do not necessarily include all required on-site infrastructure nor constitute design of improvements. Subsequent detailed design is required to determine the exact sizes and final locations of these proposed improvements. Recommended improvements are based on available information on the City's existing water system and existing water demands as presented in Table 7-7.

It should also be noted that the existing hydraulic model is not an "all pipes" model (*i.e.*, not all smaller diameter pipelines are included); therefore, the hydraulic simulations performed as discussed above may not identify all necessary water system hydraulic improvements. While some small diameter pipelines which were not previously included in the hydraulic model were added in this Citywide Water System Master Plan as part of the model refinement process, there may still be other small diameter pipelines not represented in the hydraulic model. Consequently, it is recommended that City staff review older parts of the water system where smaller diameter pipelines are typically found and consider possible upsizing of these lines as the City plans for future pipeline renewal and replacement projects. Ongoing replacement of older and/or smaller diameter pipelines will improve the available fire flow capacity of the existing potable water system.

Pipeline Hydraulic Capacity Improvements

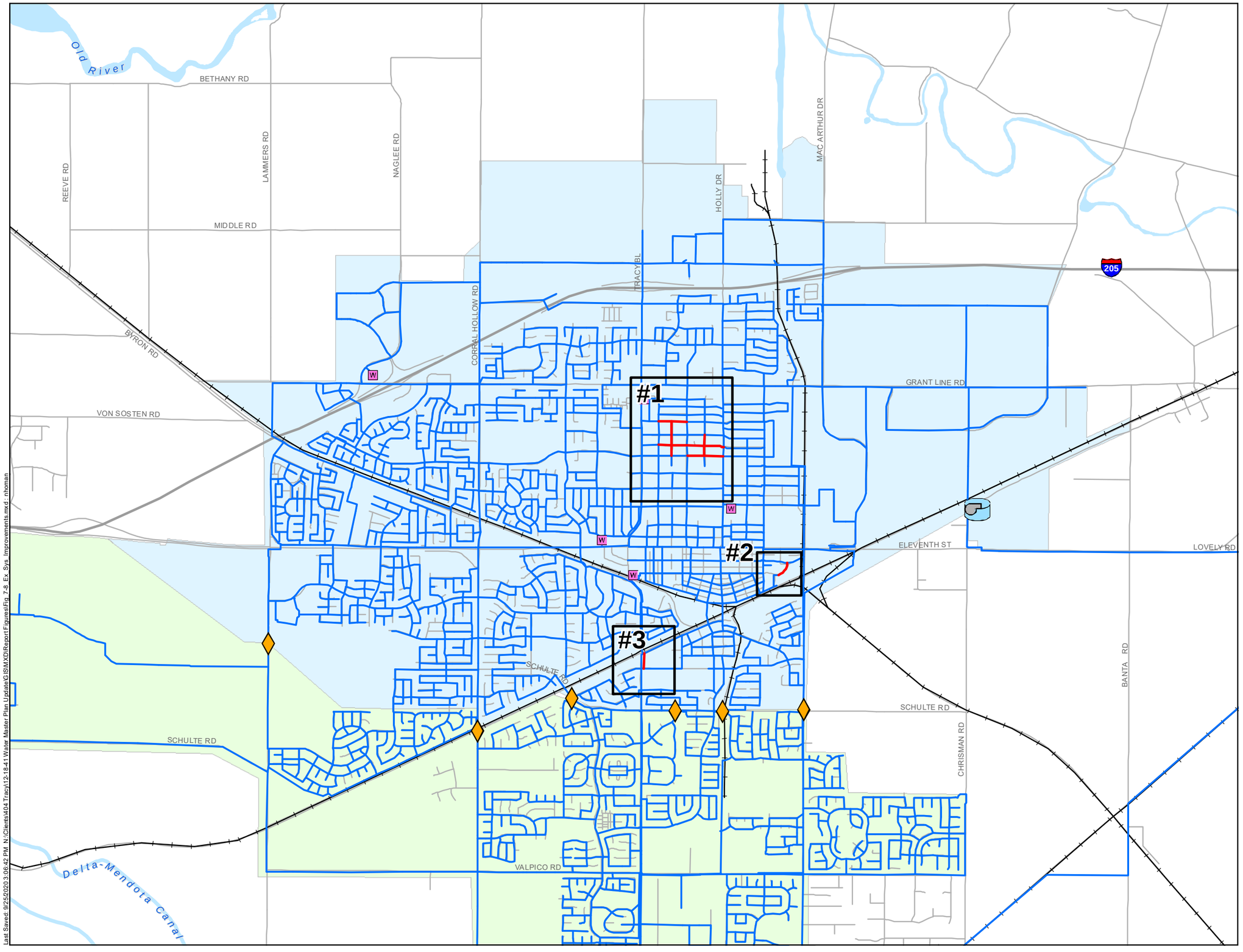
The locations of all recommended pipeline improvements are shown on Figure 7-8.

Several pipeline improvements are recommended to mitigate existing fire flow deficiencies. These fire flow deficiencies are not triggered by projected future water demands from new development. The existing water system infrastructure in the areas listed below is insufficient to meet the fire flow requirements based on existing land use and water demands. As such, planning and design for these improvements should be prioritized. Detailed locations of these improvements are shown on Figure 7-9.

- Improvement #1: Replace the existing pipelines in 20th Street between Bessie Avenue and Parker Avenue, Wall Street between Lowell Avenue and 20th Street, Emerson Avenue between Bessie Avenue and Holly Drive, Court Drive between Whittier Avenue and Lowell Avenue, and Lowell Avenue between Parker Avenue and Holly Drive with approximately 6,000 linear feet (lf) of new 8-inch diameter pipelines.
- Improvement #2: Install approximately 515 lf of 12-inch diameter pipeline in Ninth Street between School Street and Tenth Street.
- Improvement #3: Replace approximately 485 lf of existing 4-inch diameter pipeline in Tracy Boulevard north of Mount Diablo Avenue with new 12-inch diameter pipeline; this improvement was previously recommended in the 2012 WSMP.

7.5.1 Pipeline Renewal and Replacement

As the City's water system ages, older water pipelines will deteriorate and have decreased hydraulic capacity and greater chance of leaking or breaking. To address this, the City should implement a renewal and replacement (R&R) program to proactively replace at-risk water pipelines before they fail. This Citywide Water System Master Plan Update does not include a condition assessment of existing facilities or development of a renewal and replacement (R&R) program. Therefore, it is recommended that the City perform a separate study which evaluates the condition of existing water system assets and develops a prioritized list for asset replacement based on age, material, failure history, and other parameters.



Symbology

- Recommended Improvement from Hydraulic Evaluation
- Existing Pipeline
- Pressure Regulating Station
- Booster Pump Station
- Groundwater Well
- Storage Tank
- John Jones Water Treatment Plant

Pressure Zone

- Zone 1
- Zone 2

Notes:
1. See Figure 7-9 for detailed views of recommended improvements from hydraulic evaluation (areas #1 - #3).

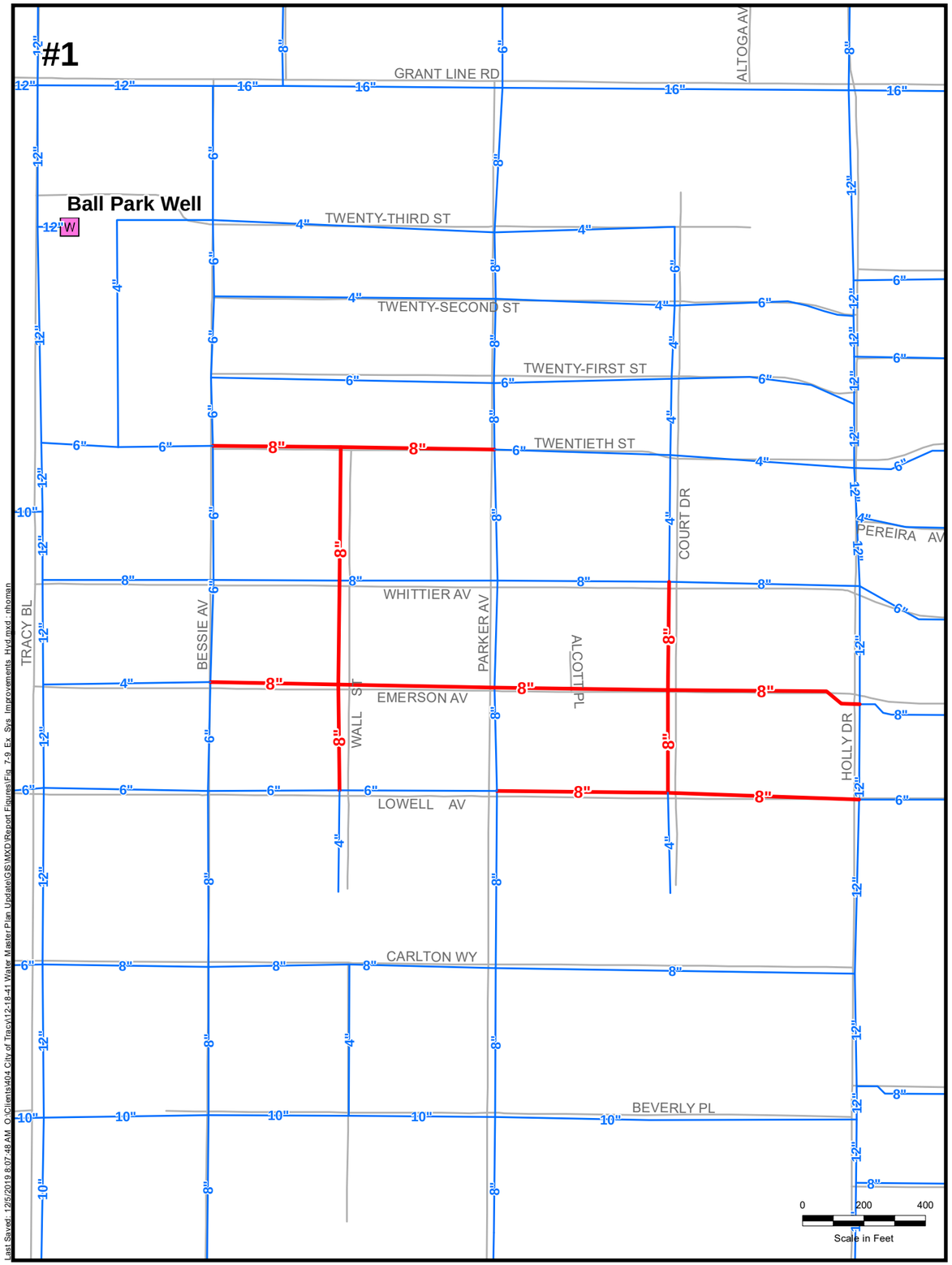
Figure 7-8

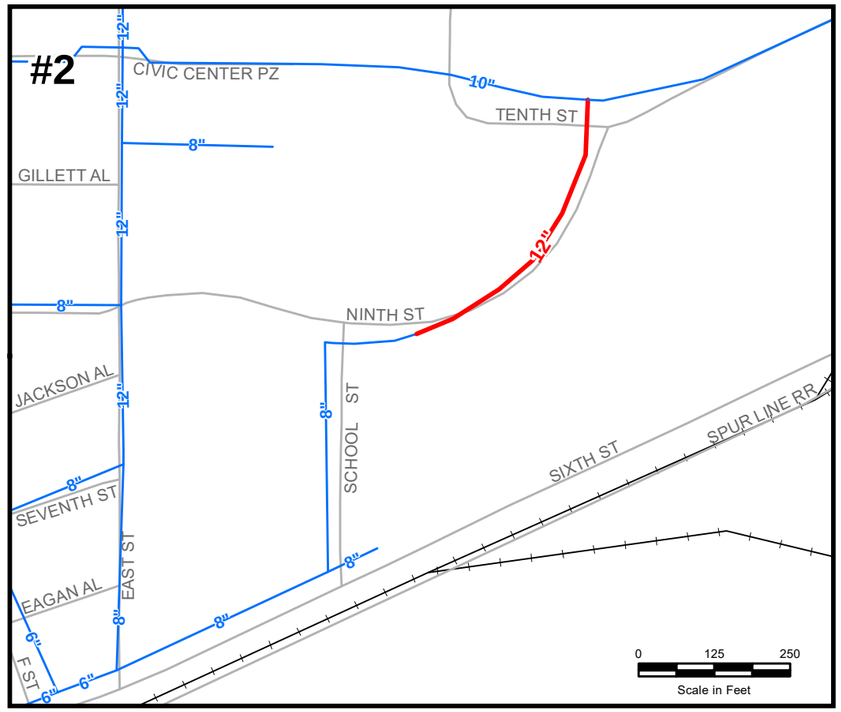
Existing System Recommended Improvements

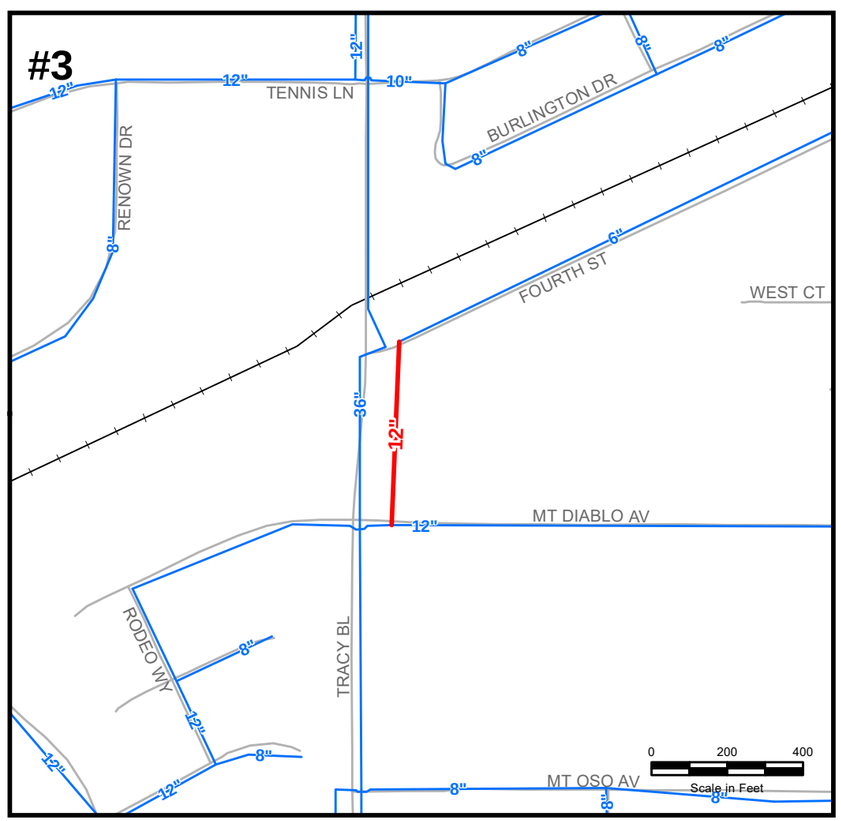
City of Tracy
Water System Master Plan Update

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Symbology

- W — Groundwater Well
- Recommended Improvement from Hydraulic Evaluation
- Existing Pipeline

Notes:
1. See Figure 7-8 for the locations of the recommended improvements.

Figure 7-9

Existing System Recommended Improvements from Hydraulic Evaluation

City of Tracy
Water System Master Plan Update

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CHAPTER 8
Future Potable Water System Evaluation

8.1 OVERVIEW

The purpose of this chapter is to present the development and evaluation of the City's proposed potable water backbone transmission and distribution system for the 2025 and buildout timeframes. This chapter identifies the additional improvements that will be required in addition to the existing potable water system infrastructure improvements (described in Chapter 7) to support the City's projected potable water demands in the future. Development of the future potable water system includes an evaluation of the following: (1) the required future water treatment, storage and pumping capacity; and (2) the future water system's ability to meet recommended water system performance and operational criteria under maximum day demand plus fire flow and peak hour demand scenarios. The future water system was evaluated at both the 2025 and buildout timeframes. The future water system was not evaluated at the 2040 timeframe discussed in Chapters 4 and 5 because new water system facilities should be sized to accommodate buildout demands. Future updates to the WSMP may evaluate the 2040 timeframe as a near-term condition.

Using the City's recommended performance and operational criteria described in Chapter 6, preliminary sizing of major transmission pipelines and facilities required to serve future development projects was developed based on the projected potable water demands presented in Chapter 4. To evaluate the suitability of these preliminary sized facilities to meet the recommended performance and operational criteria, they were subsequently incorporated into the hydraulic model of the existing potable water system (evaluated in Chapter 7). This updated hydraulic model of the future potable water system was then used to evaluate maximum day demand plus fire flow and peak hour demand conditions for the 2025 and buildout timeframes to identify any deficiencies and to refine the preliminary sizing of major transmission pipelines and facilities.

Evaluations, findings, and recommendations for supporting projected future potable water demands and addressing any deficiencies identified within the future potable water backbone transmission and distribution system are included in this chapter. Recommendations were used to develop a CIP, which includes an estimate of probable construction costs for Master Plan Program facilities. The recommended potable water system CIP is described further in Chapter 10.

The following sections of this chapter describe the components of the City's future potable water backbone transmission and distribution system evaluation:

- Pressure Zone Recommendations
- Projected Future Potable Water Demands
- Future Potable Water System Facility Evaluation
- Future Potable Water System Performance Evaluation
- Summary of Recommended Future Potable Water System Improvements

To assist in the evaluation of the City's overall future potable water system, the future infrastructure recommended in this chapter includes the infrastructure required to serve the Tracy Hills development and, for consistency, is based on the adopted water use, peaking factors, and system performance criteria described in previous chapters of this WSMP Update. Although the Tracy Hills development is located within separate and distinct pressures zones from the rest of the City, West Yost has included the Tracy Hills development in the future potable water system evaluation because it will be a part of the City's overall future potable water system operations since it will be served directly from the City's JJWTP. The Tracy Hills Phase 1 water system infrastructure included in this WSMP Update is based on prepared plans and drawings, and the infrastructure for Tracy Hills Phases 2 through 5 is based on the Tracy Hills Water Study prepared by RJA in December 2014. However, projected land use for Tracy Hills used in this WSMP Update is not from the Tracy Hills Water Study, but is instead based on development data provided by the City's Planning Department, as discussed in Chapter 3 and presented in Appendix A. Including the Tracy Hills development in the 2025 and buildout hydraulic model evaluations ensures that the future potable water system will be adequate to serve potable water demands to the entire City (including Tracy Hills) and can provide water service at acceptable system pressures and pipeline velocities. Because planning for future phases of Tracy Hills is subject to change, the sizing of any future water system improvements to serve Tracy Hills should be confirmed based on the latest development plans and associated water demand projections.

8.2 PRESSURE ZONE RECOMMENDATIONS

The City's existing potable water system currently consists of several interconnected pressure zones (Zone 1, Zone 2, Zone 3, and Ellis Reduced Zone). With the exception of the Tracy Hills development, all of the City's future development projects will be located in one of these existing pressure zones. In addition to the planned IPC re-zoning discussed in Chapter 7, there are two planned re-zoning projects which will alter the existing pressure zone boundaries in the 2025 and buildout time frames.

Zone 3 (formerly called City-Side Zone 3) is currently split into two isolated portions: one which serves the Ellis Reduced Zone, and one which serves the International Park of Commerce and the Patterson Pass Business Park. The City plans to connect these two isolated portions by constructing new transmission pipelines and by re-zoning some existing transmission pipeline from Zone 2 to Zone 3. A detailed description of the planned modifications to the City's water system required to fully integrate Zone 3 are provided in Appendix D. The City plans to install new PRVs at the intersection of Schulte Road and Bud Lyons Way and the intersection of Schulte Road and Pavillion Parkway to avoid stagnant water in the dead-end Zone 2 pipelines created by the re-zoning. Once Zone 3 is fully integrated, the Zone 3 BPS will primarily be used to fill the Cordes Tank. The Cordes BPS will serve the integrated Zone 3 and the Ellis Reduced Zone (via several PRVs) when the Cordes Tank is not being filled. For this WSMP Update, it was assumed that this re-zoning project will be complete by 2025.

Another re-zoning project, referred to as "Plan C", will re-zone a small area bounded by Middlefield Drive to the north, Whirlaway Lane to the east, Linne Road to the south, and Corral Hollow Road to the west from Zone 2 to Zone 3. As currently zoned, the Plan C area experiences low pressures because it is located at the top of Zone 2. To improve pressure in the Plan C area, a new Zone 3 transmission pipeline will be constructed. This transmission pipeline will exit the JJWTP from the

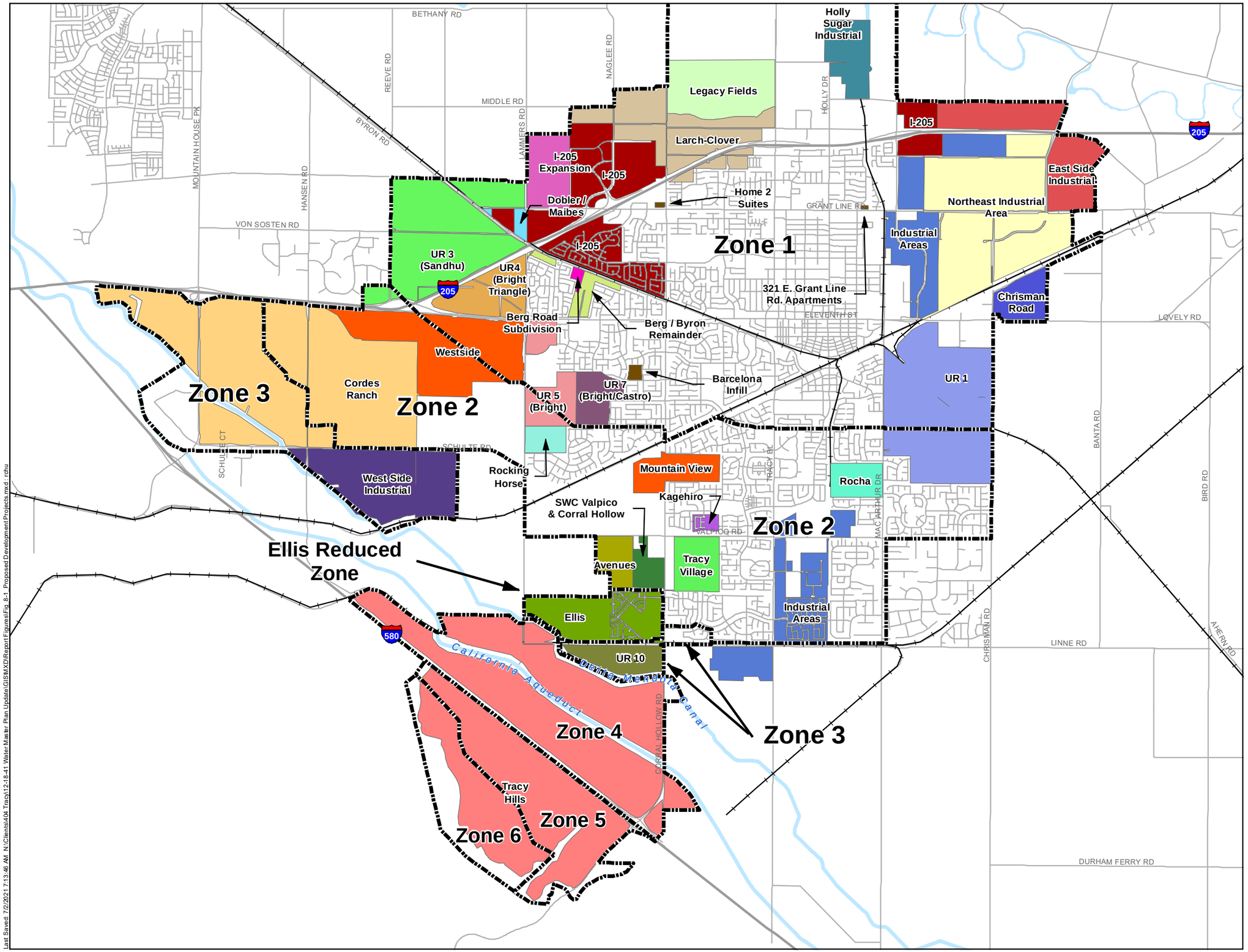
east and tie into the existing pipeline in Linne Road, which will also be re-zoned to Zone 3. This new Zone 3 pipeline will support the Plan C area and provide redundant transmission capacity for Zone 3. To prevent service pressures from exceeding 80 psi in the Plan C area after re-zoning, the City plans to install PRVs at the intersection of Middlefield Drive and Corral Hollow Road and at the Whirlaway pipeline connection to Linne Road. The City also plans to install four new PRVs to separate the Plan C area from the Zone 2 service areas to the north and east. These PRVs will prevent stagnant water from forming in the dead-end pipelines created by the re-zoning. It should be noted that alternative approaches to resolving the stagnant water issue may be possible and should be further evaluated before proceeding with this improvement. It was assumed that the Plan C re-zoning will not occur by 2025 and is therefore only included in the buildout evaluation. Funding for this improvement will be provided through Plan C funds.

In order to serve water demands in the Tracy Hills development, which is located at higher elevations than the City's existing customers, the City plans to add three additional pressure zones onto the existing service area, called Zones 4, 5, and 6. These pressure zones were previously referred to as Tracy Hills Zone 3, Tracy Hills Zone 4, and Tracy Hills Zone 5, respectively. Note that documents produced prior to this Water System Master Plan Update use the old nomenclature. As currently planned, these pressure zones will be exclusive to the proposed Tracy Hills development. Although the service elevations of Zone 3 and Zone 4 partially overlap, the two pressure zones will operate at different hydraulic grades and will be hydraulically separate.

The approximate boundaries of the existing and proposed pressure zones and the locations of future development projects are shown on Figure 8-1. Table 8-1 provides a summary of the existing and proposed pressure zone boundaries with key characteristics such as service elevations and static pressure ranges.

System pressures at some service elevations in the Tracy Hills development are expected to be high (up to 118 psi or more) due to the service elevation ranges proposed for Zones 5 and 6 as developed in the Tracy Hills Water Study (RJA, 2014). To be consistent with the study, the proposed service elevation ranges for Zones 5 and 6 were not adjusted for this Citywide WSMP Update. However, it is recommended that these proposed pressure zones for the Tracy Hills development be reviewed and redefined, if possible, to reduce the occurrence of such high system pressures.

As discussed in Chapter 6, the highest recommended system pressure for the Citywide WSMP Update is 100 psi and any water service connections located in areas with service connection pressures exceeding 80 psi will require the installation of individual PRVs to reduce the pressure below 80 psi.



N

0 2,250 4,500

Scale in Feet

Symbology

- Pressure Zone

Specific Plans

- I-205 Corridor
- Industrial Areas
- Northeast Industrial Area
- Avenues
- Cordes Ranch
- Ellis
- Tracy Hills
- Tracy Village
- Westside

Other Approved Projects

- Berg Road Subdivision
- Dobler / Maibes
- Kagehiro
- Rocking Horse
- Legacy Fields
- Small Approved Projects

Annexations

- Mountain View Annexation

Additional Planned Development Areas

- Berg / Byron Remainder
- Chrisman Road
- East Side Industrial
- Holly Sugar Industrial
- I-205 Expansion
- Larch-Clover
- Rocha
- SWC Valpico & Corral Hollow
- UR 1
- UR 3 (Sandhu)
- UR 4 (Bright Triangle)
- UR 5 (Bright)
- UR 7 (Bright/Castro)
- UR 10
- West Side Industrial

Notes:

1. Dobler / Maibes is part of the I-205 Specific Plan area, but is accounted for separately in this WSMP.
2. Pressure zone boundaries shown reflect planned re-zoning of areas to take place by buildout.
3. Small Approved Projects include Home 2 Suites, 321 E. Grant Line Road Apartments, and Barcelona Infill.

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Figure 8-1

Proposed Development Areas and Pressure Zone Boundaries

City of Tracy
Water System Master Plan Update

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Table 8-1. Existing and Proposed Pressure Zone Boundaries

Pressure Zone	Nominal Hydraulic Grade, ft	Nominal Range of Service Elevations, ft	Static Pressure Range, psi
Zone 1	195	0 - 75	40 - 75
Zone 2	270	75 - 150	40 - 85[(a)]
Zone 3 (formerly City-Side Zone 3)	368	150 - 245	55 - 95[(a)]
Ellis Reduced Zone	323	140 - 185	60 - 80
Zone 4 (formerly Tracy Hills Zone 3)	425	209 - 325	43 - 93[(a)]
Zone 5 (formerly Tracy Hills Zone 4)[(b)]	580	305 - 470	47 - 118[(a)]
Zone 6 (formerly Tracy Hills Zone 5)[(b)]	735	460 - 630	45 - 118[(a)]

(a) Per the California Plumbing Code, services which experience pressures exceeding 80 psi are required to be fitted with a pressure reducing valve.
(b) Based on Tracy Hills Water Study prepared by RJA, December 2014.

8.3 PROJECTED FUTURE POTABLE WATER DEMANDS

Future potable water demands were developed based on the additional projected future land use information provided by the City, and the adopted unit water demand factors as described in Chapter 4. Based on the existing and proposed pressure zone boundaries, the projected potable water demands were calculated and categorized by pressure zone. Table 8-2 summarizes the City's 2025 potable water demands (including existing demands) by pressure zone. Table 8-3 summarizes the City's buildout potable water demands (including existing and 2025 demands) by pressure zone. Table 8-4 provides additional detail of the projected average day water demands at buildout for each future development project by pressure zone (not including existing demands).

Table 8-2. 2025 Potable Water Demands by Pressure Zone

Pressure Zone		Average Day Demand[a]		Maximum Day Demand[b]		Peak Hour Demand[c]	
		gpm	mgd	gpm	mgd	gpm	mgd
Zone 1		7,590	10.9	12,903	18.6	22,011	31.7
Zone 2		4,251	6.1	7,227	10.4	12,329	17.8
Zone 3	PPBP[d]	392	0.6	667	1.0	1,138	1.6
	Ellis Reduced Zone	186	0.3	316	0.5	540	0.8
	Other	474	0.7	806	1.2	1,375	2.0
Zone 4		370	0.5	629	0.9	1,074	1.5
Total		**13,264**	**19.1**	**22,550**	**32.5**	**38,467**	**55.4**

(a) Equal to existing water demands plus projected 2025 water demands presented in Table 4-16.
(b) Maximum day demand is 1.7 times the average day demand.
(c) Peak hour demand is 2.9 times the average day demand.
(d) Water demands from PPBP are not included in the City's water production totals because the water supply for this area is purchased by PPBP from the Byron Bethany Irrigation District. However, the City is responsible for providing water treatment and delivery services to PPBP.

Table 8-3. Buildout Potable Water Demands by Pressure Zone

Pressure Zone		Average Day Demand[a]		Maximum Day Demand[b]		Peak Hour Demand[c]	
		gpm	mgd	gpm	mgd	gpm	mgd
Zone 1		11,249	16.2	19,123	27.5	32,622	47.0
Zone 2		5,816	8.4	9,887	14.2	16,866	24.3
Zone 3	PPBP[d]	392	0.6	667	1.0	1,138	1.6
	Ellis Reduced Zone	342	0.5	582	0.8	993	1.4
	Other	1,286	1.9	2,185	3.1	3,728	5.4
Zone 4		1,187	1.7	2,018	2.9	3,443	5.0
Zone 5		568	0.8	965	1.4	1,646	2.4
Zone 6[e]		309	0.4	526	0.8	897	1.3
Total		**21,149**	**30.5**	**35,954**	**51.8**	**61,333**	**88.3**

(a) Equal to existing water demands plus projected buildout water demands presented in Table 4-16.
(b) Maximum day demand is 1.7 times the average day demand.
(c) Peak hour demand is 2.9 times the average day demand.
(d) Water demands from PPBP are not included in the City's water production totals because the water supply for this area is purchased by PPBP from the Byron Bethany Irrigation District. However, the City is responsible for providing water treatment and delivery services to PPBP.
(e) Tracy Hills demands were allocated by pressure zone based on recent land use data provided by the City's planning division. The proportion of Tracy Hills demands allocated to Zone 6 in this WSMP is significantly greater than allocated to Zone 6 (formerly Tracy Hills Zone 5) in the Tracy Hills Water Study prepared by RJA (December 2014). Demands should be confirmed using the most recent land use data before development of Zones 5 and 6 begins.

Table 8-4. Summary of Buildout Average Day Potable Water Demands by Development Project[a,b]

Project or Development Area	Zone 1		Zone 2		Zone 3 and Ellis Reduced Zone		Zone 4		Zone 5		Zone 6		Total	
	gpm	percent of total	gpm	percent of total	gpm	percent of total	gpm	percent of total	gpm	percent of total	gpm	percent of total	gpm	percent of total
UR 5 (Bright)	181.79	4.14%		0.00%		0.00%		0.00%		0.00%		0.00%	181.79	1.81%
UR 7 (Bright/Castro)	136.40	3.10%		0.00%		0.00%		0.00%		0.00%		0.00%	136.40	1.36%
Rocking Horse		0.00%	63.37	3.08%		0.00%		0.00%		0.00%		0.00%	63.37	0.63%
Tracy Village		0.00%	183.40	8.91%		0.00%		0.00%		0.00%		0.00%	183.40	1.82%
UR 1	535.24	12.18%	219.02	10.64%		0.00%		0.00%		0.00%		0.00%	754.26	7.50%
Ellis		0.00%		0.00%	324.35	21.10%		0.00%		0.00%		0.00%	324.35	3.23%
Avenues		0.00%	134.59	6.54%		0.00%		0.00%		0.00%		0.00%	134.59	1.34%
UR 10		0.00%		0.00%	87.91	5.72%		0.00%		0.00%		0.00%	87.91	0.87%
Tracy Hills		0.00%		0.00%		0.00%	1,187.29	100.00%	567.61	100.00%	309.45	100.00%	2064.35	20.53%
Westside	389.47	8.87%	389.47	18.92%		0.00%		0.00%		0.00%		0.00%	778.94	7.75%
Cordes Ranch		0.00%	464.82	22.58%	627.36	40.82%		0.00%		0.00%		0.00%	1092.17	10.86%
UR 4 (Bright Triangle)	239.63	5.45%		0.00%		0.00%		0.00%		0.00%		0.00%	239.63	2.38%
UR 3 (Sandhu)	437.60	9.96%	69.79	3.39%		0.00%		0.00%		0.00%		0.00%	507.39	5.05%
I-205 Expansion	325.93	7.42%		0.00%		0.00%		0.00%		0.00%		0.00%	325.93	3.24%
West Side Industrial		0.00%		0.00%	492.57	32.05%		0.00%		0.00%		0.00%	492.57	4.90%
East Side Industrial	280.33	6.38%		0.00%		0.00%		0.00%		0.00%		0.00%	280.33	2.79%
Larch-Clover	402.17	9.15%		0.00%		0.00%		0.00%		0.00%		0.00%	402.17	4.00%
Chrisman Road	89.42	2.04%		0.00%		0.00%		0.00%		0.00%		0.00%	89.42	0.89%
Rocha		0.00%	144.91	7.04%		0.00%		0.00%		0.00%		0.00%	144.91	1.44%
Berg/Byron Remainder	116.54	2.65%		0.00%		0.00%		0.00%		0.00%		0.00%	116.54	1.16%
Berg Road Subdivision	16.84	0.38%		0.00%		0.00%		0.00%		0.00%		0.00%	16.84	0.17%
SWC Valpico & Corral Hollow		0.00%	79.07	3.84%		0.00%		0.00%		0.00%		0.00%	79.07	0.79%
Kagehiro		0.00%	55.70	2.71%		0.00%		0.00%		0.00%		0.00%	55.70	0.55%
Dobler/Maibes	24.13	0.55%		0.00%		0.00%		0.00%		0.00%		0.00%	24.13	0.24%
Holly Sugar Industrial	113.61	2.59%		0.00%		0.00%		0.00%		0.00%		0.00%	113.61	1.13%
Northeast Industrial Area	446.12	10.15%		0.00%		0.00%		0.00%		0.00%		0.00%	446.12	4.44%
Industrial Areas Specific Plan		0.00%	146.92	7.14%		0.00%		0.00%		0.00%		0.00%	146.92	1.46%
I-205 Corridor Specific Plan	46.93	1.07%		0.00%		0.00%		0.00%		0.00%		0.00%	46.93	0.47%
Mountain View		0.00%	54.38	2.64%		0.00%		0.00%		0.00%		0.00%	54.38	0.54%
Legacy Fields	32.44	0.74%		0.00%		0.00%		0.00%		0.00%		0.00%	32.44	0.32%
Small Approved Projects[c]	202.69	4.61%	0.00	0.00%		0.00%		0.00%		0.00%		0.00%	202.69	2.02%
Infill (misc.)	375.96	8.56%	53.02	2.58%	4.87	0.32%		0.00%		0.00%		0.00%	433.85	4.32%
Total	**4,393.25**	**100%**	**2,058.45**	**100%**	**1,537.05**	**100%**	**1,187.29**	**100%**	**567.61**	**100%**	**309.45**	**100%**	**10,053.10**	**100%**

(a) Water demands shown are for new development only and do not include existing potable water demands. See Appendix A for detailed demand calculations by project or development area.

(b) Water demands shown include UAFW.

(c) Includes Home 2 Suites, 321 E. Grant Line Road Apartments, and Barcelona Infill.
Also includes the following identified projects within the I-205 Corridor Specific Plan area: Sierra Hills, Grant Line Road Apartments, Aspire II, Harvest.

8.4 FUTURE POTABLE WATER SYSTEM FACILITY EVALUATION

To develop the future potable water system, analyses addressing the following system facilities were conducted:

- Water Treatment Capacity
- Water Storage Capacity
- Pumping Capacity
- Critical Supply Facilities

The results from the future potable water system facilities analyses are discussed below. Recommendations for supporting projected future potable water demands and addressing any deficiencies identified within the future potable water backbone transmission and distribution system are summarized in *Section 8.6 Summary of Recommended Future Potable Water System Improvements*.

8.4.1 Water Treatment Capacity

Sufficient water treatment capacity from the JJWTP, the South County Water Supply Project, and groundwater wells will be required to meet the City's 2025 and buildout maximum day demand conditions. In addition, the City's goal is to have sufficient surface water treatment capacity to meet the 2025 and buildout maximum month demands without relying on groundwater.

Table 8-5 shows that the City's current water treatment capacity is sufficient to meet 2025 maximum day potable water demands and that the City's current surface water treatment capacity is sufficient to meet 2025 maximum month potable water demands.

Table 8-5. Comparison of Available and Required Water Treatment Capacity in 2025, mgd

Demand Condition	JJWTP[a]	South County Water Supply Project[b]	Groundwater	Total Treated Water Capacity	2025 Demand	Treated Water Capacity Surplus or (Deficit)
Maximum Day	27	15.5	21.7[c]	64.2	32	32
Maximum Month[d]	27	15.5	0.0[e]	42.5	29	13

(a) Supplied from Zone 1 36-inch diameter transmission main, Zone 2 BPS, Zone 3 BPS, and Zone 4 BPS. Although the JJWTP is designed to supply 30 mgd, the actual maximum pumping capacity of the intake pumps is 27 mgd.
(b) Supplied from Linne Road and NEI Booster Pump Stations. It is anticipated that as Manteca and Lathrop develop, Tracy's share of the deliverable capacity from this source will be reduced to 15.5 mgd.
(c) Equivalent to firm groundwater pumping capacity, assuming that 20 percent of the City's wells would be out of service (i.e., approximately two wells: one in Zone 1, and one at the JJWTP).
(d) Estimated to be 90 percent of maximum day demands.
(e) The City's goal is to meet maximum month demands without relying on groundwater supply.

Table 8-6 shows that the City's current water treatment capacity is sufficient to meet buildout maximum day potable water demands. Although the City's current surface water treatment capacity is not sufficient to meet buildout maximum month potable water demands, the deficit could be made up using 4 mgd of groundwater.

Table 8-6. Comparison of Available and Required Water Treatment Capacity at Buildout, mgd

Demand Condition	JJWTP[a]	South County Water Supply Project[b]	Groundwater	Total Treated Water Capacity	Buildout Demand	Treated Water Capacity Surplus or (Deficit)
Maximum Day	27	15.5	32.5[c]	75.0	52	23
Maximum Month[d]	27	15.5	0.0[e]	42.5	47	(4)

(a) Supplied from Zone 1 36-inch diameter transmission main, Zone 2 BPS, Zone 3 BPS, and Zone 4 BPS. Although the JJWTP is designed to supply 30 mgd, the actual maximum pumping capacity of the intake pumps is 27 mgd.
(b) Supplied from Linne Road and NEI Booster Pump Stations. It is anticipated that as Manteca and Lathrop develop, Tracy's share of the deliverable capacity from this source will be reduced to 15.5 mgd.
(c) Equivalent to firm groundwater pumping capacity, assuming that 20 percent of the City's wells would be out of service (i.e., approximately three wells: two in Zone 1, and one at the JJWTP). Includes the capacity of recommended wells to be constructed by buildout.
(d) Estimated to be 90 percent of maximum day demands.
(e) The City's goal is to meet maximum month demands without relying on groundwater supply.

Based on discussion with City staff, plans for a future 15 mgd expansion at the JJWTP were already envisioned and integrated into the planning and associated environmental review process during the most recent 15 mgd expansion (from 15 to 30 mgd) completed in 2008. Based on the updated future demand projections, an expansion of the JJWTP would not be required if the City is able to pump groundwater at a sustainable rate to supplement surface water treatment capacity. However, as a part of the City's wastewater permit, the City needs to reduce the use of the groundwater as part of its Salinity Reduction Plan, as well as to comply with the Groundwater Sustainability Plan prepared for compliance with the Sustainable Groundwater Management Act. As such, a future additional 10 mgd expansion of the JJWTP is recommended to provide the City with additional water treatment capacity, as well as operational flexibility and reliability, if the use of groundwater supplies needs to be limited or if there is a supply outage from South County Water Supply Project. The expansion would also include a new administration/maintenance building to accommodate future staffing needs and maintenance activities.

Additional JJWTP treated water storage and pumping facilities are also recommended at buildout. Based on the additional demands in Zone 3 at buildout, it is recommended that a new clearwell be constructed at the JJWTP to provide operational flexibility for the water treatment plant and to provide additional operational and emergency storage capacity to serve future developments. For this Citywide WSMP Update, it was assumed that the new clearwell will have a minimum active (useable) storage capacity of 1.0 MG. Buildout demands will also require new booster pumps to be installed at the JJWTP. *Section 8.4.3 Pumping Capacity* provides additional discussion regarding the additional treated surface water booster pumping capacity required at the JJWTP to serve buildout maximum day demands.

8.4.2 Water Storage Capacity

The principal advantages that storage provides for the water system are the ability to equalize demands on supply sources, production facilities, and transmission mains; to provide emergency storage in case of supply failure; and to provide water to fight fires. The City's water service area has two sources of available storage: above ground storage (i.e., clearwells and storage tanks) and storage available through the groundwater basin. Together, these two sources of storage must be sufficient to meet the City's operational, emergency, and fire flow storage criteria. The volumes required for each of these three storage components are listed below:

- Operational Storage: 30 percent of a maximum day demand.
- Emergency Storage: 1.5 times an average day demand.
- Fire Flow Storage: The required fire flow rates multiplied by their associated fire flow duration periods, as required by the City's Fire Department. For larger pressure zones, two concurrent fire flow events were assumed for the storage capacity analysis.[1] However, the recommended fire flow storage does not include the volume associated with sprinkler flows.

Because the City's potable water supply includes supply from groundwater wells, the groundwater basin can account for a portion of the recommended emergency storage, in the form of a groundwater credit. However, the following must be true to use the groundwater supply to offset the need to provide surface storage reservoirs:

- Groundwater supply is of potable water quality and can be reliably accessed (i.e., wells are equipped with on-site emergency generators).
- Groundwater supply is not already relied upon to meet the City's average day demand requirements.
- Groundwater supply is of firm groundwater supply availability (i.e., assumes 20 percent of wells will be out of service at any given time).
- Sufficient water distribution facilities are available to distribute this water to demand areas.

[1] Two concurrent fire flow events were not simulated in Zones 4, 5 and 6 for the Tracy Hills development because these smaller pressure zones do not justify the use of two simultaneous fire flow events.

In addition, the City currently has two independent sources of treated surface water supply, and some quantity of the total treated surface water supply capacity can also account for a portion of the recommended emergency storage. The treated surface water credit assumes that the smaller of the treated surface water supply sources can be available to offset a portion of the emergency storage requirement. However, the following must be true to use treated surface water supply to offset the need to provide above-ground storage:

- Treated surface water supply can be reliably accessed (i.e., treated surface water supply facility is equipped with on-site emergency generator).
- Sufficient treated surface water booster pumping facilities are available to distribute this water to demand areas.

In summary, the Emergency Storage Credit is equal to the sum of the groundwater and treated surface water supply credits. However, the Emergency Storage Credit can only provide a maximum storage credit equal to the City's required emergency storage volume.

The existing potable water storage facilities (including the Tracy Hills At-Grade Tank, which is currently under construction), in conjunction with the available Emergency Storage Credit, were evaluated to determine whether the City's current potable water system has sufficient storage capacity within each pressure zone to provide the required operational, emergency, and fire flow storage for the 2025 and buildout timeframes.

Table 8-7 provides a comparison of the City's available potable water storage capacity and emergency storage credit with the required 2025 storage capacity. The comparison indicates that the City's existing facilities will be sufficient and that no additional storage facilities need to be constructed by 2025.

Table 8-8 provides a comparison of the City's available potable water storage capacity and emergency storage credit with the required buildout storage capacity. The comparison between the City's available and required storage capacities indicates that the City will have the following potable water storage capacity deficits within each pressure zone at buildout:

- Zones 1 and 2[2]: 0.2 MG
- Zone 3: 1.2 MG
- Zone 4: 0.6 MG
- Zone 5: 2.6 MG
- Zone 6: 1.1 MG

[2] Under existing conditions, Zones 1 and 2 are interconnected through six existing pressure regulating stations (PRS). Therefore, Zones 1 and 2 were evaluated together for the future potable water system facility evaluation.

Table 8-7. Comparison of Available and Required Water Storage Capacity in 2025

[A]	[B]	[C]	[D]	[E]	[F]	[G] = [C] + [F]	[H]	[I]	[J]	[K] = [H] + [I] + [J]	[L] = [G] - [K]
		Available Storage Capacity, MG					Required Storage Capacity, MG				
			Emergency Storage Credit								
Station	Status	Reservoir Capacity	Groundwater Credit[a]	Treated Surface Water Supply Credit[b]	Total Emergency Storage Credit[c]	Total Available Storage	Operational[d]	Emergency[e]	Fire Flow	Total Required Storage	Storage Surplus (Deficit), MG
Zone 1 and Zone 2											
NEI	Active	2.4	--	25.50	25.58	**39.08**	8.70	25.58	1.14[h]	**35.41**	**3.6**
Lincoln Well	Active	--	5.40								
Lewis Manor Well	Inactive	--	--								
Park and Ride Well	Active	--	4.32								
Ball Park Well	Active	--	5.40								
Well 8[f]	Active	--	--								
Linne	Active	7.1	--								
Well 1[g]	Active	--	--								
Well 2[f,g]	Active	--	--								
Well 3[f,g]	Active	--	--								
Well 4[f,g]	Active	--	--								
Clearwell #2	Active	4.0	--								
Zone 3 and Ellis Reduced Zone											
Cordes	Active	2.0	--	0.00	2.27[i]	**4.27**	0.77	2.27	1.14[h]	**4.19**	**0.1**
Zone 4											
Tracy Hills At-Grade	Under Construction	3.8	--	0.00	0.00	**3.75**	0.27	0.80	0.18[j]	**1.25**	**2.5**

(a) Credit based on 1.5 days of pumping capacity from active groundwater wells with on-site backup power because the required emergency storage capacity is equal to 1.5 times the average day demand. See Table 7-2 for individual well capacity.

(b) Credit based on 1.5 days of available treatment capacity (17 mgd) from the SCWSP because the required emergency storage capacity is equal to 1.5 times the average day demand.

(c) Equal to the sum of the groundwater and treated surface water supply credits; however, the maximum credit is equal to the required emergency storage capacity.

(d) Based on 30 percent of a maximum day demand (see Table 8-2).

(e) Based on 1.5 times the average day demand (see Table 8-2).

(f) Well does not contribute to Groundwater Credit because it does not have on-site backup power.

(g) Well does not contribute to Groundwater Credit because water produced by the well must be blended with chlorinated water from the JJWTP prior to distribution. The JJWTP is assumed to be offline in an emergency.

(h) Based on storage required for two concurrent fire flow events; a Single Family Residential fire flow and an Industrial fire flow (see Table 6-1).

(i) Surplus Treated Surface Water Supply Credit from other pressure zones can be used to provide emergency storage for Zone 3.

(j) Based on storage required for a Single Family Residential fire flow (see Table 6-1).

Table 8-8. Comparison of Available and Required Water Storage Capacity at Buildout

[A]	[B]	[C]	[D]	[E]	[F]	[G] = [C] + [F]	[H]	[I]	[J]	[K] = [H] + [I] + [J]	[L] = [G] - [K]
		Available Storage Capacity, MG					Required Storage Capacity, MG				
			Emergency Storage Credit								
Station	Status	Reservoir Capacity	Groundwater Credit[a]	Treated Surface Water Supply Credit[b]	Total Emergency Storage Credit[c]	Total Available Storage	Operational[d]	Emergency[e]	Fire Flow	Total Required Storage	Storage Surplus (Deficit), MG
Zone 1 and Zone 2											
NEI	Active	2.4	--	25.50	36.86	**50.36**	12.53	36.86	1.14[h]	**50.53**	**(0.2)**
Lincoln Well	Active	--	5.40								
Lewis Manor Well	Inactive	--	--								
Park and Ride Well	Active	--	4.32								
Ball Park Well	Active	--	5.40								
Well 8[f]	Active	--	--								
Linne	Active	7.1	--								
Well 1[g]	Active	--	--								
Well 2[f,g]	Active	--	--								
Well 3[f,g]	Active	--	--								
Well 4[f,g]	Active	--	--								
Clearwell #2	Active	4.0	--								
Zone 3 and Ellis Reduced Zone											
Cordes	Active	2.0	--	0.00	3.27[i]	**5.76**	1.48	4.36	1.14[h]	**6.99**	**(1.2)**
Zone 4											
Tracy Hills At-Grade	Under Construction	3.8	--	0.00	0.00	**3.75**	0.87	2.56	0.96[j]	**4.40**	**(0.6)**
Zone 5											
--	--	--	--	0.00	0.00	**0.00**	0.42	1.23	0.96[j]	**2.60**	**(2.6)**
Zone 6											
--	--	--	--	0.00	0.00	**0.00**	0.23	0.67	0.18[k]	**1.08**	**(1.1)**

(a) Credit based on 1.5 days of pumping capacity from active groundwater wells with on-site backup power because the required emergency storage capacity is equal to 1.5 times the average day demand. See Table 7-2 for individual well capacity.

(b) Credit based on 1.5 days of available treatment capacity (17 mgd) from the SCWSP because the required emergency storage capacity is equal to 1.5 times the average day demand.

(c) Equal to the sum of the groundwater and treated surface water supply credits; however, the maximum credit is equal to the required emergency storage capacity.

(d) Based on 30 percent of a maximum day demand (see Table 8-3).

(e) Based on 1.5 times the average day demand (see Table 8-3).

(f) Well does not contribute to Groundwater Credit because it does not have on-site backup power.

(g) Well does not contribute to Groundwater Credit because water produced by the well must be blended with chlorinated water from the JJWTP prior to distribution. The JJWTP is assumed to be offline in an emergency.

(h) Based on storage required for two concurrent fire flow events; a Single Family Residential fire flow and an Industrial fire flow (see Table 6-1).

(i) Surplus Treated Surface Water Supply Credit from other pressure zones can be used to provide emergency storage for Zone 3.

(j) Based on storage required for an Industrial or Institutional fire flow (see Table 6-1).

(k) Based on storage required for a Single Family Residential fire flow (see Table 6-1).

It should be noted that in the period before the future Clearwell #3 is completed, the full storage capacity in Clearwell #2 is not available. During normal operations, the water level in Clearwell #2 is maintained near the maximum water level, at water surface elevation (WSEL) 197.5 feet, approximately 11.5 feet above the floor. This maximum WSEL provides approximately 4 MG of storage in Clearwell #2. Under emergency conditions, the City is able to significantly draw down the WSEL in Clearwell #2 with the Zone 2 pumps. However, because the Zone 4 and Zone 5 pump station suction pipe cannot draw water from Clearwell #2 at a WSEL less than approximately five feet above the floor, the available storage in Clearwell #2 is currently limited to 2.25 MG. Until the Tracy Hills tanks are in service, sufficient operational, emergency, and fire flow storage must be maintained in Clearwell #2 to serve Tracy Hills and prevent dewatering of the Zone 4 and Zone 5 pumps.

Once in service, the Tracy Hills Zone 4 tank will provide sufficient operational, emergency, and fire storage for Zone 4. Similarly, the planned Zone 5 tank will provide sufficient operational, emergency, and fire storage for Zones 5 and 6 once constructed. With these tanks in service, the full volume of Clearwell #2 may be used in an emergency. Although this will dewater the Zone 4 and Zone 5 pumps, the Tracy Hills tanks will provide emergency supply to Zones 4 and 5 until service from the JJWTP can be restored. The water level in Clearwell #2 should still be maintained at greater than five feet above the floor for normal operations.

An additional clearwell (Clearwell #3) is proposed at the JJWTP and will be hydraulically connected to Clearwell #2 and the Zone 4 and Zone 5 pump stations. Once Clearwell #3 is constructed, the suction piping for the Tracy Hills pump stations will be connected to the pump wet well in Clearwell #3 at a low enough elevation to allow the Tracy Hills pump stations to continue in operation as long as volume remains in Clearwell #3, allowing the City to use the full volume of operational, emergency, and fire flow storage in both Clearwell #2 and Clearwell #3 without dewatering the Zone 4 and Zone 5 pumps.

Based on the storage capacity deficits identified in Table 8-8, Table 8-9 summarizes the recommended facility improvements to provide additional buildout storage capacity. The proposed specific facility improvements are based on those presented in the 2012 WSMP and in the Tracy Hills Water Study (RJA, December 2014), but were modified to reflect the reduced buildout storage capacity requirements.

Table 8-9. Comparison of Available, Proposed, and Required Water Storage Capacity at Buildout

[A]	[B]	[C]	[D]	[E]	[F]	[G] = [C] + [F]	[H]	[I]	[J]	[K] = [H] + [I] + [J]	[L] = [G] - [K]
		Available Storage Capacity, MG					Required Storage Capacity, MG				
			Emergency Storage Credit								
Station	Status	Reservoir Capacity	Groundwater Credit[a]	Treated Surface Water Supply Credit[b]	Total Emergency Storage Credit[c]	Total Available Storage	Operational[d]	Emergency[e]	Fire Flow	Total Required Storage	Storage Surplus (Deficit), MG
Zone 1 and Zone 2											
NEI	Active	2.4	--	25.50	36.86	**51.36**	12.53	36.86	1.14[i]	**50.53**	**0.8**
Lincoln Well	Active	--	5.40								
Lewis Manor Well	Inactive	--	--								
Park and Ride Well	Active	--	4.32								
Ball Park Well	Active	--	5.40								
Well 8[f]	Active	--	--								
Linne	Active	7.1	--								
Well 1[g]	Active	--	--								
Well 2[f,g]	Active	--	--								
Well 3[f,g]	Active	--	--								
Well 4[f,g]	Active	--	--								
Clearwell #2	Active	4.0	--								
Westside Tank	Proposed[h]	1.0	--								
Westside ASR Well	Proposed	--	5.40								
Wainwright ASR Well	Proposed	--	5.40								
Larsen Park ASR Well	Proposed	--	5.40								
Zone 3 and Ellis Reduced Zone											
Cordes	Active	2.0	--	0.00	4.86[j]	**7.36**	1.48	4.36	1.14[i]	**6.99**	**0.4**
JJWTP Clearwell #3	Proposed[h]	1.0	--								
Ellis ASR Well	Proposed	--	2.16								
Zone 4											
Tracy Hills At-Grade	Under Construction	3.8	--	0.00	0.00	**3.75**	0.87	2.56	0.96[k]	**4.40**	**(0.6)**
Zone 5											
Gravity Tank[l]	Proposed[h]	3.2	--	0.00	0.00	**3.2**	0.42	1.23	0.96[k]	**2.60**	**0.6**
Zone 6											
Gravity Tank[m]	Proposed[h]	1.1	--	0.00	0.00	**1.10**	0.23	0.67	0.18[n]	**1.08**	**0.0**

(a) Credit based on 1.5 days of pumping capacity from active groundwater wells with on-site backup power because the required emergency storage capacity is equal to 1.5 times the average day demand. See Table 7-2 for the individual capacity of existing wells. Proposed ASR wells in Zone 1 and Zone 2 were assumed to have a capacity of 2,500 gpm. The proposed Ellis ASR Well was assumed to have a capacity of 1,000 gpm.

(b) Credit based on 1.5 days of available treatment capacity (17 mgd) from the SCWSP because the required emergency storage capacity is equal to 1.5 times the average day demand.

(c) Equal to the sum of the groundwater and treated surface water supply credits; however, the maximum credit is equal to the required emergency storage capacity.

(d) Based on 30 percent of a maximum day demand (see Table 8-3).

(e) Based on 1.5 times the average day demand (see Table 8-3).

(f) Well does not contribute to Groundwater Credit because it does not have on-site backup power.

(g) Well does not contribute to Groundwater Credit because water produced by the well must be blended with chlorinated water from the JJWTP prior to distribution. The JJWTP is assumed to be offline in an emergency.

(h) Proposed reservoir capacity is the recommended active and useable reservoir storage capacity and does not include dead and freeboard storage, which will be determined during design.

(i) Based on storage required for two concurrent fire flow events; a Single Family Residential fire flow and an Industrial fire flow (see Table 6-1).

(j) Surplus Treated Surface Water Supply Credit from other pressure zones can be used to provide emergency storage for Zone 3.

(k) Based on storage required for an Industrial or Institutional fire flow (see Table 6-1).

(l) The Tracy Hills Water Study prepared by RJA (December 2014) recommended two Zone 5 (formerly Tracy Hills Zone 4) tanks with a combined capacity of 8.8 MG. Recommended Zone 5 capacity is significantly smaller than previously evaluated due to decrease in demand factors and emergency storage requirement. Sizing of the proposed tanks should be confirmed before development of Zone 5 begins.

(m) Based on previous recommendations from the Tracy Hills Water Study prepared by RJA (December 2014). Sizing of the proposed tank should be confirmed before development of Zone 6 begins.

(n) Based on storage required for a Single Family fire flow (see Table 6-1).

A portion of the buildout storage capacity requirement is met by additional Emergency Storage Credit provided by the new ASR wells recommended in Chapter 5. It was assumed that three of the ASR wells will be located in Zones 1 and 2, while the fourth ASR well will be located in Zone 3. The ASR well in Zone 3 was assumed to have a lower production capacity due to the less ideal aquifer conditions underlying Zone 3. All new wells should be equipped with ammonia addition.

It is recommended that the City construct a 1.0 MG pumped storage tank near the Westside Specific Plan development in Zone 1. In addition to providing additional storage capacity needed to meet the operational storage requirement for Zones 1 and 2, the Westside Tank would provide localized storage for the northwest sector of the City. Localized storage provides supply reliability in the chance that storage from the JJWTP or any other storage facility is unavailable for any reason.

It is recommended that the City construct a Clearwell (Clearwell #3) with a minimum volume of 1.0 MG at the JJWTP to provide additional storage capacity for Zone 3. In addition to providing storage, Clearwell #3 would provide operational flexibility for the JJWTP. Because of the additional operational flexibility that Clearwell #3 would provide, it is recommended that Clearwell #3 be constructed as soon as possible. As noted above, no additional storage facilities are required by 2025, but it is recommended that Clearwell #3 be constructed by no later than 2030.

It is also recommended that the City construct a 3.2 MG gravity storage tank in Zone 5 and a 1.1 MG gravity storage tank in Zone 6. The remaining 0.6 MG storage capacity deficit in Zone 4 is to be provided by Zone 5 via a PRV. It should be noted that the 3.2 MG capacity of the Zone 5 Tank recommended in this WSMP Update is significantly smaller than the 8.8 MG recommended in the Tracy Hills Water Study (RJA, December 2014) for several reasons: (1) since the Tracy Hills Water Study was conducted, the proposed land use plan for Tracy Hills has changed; (2) the water demand factors used to project demands for Tracy Hills in this WSMP Update are lower than those used in the Tracy Hills Water Study; and (3) the emergency storage capacity requirement used in this WSMP Update is lower than that used in the Tracy Hills Water Study. As proposed land use plans may continue to be refined, the size of the Zone 5 and Zone 6 tanks should be confirmed before development of Zones 5 and 6 begins.

8.4.3 Pumping Capacity

The existing and proposed pumping capacity in the City's potable water system was evaluated to assess its ability to deliver a reliable firm capacity to serve the water service area for the 2025 and buildout timeframes. Firm capacity assumes a reduction in total pumping capacity to account for pumps that are out of service at any given time due to mechanical breakdowns, maintenance, water quality, or other operational issues. At each booster pump station, firm booster pumping capacity was defined as the total booster pump station capacity with the largest pump out of service. For groundwater well pumps, the firm groundwater pumping capacity assumed that 20 percent of the wells could be out of service at any given time.

The pumping capacity criterion for the City, described previously in Chapter 6, requires the City's potable water system to have sufficient firm pumping capacity to meet the greater of either a maximum day demand with two simultaneous fire flow events[3] or a peak hour demand. In addition, sufficient firm treated water pumping capacity should be available to meet a maximum day demand condition.

Table 8-10 provides a comparison between the City's available firm pumping capacity and the required 2025 pumping capacity under different water demand conditions. The City's existing pumping facilities are sufficient to meet the 2025 pumping capacity requirements.

Table 8-11 provides a comparison between the City's available and proposed buildout firm pumping capacity for the different water demand scenarios. The proposed pumping facility improvements are based on:

- The necessity to deliver water from proposed storage facilities to the system.
- The necessity to provide treated water pumping capacity to meet buildout maximum day demands (e.g., JJWTP Clearwell #3 pumps).
- The necessity for localized pumping capacity to support system pressure during periods of high demand (fire flow and peak hour).

The pumping capacity analysis indicates that the City's existing and proposed firm booster and groundwater pumping capacity will be sufficient to meet the pumping capacity criterion for the buildout water service area during the governing demand scenario within each pressure zone. It should be noted that Zones 5 and 6 will provide water supply by gravity, rather than by pumping, to meet potable water demands during maximum day plus fire flow and peak hour demand conditions.

It is recommended that the City construct Zone 1 and Zone 2 booster pumps at the proposed Westside Tank. Although the proposed capacity of these booster pumps is more than required to meet the Zone 1 and 2 pumping capacity requirements, the capacity of these pumps is needed to maintain sufficient system pressure during periods of high demand (fire flow and peak hour) in the northwest quadrant of the City.

It is also recommended that the City install additional Zone 3 booster pumps on the proposed Clearwell #3. It is recommended that these pumps have a capacity of at least 1,500 gpm to provide operational flexibility for the Zone 3 BPS.

A new Zone 5 BPS (located at the JJWTP) and a Zone 6 BPS must also be constructed to supply water to Zones 5 and 6, respectively. The Zone 5 BPS was sized based on the Tracy Hills Water Study (RJA, December 2014). The Zone 6 BPS recommended in this WSMP Update is larger than previously recommended in the Tracy Hills Water Study because the proposed land use plan for Tracy Hills has changed since the study was conducted. Sizing of the Zone 6 BPS should be confirmed before development of Zone 6 begins.

[3] Two concurrent fire flow events were not simulated in Zones 4, 5 and 6 for the Tracy Hills development because these smaller pressure zones do not justify the use of two simultaneous fire flow events.

Table 8-10. Comparison of Available and Required Firm Pumping Capacity in 2025

Pump Station	Backup Power	Status	Firm Capacity[a], gpm	Total Firm Pumping Capacity from Supply Sources, gpm[b]	2025 Maximum Day Demand, gpm	Pumping Capacity from Supply Sources Surplus (Deficit), gpm[b]	Total Firm Pumping Capacity, gpm	2025 Maximum Day Demand with Fire Flow Event(s), gpm	2025 Peak Hour Demand, gpm	Pumping Capacity Surplus (Deficit), gpm[c]
Zones 1 and 2										
NEI	✓	Active	4,200	44,106	20,131	23,975	51,095	26,839[e]	34,340	16,755
Zone 1	✓	Active	12,000							
Lincoln Well	✓	Active	2,500							
Lewis Manor Well	✓	Inactive	--							
Park and Ride Well	✓	Active	2,000							
Ball Park Well	✓	Active	2,500							
Well 8		Active	--							
Linne	✓	Active	14,595							
Zone 2	✓	Active	13,300							
Well 1[d]	✓	Active	--							
Well 2[d]		Active	--							
Well 3[d]		Active	--							
Well 4[d]		Active	--							
Zone 3 and Ellis Reduced Zone										
Cordes	✓	Active	6,150	2,970	1,790	1,180	9,120	7,676[e]	3,053	1,330
Patterson Pass[f]	✓	Inactive	--							
Zone 3	✓	Active	2,970							
Zone 4										
Zone 4	✓	Active	2,450	2,450	629	1,821	8,350	2,095[g]	1,074	6,221
Tracy Hills At-Grade	✓	Under Construction	5,900							

(a) Firm booster pumping capacity was defined as the total booster pump station capacity with the largest pump out of service and firm groundwater pumping capacity assumed that 20 percent of the City's wells would be out of service (i.e., approximately two wells: one in Zone 1, and one at the JJWTP).

(b) Maximum day water demands should be met through firm treated water pumping capacity. The firm pumping capacity available from NEI and Linne is limited to 17 mgd based on the available water supply from the SCWSP.

(c) Pumping capacity surplus (deficit) is the total firm pumping capacity minus the greater of the maximum day demand with required fire flow event(s) or peak hour demand.

(d) Wells 1-4 located at JJWTP pump directly into the Chlorine Contact Basin or Clearwell #2; therefore, these wells do not provide additional pumping capacity to the system.

(e) Equal to maximum day demand plus a 1,500 gpm Single Family Residential fire flow and a simultaneous 4,500 gpm Industrial fire flow.

(f) Patterson Pass BPS is inactive since the Cordes BPS is now operating; therefore, it does not provide additional pumping capacity to the system.

(g) Equal to maximum day demand plus a 1,500 gpm Single Family Residential fire flow.

Table 8-11. Comparison of Available, Proposed, and Required Firm Pumping Capacity at Buildout

Pump Station		Backup Power	Status	Firm Capacity[a], gpm	Total Firm Pumping Capacity from Supply Sources, gpm[b]	Buildout Maximum Day Demand, gpm	Pumping Capacity from Supply Sources Surplus (Deficit), gpm[b]	Total Firm Pumping Capacity, gpm	Buildout Maximum Day Demand with Fire Flow Event(s), gpm	Buildout Peak Hour Demand, gpm	Pumping Capacity Surplus (Deficit), gpm[c]
Zones 1 and 2											
NEI		✓	Active	4,200	44,106	29,010	15,096	57,995	35,754[e]	49,487	8,508
Zone 1		✓	Active	12,000							
Lincoln Well		✓	Active	2,500							
Lewis Manor Well		✓	Inactive	--							
Park and Ride Well		✓	Active	2,000							
Ball Park Well		✓	Active	2,500							
Well 8			Active	--							
Linne		✓	Active	14,595							
Zone 2		✓	Active	13,300							
Well 1[d]		✓	Active	--							
Well 2[d]			Active	--							
Well 3[d]			Active	--							
Well 4[d]			Active	--							
Westside Ranch Tank Zone 1		✓	Proposed	4,500							
Westside Ranch Tank Zone 2		✓	Proposed	2,400							
Westside Ranch ASR Well		✓	Proposed	--							
Wainwright ASR Well		✓	Proposed	--							
Larsen Park ASR Well		✓	Proposed	--							
Zone 3 and Ellis Reduced Zone											
Cordes		✓	Active	6,150	4,470	3,435	1,035	10,620	9,590[e]	5,859	1,185
Patterson Pass[f]		✓	Inactive	--							
Zone 3[g]	Clearwell #2 Pumps	✓	Active	2,970							
	Clearwell #3 Pumps	✓	Proposed	1,500							
Ellis ASR Well		✓	Proposed	--							
Zone 4											
Zone 4[h]		✓	Active	3,675	3,675	2,018	1,657	11,875	6,432[i]	3,443	5,357
Tracy Hills At-Grade[h]		✓	Under Construction	8,200							
Zone 5											
Zone 5[j]		✓	Proposed	2,410	2,410	1,491[k]	919	NA			
Zone 6											
Zone 6[l]		✓	Proposed	550	550	526	24	NA			

(a) Firm booster pumping capacity was defined as the total booster pump station capacity with the largest pump out of service and firm groundwater pumping capacity assumed that 20 percent of the City's wells would be out of service (i.e., approximately two wells: one in Zone 1, and one at the JJWTP). It was assumed that the proposed ASR wells do not contribute to pumping capacity in a normal hydrologic year.

(b) Maximum day water demands should be met through firm treated water pumping capacity. The firm pumping capacity available from NEI and Linne is limited to 17 mgd based on the available water supply from the SCWSP.

(c) Pumping capacity surplus (deficit) is the total firm pumping capacity minus the greater of the maximum day demand with required fire flow event(s) or peak hour demand.

(d) Wells 1-4 located at JJWTP pump directly into the Chlorine Contact Basin or Clearwell #2; therefore, these wells do not provide additional pumping capacity to the system.

(e) Equal to maximum day demand plus a 1,500 gpm Single Family Residential fire flow and a simultaneous 4,500 gpm Industrial fire flow.

(f) Patterson Pass BPS is inactive since the Cordes BPS is now operating; therefore, it does not provide additional pumping capacity to the system.

(g) Zone 3 pumps on Clearwell #2 and Clearwell #3 are considered a single booster pump station for purposes of determining firm capacity.

(h) Buildout firm capacity includes the capacity of an additional pump to be installed after 2025.

(i) Equal to maximum day demand plus a 4,500 gpm Industrial fire flow.

(j) Based on previous recommendations from the Tracy Hills Water Study prepared by RJA (December 2014). Water demands from Zone 5 (formerly Tracy Hills Zone 4) and Zone 6 (formerly Tracy Hills Zone 5) will be served from a single Zone 5 BPS located at the JJWTP. Water supplied by the Zone 5 BPS will be subsequently boosted by the Zone 6 BPS to serve Zone 6 water demands.

(k) Equal to maximum day demands for Zone 5 and Zone 6.

(l) Recommended firm pump station capacity is larger than previously recommended in Tracy Hills Water Study prepared by RJA (December 2014). Required firm capacity should be confirmed before Zone 6 begins development.

8.4.4 Critical Supply Facilities

All critical pumping facilities should be equipped with an on-site, emergency backup power generator to provide pumping capacity during a power outage. Critical pumping facilities are defined as those facilities that provide service to pressure zone(s) and/or service area(s) which do not have sufficient emergency storage, and that meet the following criteria:

- The largest pumping facility that provides water to a particular pressure zone and/or service area,
- A facility that provides the sole source of water to single or multiple pressure zones and/or service areas,
- A pumping facility that provides water from a supply turnout, or
- A pumping facility that provides water from key groundwater supply wells (depends on capacity, quality, and location).

As shown previously in Table 8-11, most of the City's existing pumping facilities have on-site emergency backup power installed, except for Wells 2 through 4 and Well 8[4]. As shown in Table 8-11, proposed future pumping facilities for the buildout potable water system are assumed to have an on-site backup power generator installed to improve supply reliability.

8.4.5 SCADA System Improvements

As stated in Chapter 7, the City does not have SCADA installed on PRS #1-#6. As the City's water system continues to grow and serve larger water demands, the ability to operate the system efficiently and properly regulate flow between zones will be essential. PRS #1-#6 can provide a significant amount of water supply from Zone 2 to Zone 1 and should be monitored to provide operators with complete real-time system operations data. The addition of SCADA system monitoring at PRS #1-#6 would provide operators with the ability to operate the City's water system more efficiently between the use of the Zone 1 BPS and the pressure regulating stations to maintain pressures in Zone 1. The addition of SCADA system monitoring to PRS #1-#6 would also provide the ability to create diurnal curves that are specific to each zone, which will help provide a better understanding of water demand patterns within each zone. Therefore, it is recommended that SCADA system monitoring of flow and pressure be installed at PRS #1-#6 to provide operators with additional understanding and flexibility in system operations.

Similarly, SCADA improvements at Well 8 to allow remote operation is also a recommended improvement to provide additional operational flexibility as the system continues to grow.

All new booster pump stations, storage tanks, groundwater wells, and PRVs should be equipped with SCADA for remote monitoring and operation.

[4] Well 8 currently has a plug-in adapter installed to allow interconnection to a portable generator. On-site backup power is not recommended due to site constraints.

8.4.6 Update of Future System Facilities in the Hydraulic Model

Facilities recommended based on the future potable water system facility evaluation were incorporated into the existing hydraulic model (including existing system improvements described in Chapter 7) to evaluate the performance of the proposed future potable water system. Major transmission pipelines were also added to distribute water to new demand areas. In addition, some smaller distribution pipelines were added to provide additional detail and system looping. The preliminary locations and sizes of some of the future facilities and pipelines were based on the following previously prepared reports/technical memoranda and/or data provided by the developers:

- Draft Peer Review and Hydraulic Evaluation for Tracy Hills Phase 1B and 1C (May 22, 2019), prepared by West Yost Associates.
- Tracy Hills Water Study Technical Memorandum (December 5, 2014), prepared by Ruggeri-Jensen-Azar.
- Water System Evaluation for the City of Tracy's Initial Pressure Zone 3 Area (June 3, 2013), prepared by West Yost Associates.
- Ellis Specific Plan Water System Analysis - Phase 1 (August 13, 2015), prepared by West Yost Associates.
- Hydraulic Evaluation of Ellis Specific Plan Phase 2 – The Gardens (December 9, 2016), prepared by West Yost Associates.
- Draft Hydraulic Evaluation of Ellis Specific Plan Phase 3 – Town and Country (July 11, 2019), prepared by West Yost Associates.
- Design Recommendations for Lammers Road Pipeline (September 25, 2019), prepared by West Yost Associates.
- Hydraulic Evaluation of International Park of Commerce (IPC) Building 25 (July 28, 2017), prepared by West Yost Associates.
- Hydraulic Evaluation of International Park of Commerce (IPC) Buildings 9, 10, and 14 (May 3, 2018), prepared by West Yost Associates.
- Hydraulic Evaluation of Valpico and MacDonald Apartments (July 16, 2012), prepared by West Yost Associates.
- Hydraulic Evaluation of Tracy Village Specific Plan (February 16, 2018), prepared by West Yost Associates.
- Hydraulic Evaluation of Avenues Specific Plan (April 30, 2018), prepared by West Yost Associates.
- Hydraulic Evaluation of South Lammers Road Development (May 20, 2015), prepared by West Yost Associates.
- Berg Road Properties Development Water Distribution System Analysis (January 14, 2016), prepared by BlackWater Consulting Engineers, Inc.

- Improvement Plans for Kagehiro Phase 1 and Kagehiro Phase 2 (received on September 3, 2019) prepared by VVH Consulting Engineers.
- Water Exhibit of International Park of Commerce for Prologis (received June 2018) provided by Kier and Wright.

The proposed locations and sizing of facilities and pipelines described in the documents listed above were incorporated into the future potable water system hydraulic model. Locations of other future facilities and pipelines were based on the 2012 WSMP and recommendations from City staff. The 2012 WSMP facilities were modified as needed to account for existing potable water system facilities constructed since the 2012 WSMP, updated planning data, and the updated projected future water demands.

It should be noted that the elevations of new junctions that have been added into the hydraulic model were assigned based on their spatial location and the closest corresponding elevation contour.[5] These elevations may not accurately represent the actual elevation of water services since grading will typically occur during the construction of a new development project. However, these preliminary junction elevations are the best estimates of the proposed service elevations at this time. As future development projects are constructed, service elevations for each future development should be confirmed to correspond to the service elevation ranges developed for each pressure zone, as identified in Table 8-1, to meet the minimum and maximum system pressure criteria.

In addition to proposed future facilities, some existing facilities which were not included in the existing system hydraulic model (refer to *Section 7.3.2* for more information) were added to the future water system model. These facilities include:

- Zone 4 infrastructure, including the Zone 4 BPS, Zone 4 PRS, and major transmission and distribution pipelines
- Northington Drive PRV
- Some pipelines in the IPC development
- Some pipelines in the Ellis Specific Plan development

The Tracy Hills At-Grade Tank and BPS, which has been designed and is currently under construction, was also included in the future water system hydraulic model.

[5] Digital topology information was extracted as a GIS shapefile using the software program TopoDepot®. TopoDepot® provides elevation contours generated from the USGS National Elevation Database Digital Elevation Model.

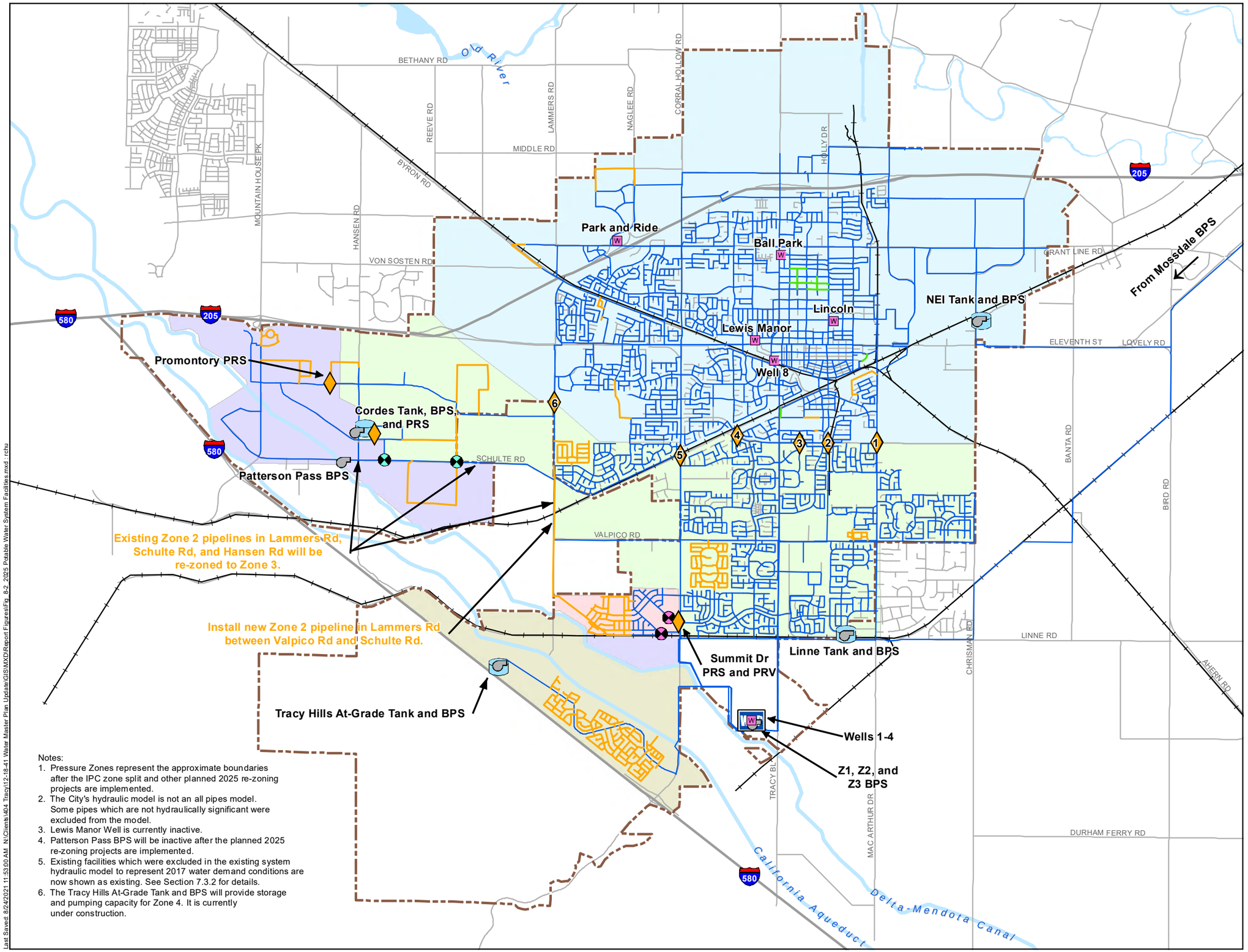
To provide emergency and/or peaking water supply between pressure zones, the following future interconnections are recommended and were incorporated into the hydraulic model to allow for the flow of water between pressure zones[6]:

- Westside PRS – Supplies water from Zone 2 to Zone 1
- Avenues PRV – Supplies water from the Ellis Reduced Zone to Zone 2
- One (1) additional Ellis PRV – Supplies water from Zone 3 to the Ellis Reduced Zone
- Zone 4 PRV – Supplies water from Zone 5 to Zone 4
- Two (2) Zone 5 PRVs – Supply water from Zone 6 to Zone 5

All of the facilities discussed above were included in the buildout water system hydraulic model, however, not all future facilities were needed to serve 2025 demands. The 2025 water system model only includes future pipelines in areas expected to develop by 2025 (refer to Chapter 3 and Appendix A for details). None of the recommended future tanks, pump stations, or interconnections between pressure zones were included in the 2025 water system model. Figure 8-2 illustrates the locations of the proposed 2025 facilities and pipeline alignments.

Figure 8-3 illustrates the locations of the proposed buildout facilities and pipeline alignments. Preliminary pipeline sizes are not shown on Figure 8-2, as they will be refined based on hydraulic evaluations discussed below in *Section 8.5 Future Potable Water System Performance Evaluation*. Recommended pipeline sizes are presented in *Section 8.6 Summary of Recommended Future Potable Water System Improvements*.

[6] Pressure Regulating Stations (PRS) contain a combination of one pressure sustaining valve (PSV) and one pressure reducing valve (PRV) to control the flow of water between pressure zones.



Notes:
1. Pressure Zones represent the approximate boundaries after the IPC zone split and other planned 2025 re-zoning projects are implemented.
2. The City's hydraulic model is not an all pipes model. Some pipes which are not hydraulically significant were excluded from the model.
3. Lewis Manor Well is currently inactive.
4. Patterson Pass BPS will be inactive after the planned 2025 re-zoning projects are implemented.
5. Existing facilities which were excluded in the existing system hydraulic model to represent 2017 water demand conditions are now shown as existing. See Section 7.3.2 for details.
6. The Tracy Hills At-Grade Tank and BPS will provide storage and pumping capacity for Zone 4. It is currently under construction.

N

0 2,500 5,000

Scale in Feet

Symbology

Proposed 2025 Facilities

- Proposed 2025 Pressure Reducing Valve
- Proposed 2025 System Pipeline

Existing Facilities

- Existing Pressure Regulating Station
- Existing Pressure Reducing Valve
- Existing Booster Pump Station
- Existing Groundwater Well
- Existing Storage Tank
- WTP John Jones Water Treatment Plant
- Existing System Pipeline
- Proposed Existing System Pipeline CIP

Pressure Zone

- Zone 1
- Zone 2
- Zone 3
- Ellis Reduced Zone
- Zone 4
- Sphere of Influence

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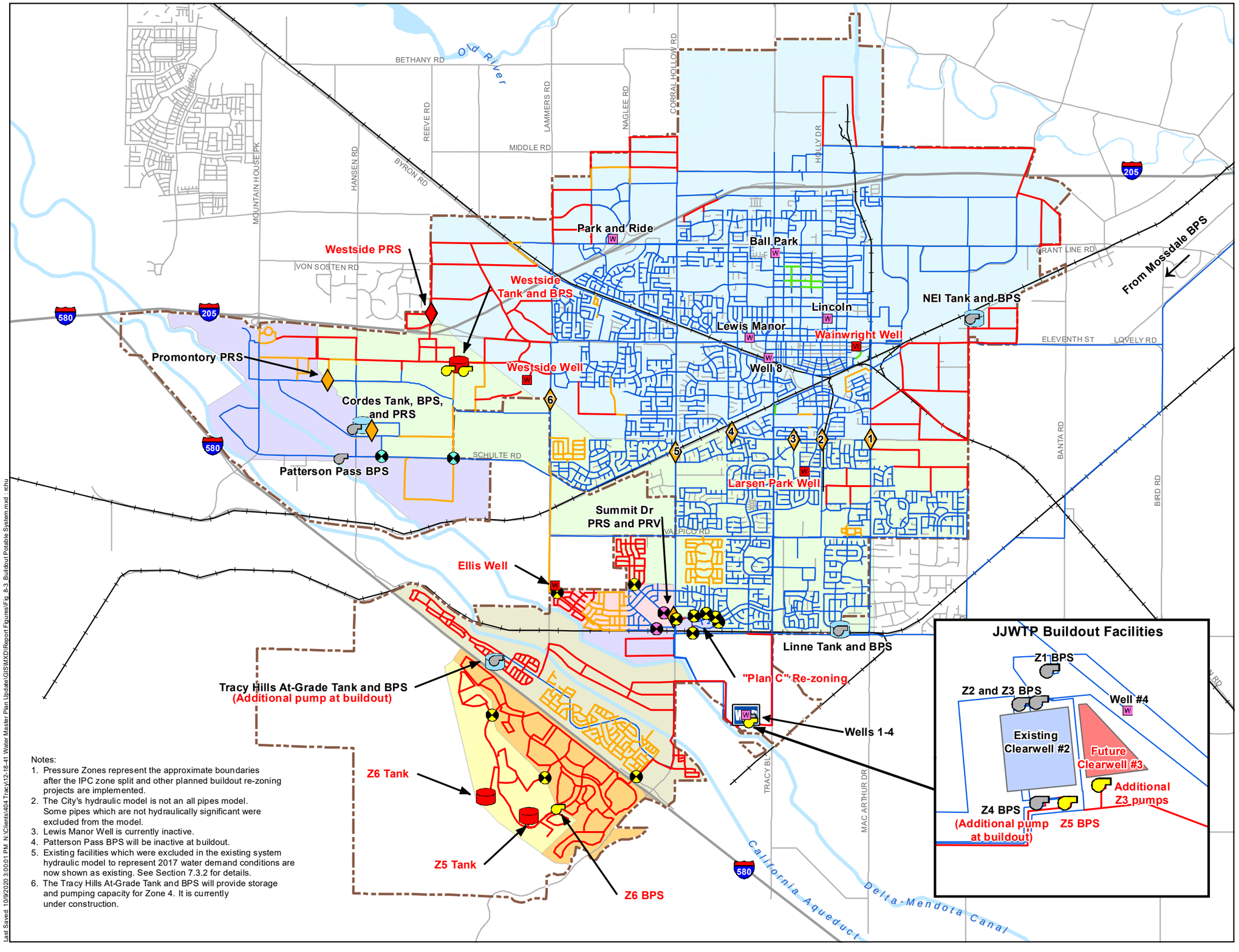
WEST YOST ASSOCIATES

Figure 8-2

2025 Potable Water System Facilities

City of Tracy
Water System Master Plan Update

Last Saved: 8/24/2021 11:53:00 AM N:\Clients\404 Tracy\12-18-41 Water Master Plan Update\GIS\MXD\Report Figures\Fig. 8-2_2025 Potable Water System Facilities.mxd - rchu



Notes:
1. Pressure Zones represent the approximate boundaries after the IPC zone split and other planned buildout re-zoning projects are implemented.
2. The City's hydraulic model is not an all pipes model. Some pipes which are not hydraulically significant were excluded from the model.
3. Lewis Manor Well is currently inactive.
4. Patterson Pass BPS will be inactive at buildout.
5. Existing facilities which were excluded in the existing system hydraulic model to represent 2017 water demand conditions are now shown as existing. See Section 7.3.2 for details.
6. The Tracy Hills At-Grade Tank and BPS will provide storage and pumping capacity for Zone 4. It is currently under construction.

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N

0 2,500 5,000

Scale in Feet

Symbology

Proposed Buildout Facilities

- Buildout Pressure Regulating Station
- Buildout Pressure Reducing Valve
- Buildout Booster Pump Station
- Buildout Groundwater Well
- Buildout Storage Tank
- Buildout System Pipeline

Existing and 2025 Facilities

- Existing Pressure Regulating Station
- Existing Pressure Reducing Valve
- Proposed 2025 Pressure Reducing Valve
- Existing Booster Pump Station
- Existing Groundwater Well
- Existing Storage Tank
- John Jones Water Treatment Plant
- Existing System Pipeline
- Proposed 2025 System Pipeline
- Proposed Existing System Pipeline CIP

Pressure Zone

- Zone 1
- Zone 2
- Zone 3
- Ellis Reduced Zone
- Zone 4
- Zone 5
- Zone 6
- Sphere of Influence

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Figure 8-3

Buildout Potable Water System Facilities

City of Tracy
Water System Master Plan Update

8.5 FUTURE POTABLE WATER SYSTEM PERFORMANCE EVALUATION

To evaluate the performance of the City's proposed future potable water system, additional projected potable water demands were first allocated into the updated future system hydraulic model (see Tables 8-2 through 8-4). This updated hydraulic model was then used to evaluate the City's 2025 and buildout potable water backbone transmission and distribution systems and their ability to meet the City's recommended performance and operational criteria under future maximum day demand plus fire flow and peak hour demand scenarios.

The performance criteria recommended for and results of the future potable water backbone transmission and distribution system evaluation are discussed below. Recommendations for supporting projected future potable water demands and addressing any deficiencies identified within the future potable water backbone transmission and distribution system are summarized in *Section 8.6 Summary of Recommended Future Potable Water System Improvements*.

8.5.1 Future Water System Performance Criteria

Steady state hydraulic analyses using the updated future potable water system hydraulic model were conducted to help identify areas of the future potable water system that do not meet the recommended system performance criteria as presented previously in Chapter 6. The results of the future potable water system evaluation are presented below for the following potable water demand scenarios:

- Peak Hour Demand—A peak hour flow condition was simulated for the future water distribution facilities to evaluate their capability to meet a peak hour demand scenario. Peak hour demands are met by the combined supply from treated surface water, storage tanks, and groundwater.
- Maximum Day Demand plus Fire Flow—To evaluate the future potable water system under the maximum day demand plus fire flow scenario, individual fire flow demands were first assigned and simulated at various locations within the City's water service area. InfoWater's "*Available Fire Flow Analysis*" tool was used to determine the available fire flow while meeting the maximum day demand plus fire flow performance criteria. Additional fire flow simulations were also performed to simulate a condition equal to a maximum day demand with two concurrent fire flow events in the larger pressure zones. Maximum day plus fire flow demands are met by the combined supply from treated surface water, storage tanks, and groundwater.

The performance criteria and results for each scenario are discussed in more detail below.

8.5.1.1 Peak Hour Demand Scenario

As shown in Tables 8-2 and 8-3, the peak hour demands for the 2025 and buildout water service areas were calculated to be 38,467 gpm (55.4 mgd) and 61,333 gpm (88.3 mgd), respectively. Peak hour demand represents a peaking factor of 2.9 times the average day demand. During a peak hour demand scenario, a minimum pressure of 40 psi must be maintained throughout the water system. In addition, maximum head loss per thousand feet of distribution main should not exceed 7 ft/kft and maximum velocities should not exceed 8 fps. For transmission mains, maximum head loss per

thousand feet of transmission main should not exceed 3 ft/kft and maximum velocities should not exceed 6 fps. Details of the system pressures and pipeline characteristics as simulated in the hydraulic model under the peak hour demand scenario are discussed below.

8.5.1.2 Maximum Day Demand plus Fire Flow Scenario

As shown in Tables 8-2 and 8-3, the maximum day demands for the 2025 and buildout water service areas were calculated to be 22,550 gpm (32.5 mgd) and 35,954 gpm (51.8 mgd), respectively. Maximum day demand represents a peaking factor of 1.7 times the average day demand. Fire flow demands were assigned and simulated at various locations within the City's water service area to determine if the minimum residual pressure criterion of 20 psi could be met during a maximum day demand plus fire flow scenario. Fire flow demands in future development areas were assigned based on proposed land use, and are summarized below in Table 8-12.

Table 8-12. Recommended Fire Flow Requirements[a]

Land Use Category	Fire Flow, gpm	Duration, hours
Single Family Residential[b]	1,500	2
Multi-Family Residential[c]	2,500	2
Commercial/Office[d]	3,500[e]	4
Industrial	4,500[e]	4
Institutional[f]	4,500[e]	4

(a) Specific fire flow requirements were determined from Table B105.1 of the 2016 CFC, and depend on construction type and fire flow calculation area. Non-residential fire flow requirements are based on the assumption that an automatic sprinkler system has been installed. See Table 6-1 for further explanation of how the fire flow requirements were developed.
(b) Includes Very Low and Low Density Residential land uses.
(c) Includes Medium and High Density Residential land uses.
(d) Includes Commercial, Office, Downtown, and Village Center land uses.
(e) Fire flow includes a 500 gpm demand for on-site sprinkler flow, which is not included in the recommended fire flow storage volume.
(f) Includes Medical, Public Facilities, School, Airport, Church, and Cemetery land uses.

The City's water system should also have the capability to meet a system demand condition equal to the occurrence of a maximum day demand with two concurrent fire flow events in the larger pressure zones (Zone 1, Zone 2, and Zone 3). It is assumed that the two fire flow events will consist of one smaller single family residential fire flow combined with another larger industrial fire flow. This conservative assumption of two simultaneous fire flow demands will help stress the City's water system, and determine if the future water system can provide reliable service during high demand conditions. Consequently, two concurrent fire flow demands were simulated at various locations within the City's water service area during a maximum day demand condition to determine if the minimum residual pressure criterion of 20 psi could be met during simultaneous fire flow events.

8.5.2 Recommended Improvements Criteria

The performance criteria described above was used to evaluate the future potable water system during peak hour demand and maximum day demand plus fire flow scenarios. The future potable water system is expected to deliver peak hour flow and maximum day demand plus fire flow within the acceptable pressure, velocity and head loss ranges as identified in the performance criteria presented in Chapter 6. However, the system was evaluated using pressure as the primary criterion. If necessary, recommended improvements needed to comply with the performance criteria were added to the future potable water system to fix any deficiencies found and are discussed below.

8.5.3 2025 Water System Evaluation Results

The results from the 2025 hydraulic model for the peak hour demand and maximum day demand plus fire flow analyses are presented below.

8.5.3.1 2025 Peak Hour Demand Scenario

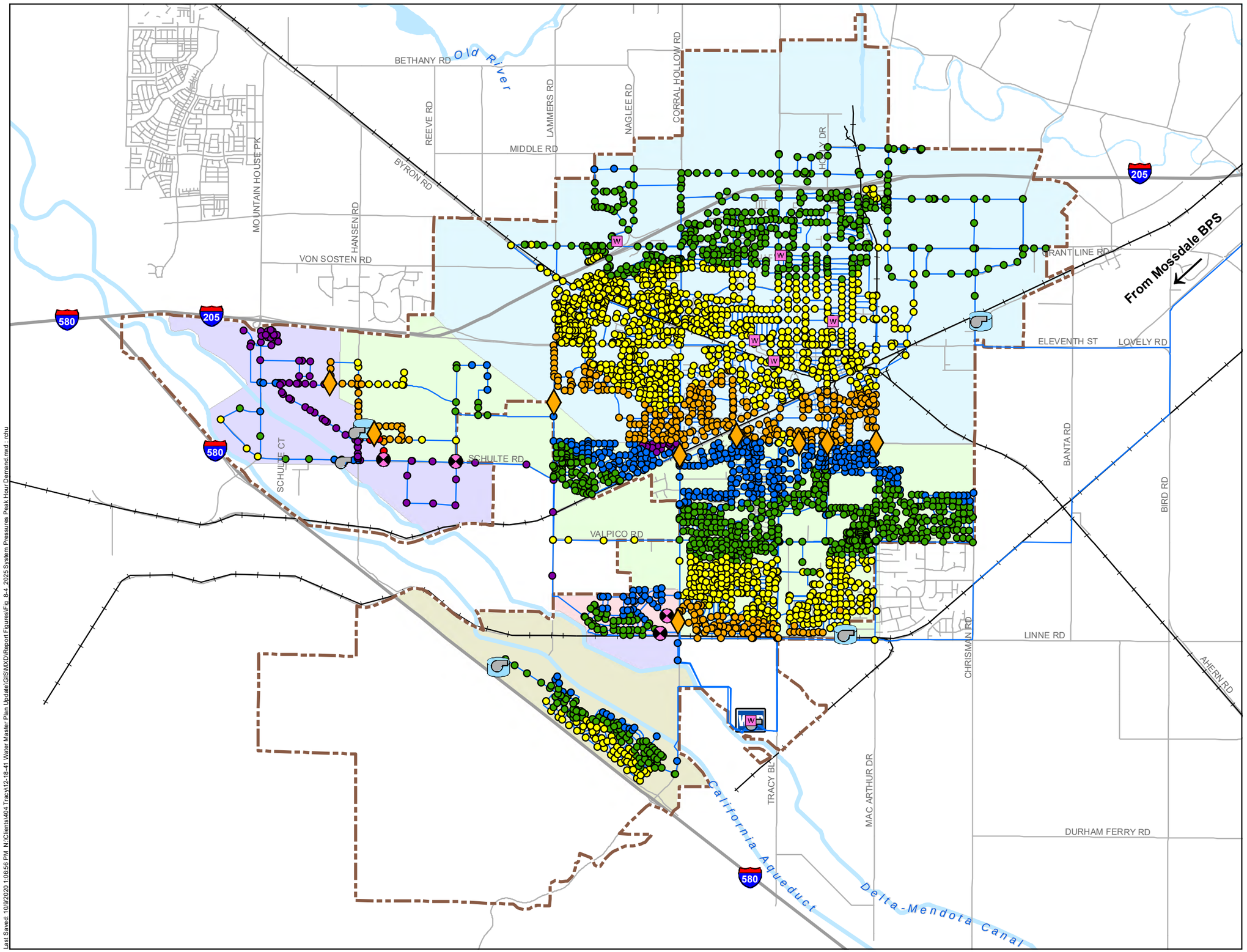
During a peak hour demand scenario, results indicate that the 2025 potable water system could adequately deliver peak hour demands to meet the City's minimum pressure criterion of 40 psi at all existing and future service locations as illustrated on Figure 8-4. Under this scenario, system pressures at service locations ranged from 40 to 113 psi. It should be noted that, per the California Plumbing Code, any individual service connection pressure exceeding 80 psi will require the installation of an individual PRV. As discussed previously, new junction elevations in the hydraulic model may not accurately represent the actual elevation of water services since grading will typically occur during the construction of a new development. Therefore, the system pressures simulated by the hydraulic model are best estimates of the proposed service pressures at this time. It is recommended that as the water system infrastructure for future development projects are designed, the proposed service elevations for each future development project should correspond to the service elevation ranges developed for each pressure zone (see Table 8-1) and that additional hydraulic analyses should be performed to confirm that the recommended minimum and maximum system pressure criteria can be met.

As illustrated on Figure 8-5, there is one location within the 2025 system where the distribution system pipelines did not meet the maximum velocity criterion of 8 fps during a peak hour demand scenario. The following list details pipelines in the 2025 potable water system that exceeded the maximum velocity criterion and summarizes any recommended improvements.

- The existing 12-inch diameter distribution pipelines which cross the railroad tracks between Sixth Street and Tracy Boulevard east of the 36-inch diameter transmission main tie-in had a velocity of 11.4 fps.

  Recommendation:

  It is recommended that the existing 12-inch diameter pipelines located between Sixth Street and Tracy Boulevard east of the 36-inch diameter transmission tie-in be replaced with a new 18-inch diameter pipeline. The recommended diameter of the new pipeline is sized to accommodate buildout demands.



N

0 2,500 5,000

Scale in Feet

Symbology

Peak Hour Pressure

- Less than 40 psi
- 40 psi to 50 psi
- 50 psi to 60 psi
- 60 psi to 70 psi
- 70 psi to 80 psi
- Greater than 80 psi

- Pressure Regulating Station
- Pressure Reducing Valve
- Booster Pump Station
- Groundwater Well
- Storage Tank
- WTP John Jones Water Treatment Plant
- Pipeline

Pressure Zone

- Zone 1
- Zone 2
- Zone 3
- Ellis Reduced Zone
- Zone 4
- Sphere of Influence

Notes:

1. The City's hydraulic model is not an all pipes model. Some pipes which are not hydraulically significant were excluded from the model.
2. Per the California Plumbing Code, services which experience pressures exceeding 80 psi are required to be fitted with a pressure reducing valve.

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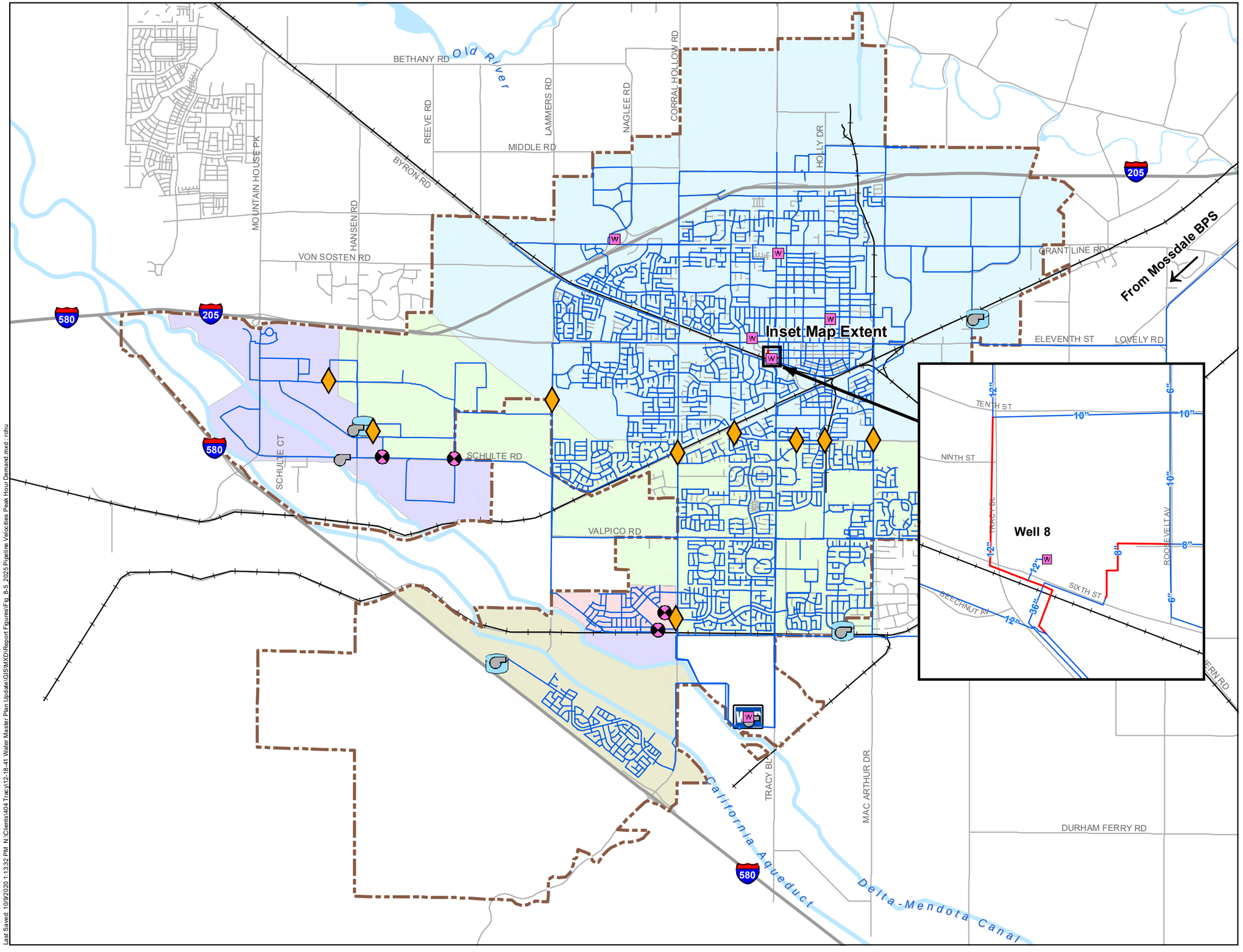
WEST YOST ASSOCIATES

Figure 8-4

2025 System Pressures Peak Hour Demand

City of Tracy
Water System Master Plan Update

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Symbology

Pipeline Diameter ≥ 18-inches

- Velocity > 6 fps
- Velocity ≤ 6 fps

Pipeline Diameter < 18-inches

- Velocity > 8 fps
- Velocity ≤ 8 fps
- Pressure Regulating Station
- Pressure Reducing Valve
- Booster Pump Station
- Groundwater Well
- Storage Tank
- WTP John Jones Water Treatment Plant

Pressure Zone

- Zone 1
- Zone 2
- Zone 3
- Ellis Reduced Zone
- Zone 4
- Sphere of Influence

Notes:
1. The City's hydraulic model is not an all pipes model. Some pipes which are not hydraulically significant were excluded from the model.

TRACY

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Figure 8-5

2025 Pipeline Velocities Peak Hour Demand

City of Tracy
Water System Master Plan Update

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- The existing 12-inch diameter distribution pipelines located in Sixth Street west of the 36-inch diameter transmission main tie-in and in Tracy Boulevard between Sixth Street and Tenth Street, had a velocity of 9.4 fps.

  Recommendation:

  It is recommended that the existing 12-inch diameter pipeline in Sixth Street west of the 36-inch diameter transmission main tie-in, the 12-inch diameter pipeline in Tracy Boulevard between Sixth Street and Eleventh Street, and a 40 ft section of existing 12-inch diameter pipeline in Eleventh Street, be replaced with new 24-inch diameter pipeline. The recommended diameter of the new pipeline is sized to accommodate buildout demands.

8.5.3.2 2025 Maximum Day Demand plus Fire Flow Scenario

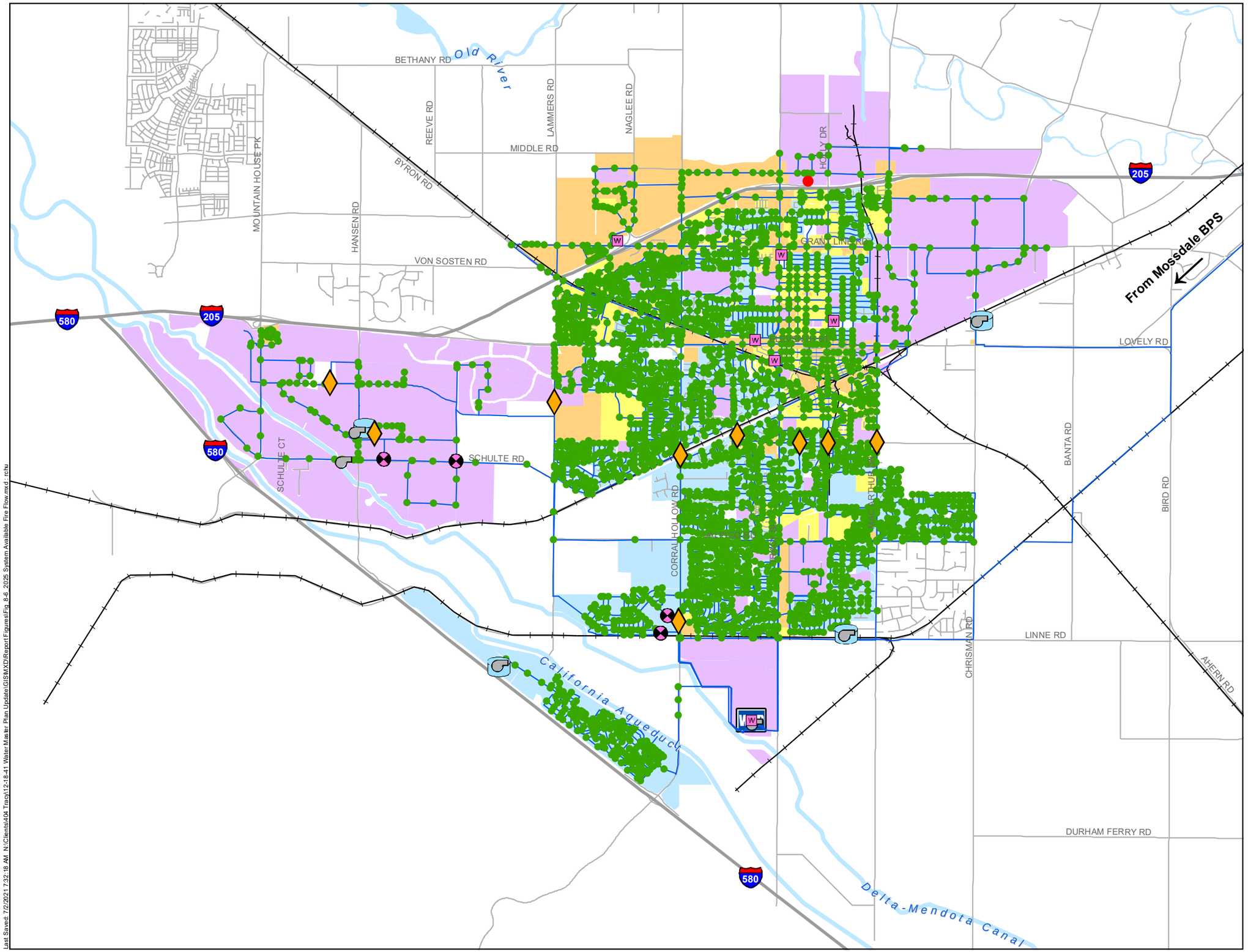
Fire flow demands were assigned based on the fire flow requirements summarized in Table 8-12 and simulated at various locations within the City's 2025 water service area. InfoWater's "*Available Fire Flow Analysis*" tool was used to determine the available fire flow (while meeting the maximum day demand plus fire flow minimum residual pressure of 20 psi and the maximum velocity performance criteria in proposed pipelines of 12 fps) at each fire flow junction within the 2025 water system during a maximum day demand scenario. Figure 8-6 illustrates the results of the 2025 maximum day plus fire flow evaluation. With the exception of the hydrant located at the southern end of Rhonda Way (discussed in Chapter 7), results indicate that all evaluated locations within the model were able to meet the minimum fire flow requirements.

Six additional fire flow simulations were performed within the 2025 system hydraulic model to simulate a condition equal to a maximum day demand with two concurrent fire flow events. Figure 8-7 illustrates the locations of the additional fire flow simulations. Locations were selected within each pressure zone based on the existing and proposed land use designations and spatial distance from supply sources to stress the City's water system. As summarized in Table 8-13, results from the hydraulic model indicate that all six of the concurrent fire flow simulations met the minimum residual pressure criterion of 20 psi.

Table 8-13. Results of Additional Fire Flow Simulations for 2025 System

Pressure Zone	Location #	Fire Flow Demand, gpm[(a)]	Residual Pressure, psi
Zone 1	1	1,500	48
		4,500	30
	2	1,500	50
		4,500	44
Zone 2	3	1,500	67
		4,500	52
	4	1,500	66
		4,500	33
	5	1,500	60
		4,500	26
Zone 3	6	1,500	48
		4,500	31

(a) It is assumed that the two concurrent fire flow events will consist of one smaller Single Family Residential fire flow combined with another larger Industrial fire flow.



N

0 2,500 5,000

Scale in Feet

Symbology

Available Fire Flow

- Does Not Meet Requirement
- Meets Requirement
- Pressure Regulating Station
- Pressure Reducing Valve
- Booster Pump Station
- Groundwater Well
- Storage Tank
- WTP John Jones Water Treatment Plant
- Pipeline

Fire Flow Requirement

- 1,500 gpm
- 2,500 gpm
- 3,500 gpm
- 4,500 gpm

Notes:

1. The available fire flow shown is the maximum flow available while maintaining 20 psi residual system pressure and velocities of less than 12 fps in proposed pipelines.
2. The City's hydraulic model is not an all pipes model. Some pipes which are not hydraulically significant were excluded from the model.

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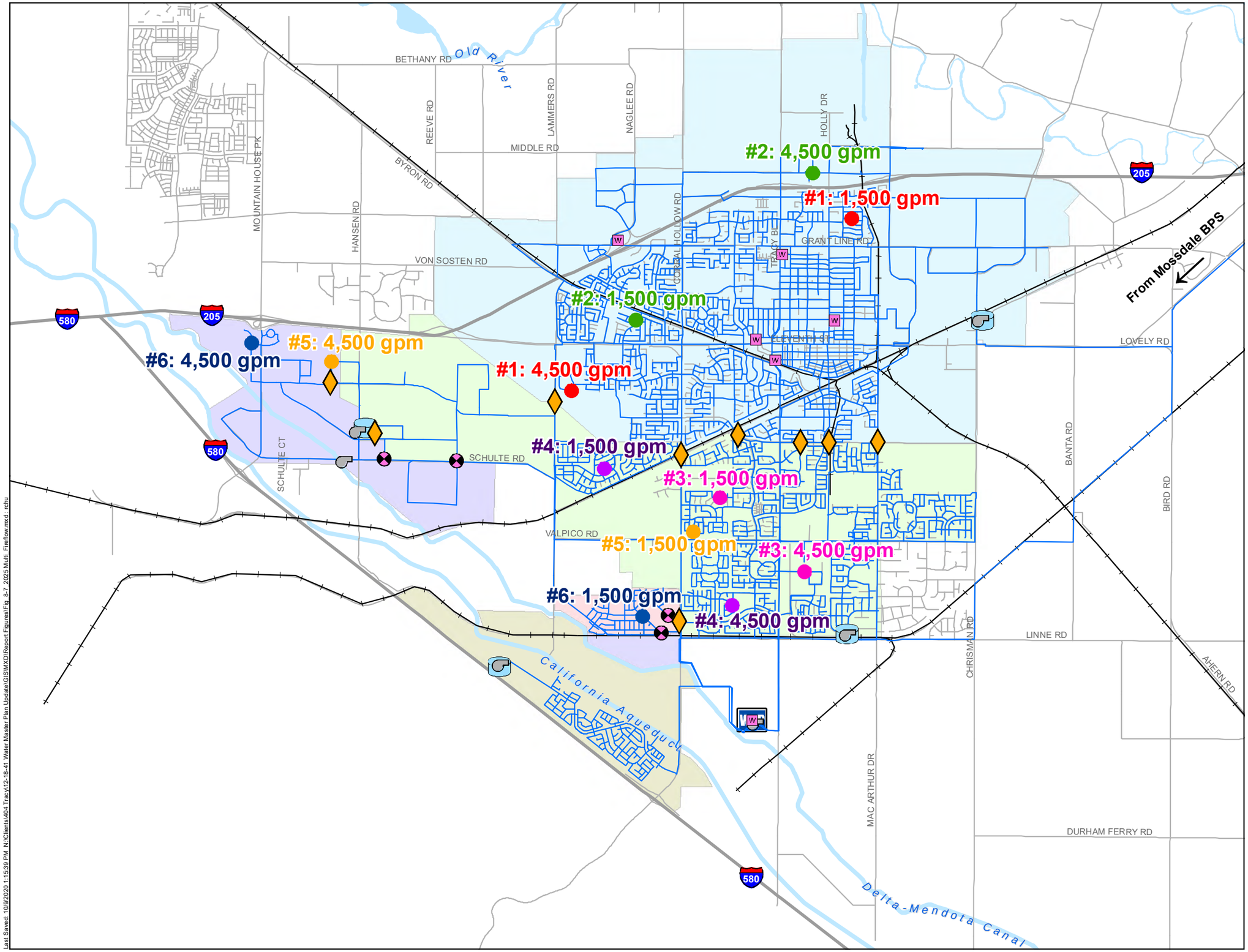
WEST YOST ASSOCIATES

Figure 8-6

2025 System Available Fire Flow

City of Tracy
Water System Master Plan Update

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0 2,500 5,000

Scale in Feet

Symbology

Simultaneous Fire Flows

- Location #1
- Location #2
- Location #3
- Location #4
- Location #5
- Location #6

- Pressure Regulating Station
- Pressure Reducing Valve
- Booster Pump Station
- Groundwater Well
- Storage Tank
- WTP John Jones Water Treatment Plant
- Pipeline

Pressure Zone

- Zone 1
- Zone 2
- Zone 3
- Ellis Reduced Zone
- Zone 4

Notes:
1. The City's hydraulic model is not an all pipes model. Some pipes which are not hydraulically significant were excluded from the model.

Figure 8-7

2025 System Locations of Additional Simultaneous Fire Flow Simulations

City of Tracy
Water System Master Plan Update

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8.5.4 Buildout Water System Evaluation Results

The results from the buildout hydraulic model for the peak hour demand and maximum day demand plus fire flow analyses are presented below. The results assume that the recommended 2025 pipeline replacements discussed in *Section 8.5.3.1 2025 Peak Hour Demand Scenario* are constructed before buildout.

8.5.4.1 Buildout Peak Hour Demand Scenario

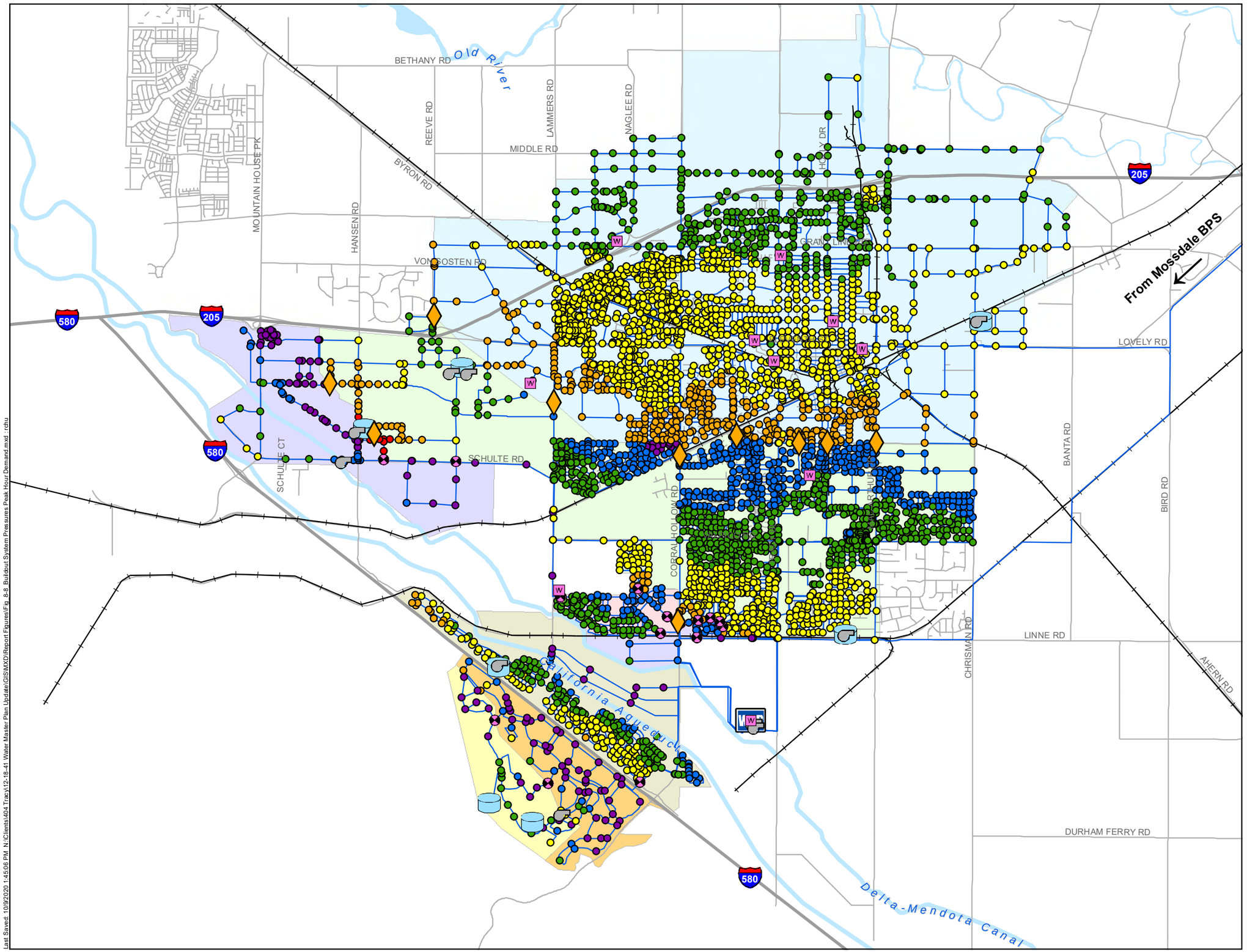
During a peak hour demand scenario, results indicate that the buildout potable water system could adequately deliver peak hour demands to meet the City's minimum pressure criterion of 40 psi at all existing and future service locations as illustrated on Figure 8-8. Under this scenario, system pressures at service locations ranged from 40 to 118 psi. It should be noted that, per the California Plumbing Code, any individual service connection pressure exceeding 80 psi will require the installation of an individual PRV. As discussed previously, new junction elevations in the hydraulic model may not accurately represent the actual elevation of water services since grading will typically occur during the construction of a new development. Therefore, the system pressures simulated by the hydraulic model are best estimates of the proposed service pressures at this time. It is recommended that as the water system infrastructure for future development projects are designed, the proposed service elevations for each future development project should correspond to the service elevation ranges developed for each pressure zone (see Table 8-1) and that additional hydraulic analyses should be performed to confirm that the recommended minimum and maximum system pressure criteria can be met.

As illustrated on Figure 8-9, there is one location within the buildout system where the transmission system pipelines did not meet the maximum velocity criterion of 6 fps during a peak hour demand scenario. The following list details pipelines in the buildout potable water system that exceeded the maximum velocity criterion and summarizes any recommended improvements.

- The existing 18-inch diameter transmission pipeline in Tracy Boulevard between Linne Road and Windsong Drive had velocities ranging from 6.0 fps to 6.5 fps.

  Recommendation:

  No mitigation is recommended for the 18-inch diameter pipeline in Tracy Boulevard because the simulated velocities are only slightly higher than the maximum criterion of 6 fps. In addition, upsizing this pipeline does not provide a significant improvement in system pressures.



N

0 2,500 5,000

Scale in Feet

Symbology

Peak Hour Pressure

- Less than 40 psi
- 40 psi to 50 psi
- 50 psi to 60 psi
- 60 psi to 70 psi
- 70 psi to 80 psi
- Greater than 80 psi

- Pressure Regulating Station
- Pressure Reducing Valve
- Booster Pump Station
- Groundwater Well
- Storage Tank
- WTP John Jones Water Treatment Plant
- Pipeline

Pressure Zone

- Zone 1
- Zone 2
- Zone 3
- Ellis Reduced Zone
- Zone 4
- Zone 5
- Zone 6

Notes:

1. The City's hydraulic model is not an all pipes model. Some pipes which are not hydraulically significant were excluded from the model.
2. Per the California Plumbing Code, services which experience pressures exceeding 80 psi are required to be fitted with a pressure reducing valve.

TRACY

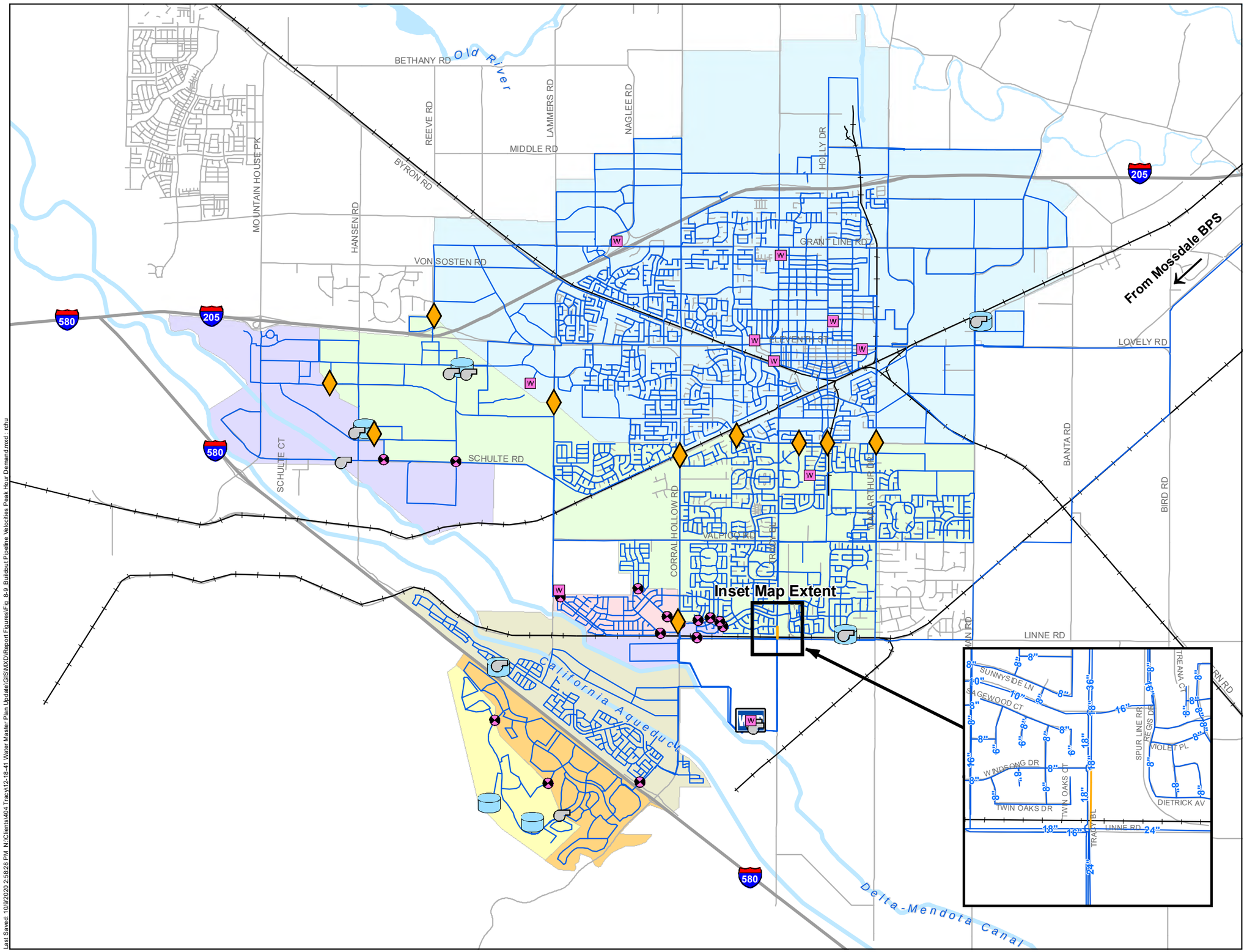
WEST YOST ASSOCIATES

Figure 8-8

Buildout System Pressures Peak Hour Demand

City of Tracy
Water System Master Plan Update

Last Saved: 10/9/2020 1:45:06 PM N:\Clients\404 Tracy\12-18-41 Water Master Plan Update\GIS\MXD\Report Figures\Fig. 8-8 Buildout System Pressures Peak Hour Demand.mxd - rdhu



Notes:
1. The City's hydraulic model is not an all pipes model. Some pipes which are not hydraulically significant were excluded from the model.

TRACY

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Figure 8-9

Buildout Pipeline Velocities Peak Hour Demand

City of Tracy
Water System Master Plan Update

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8.5.4.2 Buildout Maximum Day Demand plus Fire Flow Scenario

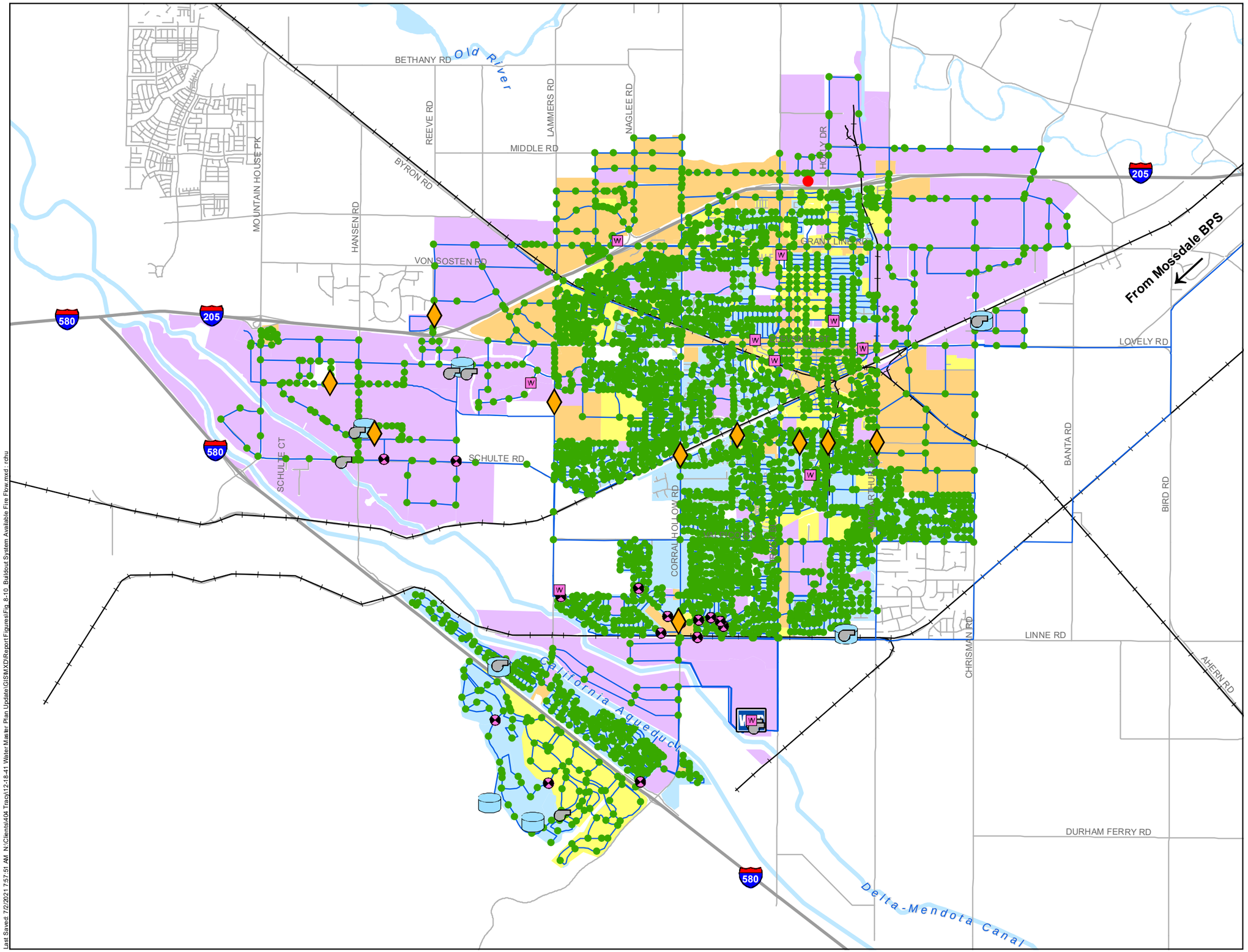
Fire flow demands were assigned based the fire flow requirements summarized in Table 8-12 and simulated at various locations within the City's buildout water service area. InfoWater's "*Available Fire Flow Analysis*" tool was used to determine the available fire flow (while meeting the maximum day demand plus fire flow minimum residual pressure of 20 psi and the maximum velocity performance criteria in proposed pipelines of 12 fps) at each fire flow junction within the buildout water system during a maximum day demand scenario. Figure 8-10 illustrates the results of the buildout maximum day plus fire flow evaluation. With the exception of the hydrant located at the southern end of Rhonda Way (discussed in Chapter 7), results indicate that all evaluated locations within the model were able to meet the minimum fire flow requirements.

Seven additional fire flow simulations were performed within the buildout system hydraulic model to simulate a condition equal to a maximum day demand with two concurrent fire flow events. Figure 8-11 illustrates the locations of the additional fire flow simulations. Locations were selected within each pressure zone based on the existing and proposed land use designations and spatial distance from supply sources to stress the City's water system. As summarized in Table 8-14, results from the hydraulic model indicate that all seven of the concurrent fire flow simulations met the minimum residual pressure criterion of 20 psi.

Table 8-14. Results of Additional Fire Flow Simulations for Buildout System

Pressure Zone	Location #	Fire Flow Demand, gpm[(a)]	Residual Pressure, psi
Zone 1	1	1,500	54
		4,500	40
	2	1,500	56
		4,500	50
	7	1,500	43
		4,500	39
Zone 2	3	1,500	68
		4,500	55
	4	1,500	68
		4,500	34
	5	1,500	61
		4,500	31
Zone 3	6	1,500	70
		4,500	60

(a) It is assumed that the two concurrent fire flow events will consist of one smaller Single Family Residential fire flow combined with another larger Industrial fire flow.



Symbology

Available Fire Flow

- Does Not Meet Requirement
- Meets Requirement
- Pressure Regulating Station
- Pressure Reducing Valve
- Booster Pump Station
- Groundwater Well
- Storage Tank
- WTP John Jones Water Treatment Plant
- Pipeline

Fire Flow Requirement

- 1,500 gpm
- 2,500 gpm
- 3,500 gpm
- 4,500 gpm

Notes:

1. The available fire flow shown is the maximum flow available while maintaining 20 psi residual system pressure and velocities of less than 12 fps in proposed pipelines.
2. The City's hydraulic model is not an all pipes model. Some pipes which are not hydraulically significant were excluded from the model.
3. The buildout storage and pumping capacity analysis include a maximum fire flow requirement of 4,500 gpm in Zone 5 to account for the potential construction of a school in Zone 5. However, because the location of this potential school is unknown, fireflow requirements were limited to 2,500 gpm in Zone 5 in the hydraulic analysis. Once the location of the school is known, additional analysis should be performed to determine which pipelines must be upsized to accomodate the higher fire flow requirement.

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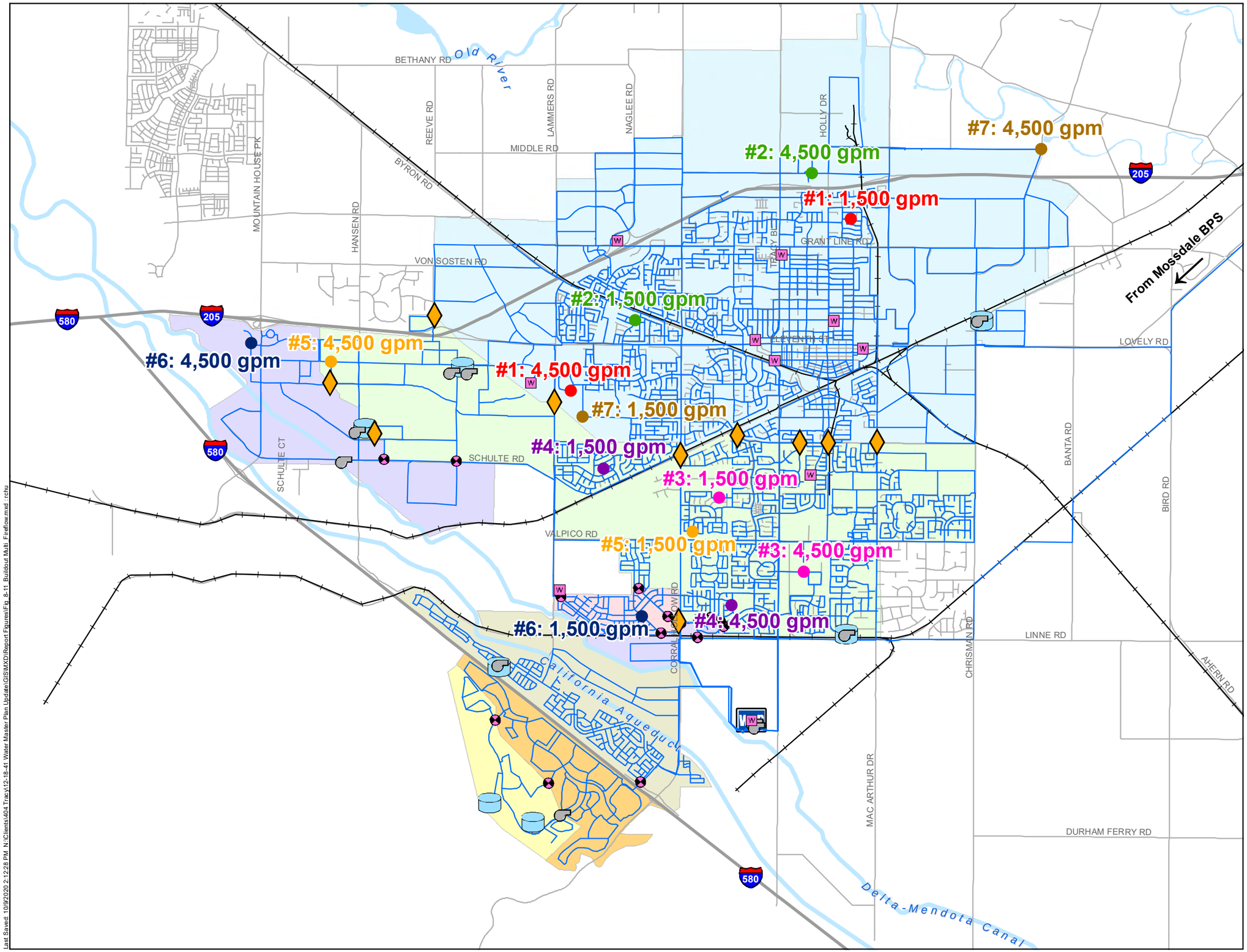
WEST YOST ASSOCIATES

Figure 8-10

Buildout System Available Fire Flow

City of Tracy
Water System Master Plan Update

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0 2,500 5,000

Scale in Feet

Symbology

Simultaneous Fire Flows

- Location #1
- Location #2
- Location #3
- Location #4
- Location #5
- Location #6
- Location #7

- Pressure Regulating Station
- Pressure Reducing Valve
- Booster Pump Station
- Groundwater Well
- Storage Tank
- John Jones Water Treatment Plant
- Pipeline

Pressure Zone

- Zone 1
- Zone 2
- Zone 3
- Ellis Reduced Zone
- Zone 4
- Zone 5
- Zone 6

Notes:

1. The City's hydraulic model is not an all pipes model. Some pipes which are not hydraulically significant were excluded from the model.

TRACY

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Figure 8-11

Buildout System Locations of Additional Simultaneous Fire Flow Simulations

City of Tracy
Water System Master Plan Update

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8.6 SUMMARY OF RECOMMENDED FUTURE POTABLE WATER SYSTEM IMPROVEMENTS

The recommended backbone potable water system improvements required to serve future potable water demands are summarized below and shown on Figure 8-12 and Figure 8-13. These future system improvements are triggered by additional demands from new development, unlike the improvements discussed in Chapter 7. It should be noted that these recommendations only identify facility improvements at a master plan level and do not necessarily include all required on-site infrastructure nor constitute design of improvements. Subsequent detailed design is required to determine the exact sizes and final locations of these proposed facility improvements.

The evaluation of the City's future water system is dependent on:

- Projected future development projects and land use data (refer to Chapter 3)
- Adopted water use factors (refer to Chapter 4)
- Adopted peaking factors (refer to Chapter 4)
- Characteristics and capabilities of existing water supply facilities (refer to Chapter 5)
- City water system performance criteria (refer to Chapter 6)

If any of these are significantly altered, the recommendations listed below may need to be reevaluated and revised.

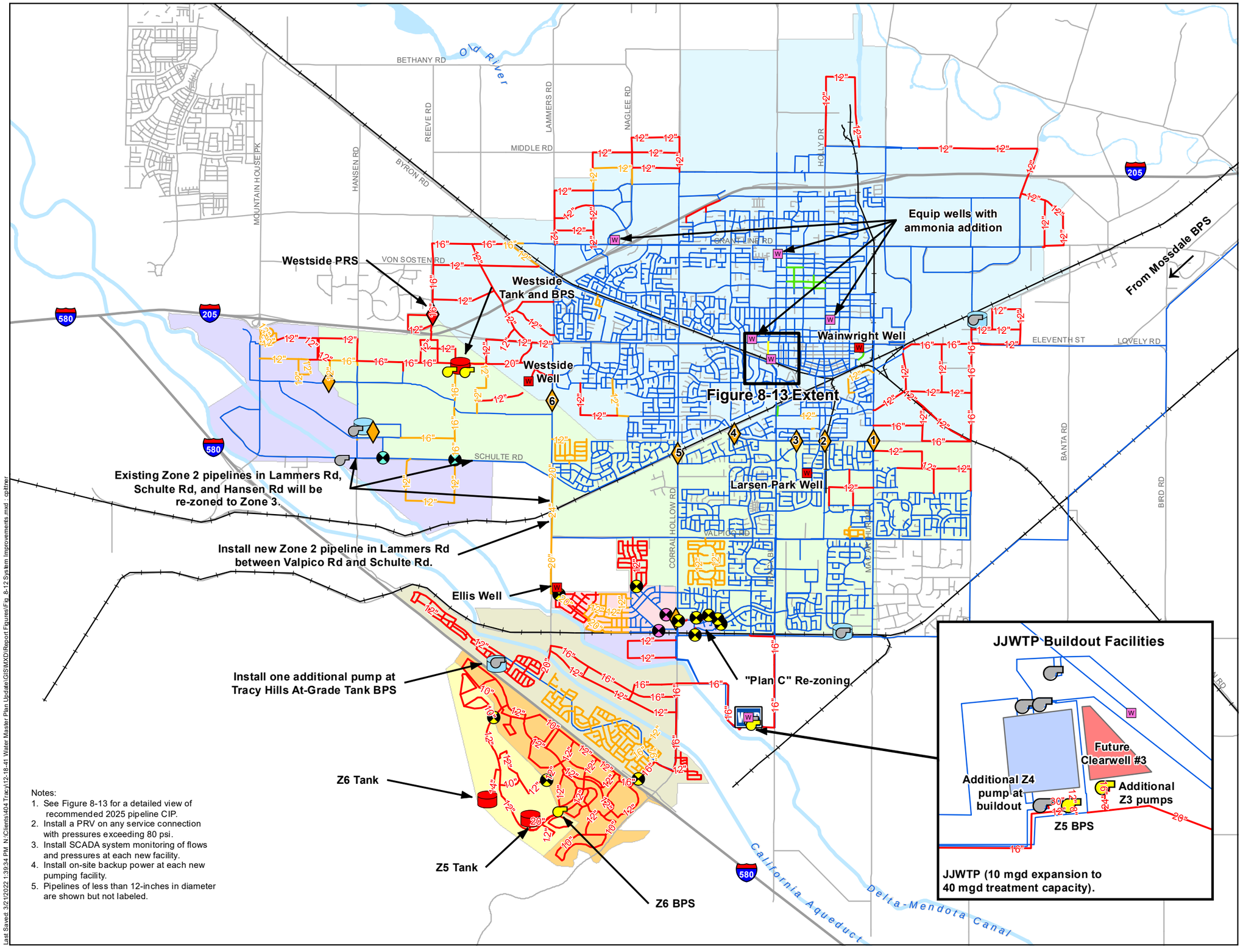
It should also be noted that the future hydraulic model is not an "all pipes" model (i.e., not all smaller diameter pipelines are included); therefore, the hydraulic simulations performed as discussed above may not identify all necessary water system improvements. Consequently, it is recommended that further hydraulic evaluations be performed as additional details are provided for each future development project.

8.6.1 2025 System Improvements

The recommended backbone potable water system improvements required to serve 2025 potable water demands are summarized below. Planning and design for these improvements should be conducted so that these improvements are constructed and operational by 2025.

8.6.1.1 Pipelines

- To serve 2025 water demands, install approximately 73,020 linear feet of new pipelines ranging in diameter from 12 to 24 inches as shown on Figure 8-12.
- To serve 2025 water demands, install additional new pipelines of 10 inches in diameter or less within individual development projects; the length of small diameter pipelines needed to serve 2025 water demands is unknown, as not all 2025 development areas have detailed water system infrastructure plans prepared.
- To serve 2025 water demands, upsize approximately 1,390 linear feet of existing pipelines as shown on Figure 8-13.



Notes:
1. See Figure 8-13 for a detailed view of recommended 2025 pipeline CIP.
2. Install a PRV on any service connection with pressures exceeding 80 psi.
3. Install SCADA system monitoring of flows and pressures at each new facility.
4. Install on-site backup power at each new pumping facility.
5. Pipelines of less than 12-inches in diameter are shown but not labeled.

0 2,500 5,000
Scale in Feet

Symbology

Proposed Buildout Facilities
- Buildout Pressure Regulating Station
- Buildout Pressure Reducing Valve
- Buildout Booster Pump Station
- Buildout Groundwater Well
- Buildout Storage Tank
- Buildout System Pipeline

Proposed 2025 Facilities
- 2025 Pressure Reducing Valve
- 2025 System Pipeline
- 2025 Pipeline CIP

Existing System Facilities
- Existing Pressure Regulating Station
- Existing Pressure Reducing Valve
- Existing Booster Pump Station
- Existing Groundwater Well
- Existing Storage Tank
- John Jones Water Treatment Plant
- Existing System Pipeline
- Proposed Existing System Pipeline CIP

Pressure Zone
- Zone 1
- Zone 2
- Zone 3
- Ellis Reduced Zone
- Zone 4
- Zone 5
- Zone 6

TRACY

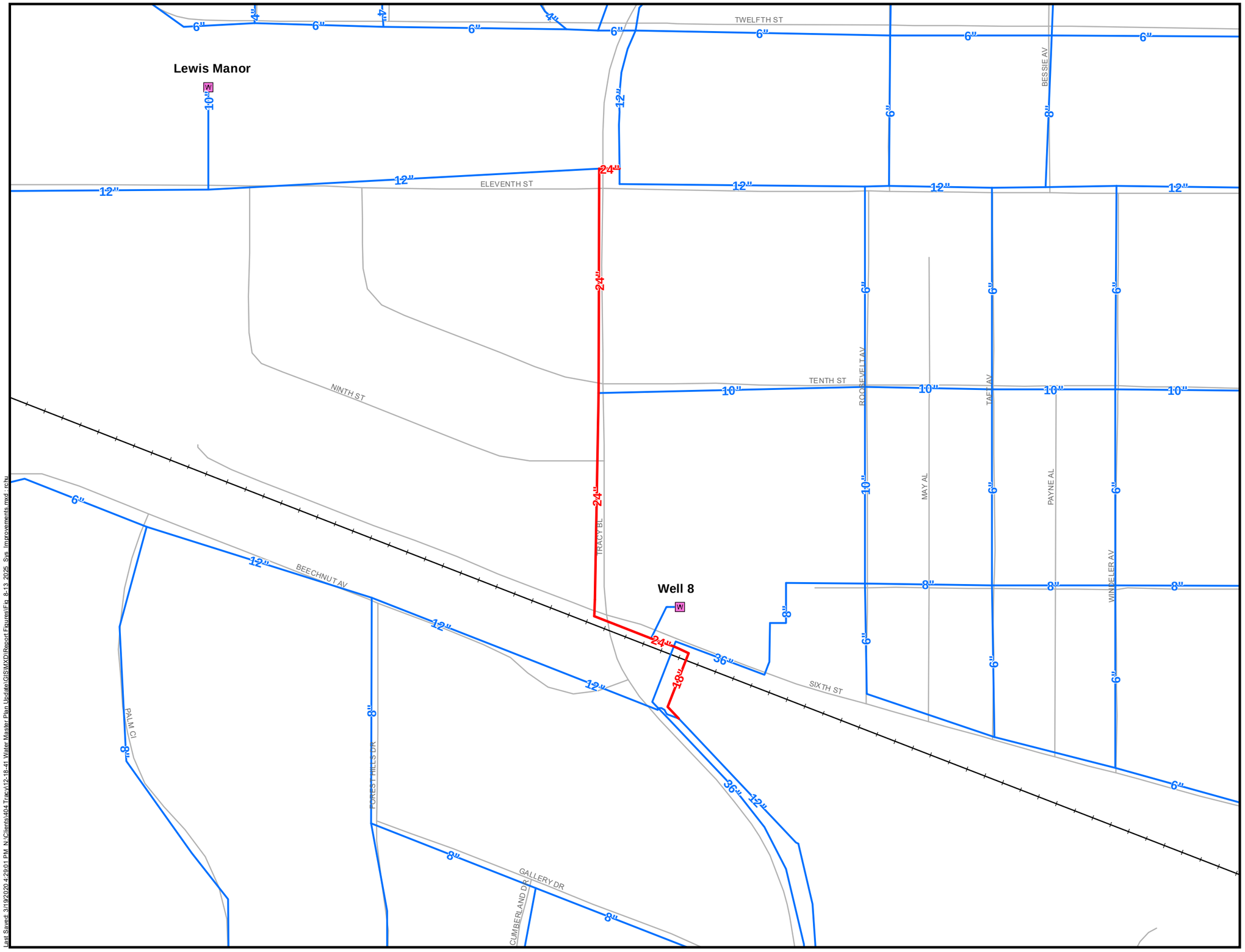
WEST YOST ASSOCIATES

Figure 8-12

Proposed Future Water System Recommended Improvements

City of Tracy
Water System Master Plan Update

Last Saved: 3/21/2022 1:39:34 PM N:\Clients\404 Tracy\12-18-41 Water Master Plan Update\GIS\MXD\Report Figures\Fig. 8-12 System Improvements.mxd - cpitner



Symbology

- Recommended 2025 Improvement
- Existing Pipeline
- Groundwater Well

Notes:
1. See Figure 8-12 for the location of the recommended improvements.

Figure 8-13

2025 System Recommended Pipeline CIP

City of Tracy
Water System Master Plan Update

Last Saved: 3/19/2020 4:29:01 PM N:\Clients\404 Tracy\12-18-41 Water Master Plan Update\GIS\MXD\Report Figures\Fig 8-13 2025 Sys Improvements.mxd rchu

8.6.1.2 Interconnections

- Install two new mainline PRVs before the transmission main in Schulte Road is re-zoned to Zone 3.
- Install an individual PRV on any water service connection with a static pressure exceeding 80 psi.

8.6.1.3 Re-Zoning

- Re-zone the existing transmission mains in Lammers Road, Schulte Road, and Hansen Road from Zone 2 to Zone 3 as described in Appendix D.

8.6.1.4 Groundwater Wells

- Provide ammonia addition for existing City wells (Lincoln Well, Lewis Manor Well, Park & Ride Well and Ball Park Well) (as noted below under Buildout System Improvements, all future wells are also recommended to be equipped with ammonia addition).
- A feasibility study is recommended to develop an implementation plan for future ASR expansion (see additional discussion in Chapter 5).

8.6.2 Buildout System Improvements

The recommended backbone potable water system improvements required to serve buildout potable water demands are summarized below.

8.6.2.1 Storage Facilities

Planning and design of these new storage facilities should be conducted so that the proposed facilities are constructed and operational in time to serve their respective service areas (e.g., Westside, Zone 5 or Zone 6). Because of the additional operational flexibility that Clearwell #3 would provide, it is recommended that Clearwell #3 be constructed as soon as possible. As noted above, no additional storage facilities are required by 2025, but it is recommended that Clearwell #3 be constructed by no later than 2030.

Note: Because the actual dimensions of each proposed storage facility have not been determined, the storage facility sizes below do not include dead and freeboard storage requirements, which will be determined during design.

- Westside Tank: Install a new storage tank with a minimum active storage capacity of 1.0 MG.
- JJWTP Clearwell #3: Install a new clearwell at the JJWTP with a minimum active storage capacity of 1.0 MG.
- Zone 5 Tank: Install a new storage tank with a minimum active storage capacity of 3.2 MG. Sizing of this tank should be confirmed before development of Zone 5 begins.

- Zone 6 Tank: Install a new storage tank with a minimum active storage capacity of 1.1 MG. Sizing of this tank should be confirmed before development of Zone 6 begins.

8.6.2.2 Groundwater Wells

Planning and design of these new groundwater wells should be phased so that the City's ASR Program can be expanded as needed to meet the City's water supply needs, particularly in dry years. As described in Chapter 5, a feasibility study for the expansion of the City's ASR Program is recommended, and is included above with the recommended 2025 System Improvements, to develop an implementation plan for ASR expansion.

- Westside ASR Well: Install a new ASR well with a minimum firm pumping capacity of 2,500 gpm and equipped with ammonia addition.
- Wainwright ASR Well: Install a new ASR well with a minimum firm pumping capacity of 2,500 gpm and equipped with ammonia addition.
- Larsen Park ASR Well: Install a new ASR well with a minimum firm pumping capacity of 2,500 gpm and equipped with ammonia addition.
- Ellis ASR Well: Install a new ASR well with a minimum firm pumping capacity of 1,000 gpm and equipped with ammonia addition.

8.6.2.3 Booster Pumping Facilities

Planning and design of these new booster pumping facilities should be coordinated with the construction of other related facilities (e.g., associated storage tanks) and the timing of new development. As of early 2022, the Zone 5 BPS design is complete.

- JJWTP: Increase the firm treated surface water pumping capacity at the JJWTP to meet buildout maximum day water demands.
  - Zone 3 BPS: Install additional Zone 3 booster pumps with a minimum pumping capacity of 1,500 gpm.
  - Zone 5 BPS: Install a new Zone 5 booster pump station with a minimum firm pumping capacity of 2,410 gpm.
- Zone 6 BPS: Install a new booster pump station with a minimum firm pumping capacity of 550 gpm (sizing of this pump station should be confirmed before development of Zone 6 begins).
- Westside Tank: Install a new Zone 1 booster pump station with a minimum firm pumping capacity of 4,500 gpm.
- Westside Tank: Install a new Zone 2 booster pump station with a minimum firm pumping capacity of 2,400 gpm.

8.6.2.4 Pipelines

Planning and design of these new pipelines should be coordinated with the timing of new development.

- To serve buildout water demands, install approximately 308,270 linear feet of new pipelines (in addition to the proposed 2025 pipelines) ranging in diameter from 12 to 30 inches as shown on Figure 8-12.
- To serve buildout water demands, install additional new pipelines of 10 inches in diameter or less within individual development projects; the length of small diameter pipelines needed to serve buildout water demands is unknown, as most buildout development areas do not have detailed water system infrastructure plans prepared.

8.6.2.5 Interconnections

Planning and design of these new interconnections should be coordinated with the timing of new development in the respective pressure zones.

- Install the following interconnections between pressure zones to provide supply during peak demands and/or emergency conditions:
  - Westside PRS (from Zone 2 into Zone 1)
  - Ellis PRV #3 (from Zone 3 into Ellis Reduced Zone)
  - Avenues PRV (from Ellis Reduced Zone into Zone 2)
  - Zone 4 PRV (from Zone 5 into Zone 4)
  - Two (2) Zone 5 PRVs (from Zone 6 into Zone 5)
  - Install six new mainline PRVs before the Plan C area is re-zoned to Zone 3 (to be funded through Plan C funds)
- Install an individual PRV on any water service connection with a static pressure exceeding 80 psi.

8.6.2.6 Re-Zoning

Planning and design of this rezoning should be coordinated with the timing of the new Zone 3 pipeline from the JJWTP.

- Re-zone the Plan C area from Zone 2 to Zone 3 (to be funded through Plan C funds)

8.6.2.7 SCADA System/Backup Power

Planning and design of the recommended SCADA system improvements and backup power should be prioritized and completed as soon as possible, as these improvements will improve operational flexibility and reliability.

- Install SCADA system monitoring of flows and pressures at PRS #1-#6 to provide operators with additional understanding and flexibility in system operations.

- Add remote operation of Well 8 from the SCADA system to provide additional operational flexibility.
- Install SCADA system monitoring of flows and pressures at each new water supply facility to provide operators with real-time system data and flexibility in system operations.
- Install on-site backup power to any proposed buildout system pumping facility to improve supply reliability.

8.6.2.8 JJWTP Expansion

A future additional 10 mgd expansion of the JJWTP (for a total treatment capacity of 40 mgd) is recommended to provide the City with additional water treatment capacity, as well as operational flexibility and reliability, if the use of groundwater supplies needs to be limited or if there is a supply outage from South County Water Supply Project. The expansion would also include a new administration/maintenance building to accommodate future staffing needs and maintenance activities.

It is recommended that the JJWTP expansion be constructed by no later than 2030, in coordination with the new JJWTP Clearwell #3.

8.6.2.9 Participation in Phase 2 Los Vaqueros Reservoir Expansion Project

As described in Chapter 5, the City's participation in the Phase 2 Los Vaqueros Reservoir Expansion Project would increase the City's water supply reliability by providing storage of supplies for use in dry years. The estimated cost for 5,000 acre-feet of storage for the City will be approximately $10 million plus an additional $1.5 million for implementation and will be shared by existing rate payers and new development. In October 2021, the Tracy City Council authorized staff to initiate the process to participate in the project and authorized the City Manager to execute the project activity agreement.

8.6.2.10 Water Master Plan Updates

Regular updates of this Citywide Water System Master Plan are recommended to evaluate potable water and recycled water infrastructure needs to reflect any changes in future development plans, water use trends and patterns, and water supply availability and reliability, as well as new regulations and operational needs as new potable water and recycled water system infrastructure is constructed. It is recommended that updates be prepared at least once every 10 years, or more often if changing conditions warrant more frequent updates. For purposes of this Citywide Water System Master Plan Update, three future updates are planned.

CHAPTER 9
Recycled Water System Evaluation

9.1 OVERVIEW

The purpose of this chapter is to describe the City's existing recycled water system and the recommended future recycled water system at buildout of the City's SOI. The recycled water infrastructure recommended in this chapter is based on the adopted water use and peaking factors described in Chapter 4 and system performance criteria described in Chapter 6 of this Citywide Water System Master Plan Update.

The City's existing WWTP on Holly Drive currently collects and treats wastewater to a Title 22 Disinfected Tertiary standard. The construction of a recycled water system to distribute this water to various non-potable use areas began in 2018; currently the only service connection is for the Legacy Fields sports complex. In the future, the City will extend the recycled water system and use recycled water to meet irrigation and other non-potable demands in existing service areas (thus offsetting some existing potable water use) and future service areas.

The topics discussed in this chapter include:

- Description of Existing Recycled Water System
- Existing Recycled Water System Demands
- Recommended Buildout Recycled Water System
- Recycled Water System Criteria
- Recycled Water System Evaluation Results
- Summary of Recommended Future Recycled Water System Improvements

To assist in the evaluation of the City's overall recycled water system at buildout, the recycled water infrastructure recommended in this chapter includes the infrastructure required to serve the Tracy Hills development and, for consistency, is based on the adopted water use, peaking factors, and system performance criteria described in previous chapters of this Citywide Water System Master Plan. Although the Tracy Hills development is located within separate and distinct recycled water pressures zones from the rest of the City, West Yost has included the Tracy Hills development in the future recycled water system evaluation because it will be served by pipelines, tanks, and booster pump stations in other pressure zones which need to be sized to account for the demands in Tracy Hills. Including the Tracy Hills development in the buildout hydraulic model evaluation ensures that the City's buildout recycled water system is integrated and sufficient to serve the recycled water demands of the entire City (including Tracy Hills). Because planning for future phases of Tracy Hills is subject to change, the sizing of any future water system improvements to serve Tracy Hills should be confirmed based on the latest development plans and associated water demand projections.

9.2 DESCRIPTION OF EXISTING RECYCLED WATER SYSTEM

This section provides a summary of the City's existing recycled water system facilities. Construction of the City's recycled water distribution system began in 2018. Currently, the recycled water distribution system consists of the Zone A booster pump station (Zone A BPS) at the City's Wastewater Treatment Plant, and approximately 7.6 miles of 30-inch diameter and 24-inch diameter transmission mains on the north and west side of the City, as shown on Figure 9-1. Additional details regarding each facility are presented below.

9.2.1 Wastewater Treatment Plant

The City's WWTP is located on Holly Drive, just north of the I-205 freeway as shown on Figure 9-1. The WWTP currently has a permitted average dry weather flow treatment capacity of 10.8 mgd. The WWTP treats domestic and industrial wastewater using a combination of primary clarification, an advanced activated sludge process with anoxic denitrification, tertiary filtration, and chlorination. The chlorinated effluent meets Title 22 requirements for recycled water use for landscape irrigation and other non-potable uses.

9.2.2 Booster Pump Stations

The City currently has one recycled water booster pump station, as shown on Figure 9-1. The Zone A BPS is located at the WWTP, and supplies water from the post-aeration basin to the recycled water distribution system. Table 9-1 presents a summary of the existing recycled water booster pump station with key characteristics such as design capacity and number of booster pumps.

Table 9-1. Existing Recycled Water Booster Pump Station

Booster Pump Station Name	Location	Year Installed	Pump 1, gpm	Pump 2, gpm	Pump 3, gpm	Pump 4, gpm	Pump 5, gpm	Rated Capacity[(a)], gpm	Firm Capacity[(b)], gpm	Firm Capacity[(b)], mgd
Zone A[(c)]	WWTP	2019	1,736	1,736	1,736	1,736	1,736	8,680	6,944	10.0

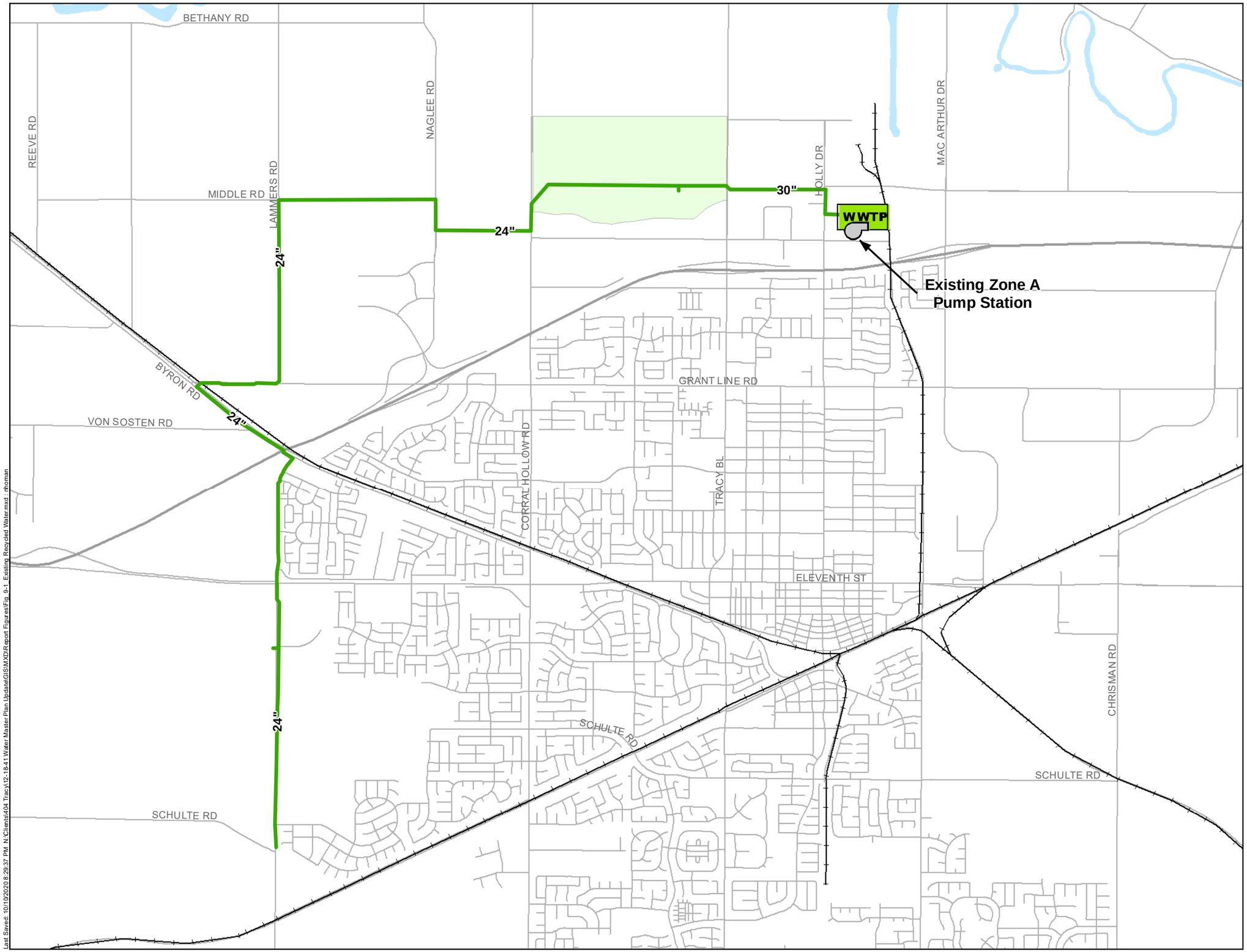
(a) Maximum pumping capacity of entire pump station.
(b) Assumes that the largest booster pump at the pump station is offline.
(c) Pumps are equipped with variable frequency drives.

9.2.3 Pressure Zone Boundaries

The City's existing recycled water system consists of a single pressure zone, Zone A. Pressure zone boundaries at buildout of the recycled water system are discussed in *Section 9.4.2 Pressure Zone Recommendations*.

9.2.4 Transmission and Distribution Pipelines

The City's existing recycled water transmission system pipeline network is shown on Figure 9-1. The only recycled water pipelines currently in service are 7.6 miles of 30-inch diameter and 24-inch diameter transmission mains from the WWTP west to Lammers Road and south to Kimball High School.



Symbology

- Existing Booster Pump Station
- WWTP Wastewater Treatment Plant
- Existing Transmission Pipeline (Diameter >16 inches)
- Legacy Fields

Notes:
1. The City's recycled water hydraulic model is not an all pipes model. Some pipes which are not hydraulically significant were excluded from the model.
2. Existing recycled water pipelines which are not yet in service are not shown.

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Figure 9-1

Existing Recycled Water System Facilities

City of Tracy
Water System Master Plan Update

Last Saved: 10/19/2020 8:29:37 PM N:\Clients\404 Tracy\12-19-41 Water Master Plan Update\GIS\MXD\Report Figures\Fig. 9-1 Existing Recycled Water.mxd - rhoman

Recycled water distribution pipelines have also been installed by developers in several future service areas, including Cordes Ranch, Ellis Specific Plan Phase 1, and Tracy Hills Phase 1. However, because no source of recycled water is currently available in these areas, these pipelines are currently connected to the potable water system via backflow prevention devices and are delivering potable water to serve irrigation demands. Once recycled water service is extended to these areas, the recycled water mains will be connected to the recycled water system and the temporary connections to the potable water system will be removed.

9.2.5 SCADA System

The Zone A BPS is integrated into the City's SCADA (Supervisory Control and Data Acquisition) system for the WWTP. This integration provides for remote operation and monitoring of the Zone A BPS, as well as automated shut down of the pump station if chlorinated effluent from the WWTP does not meet Title 22 standards at a given time.

9.3 EXISTING RECYCLED WATER DEMANDS

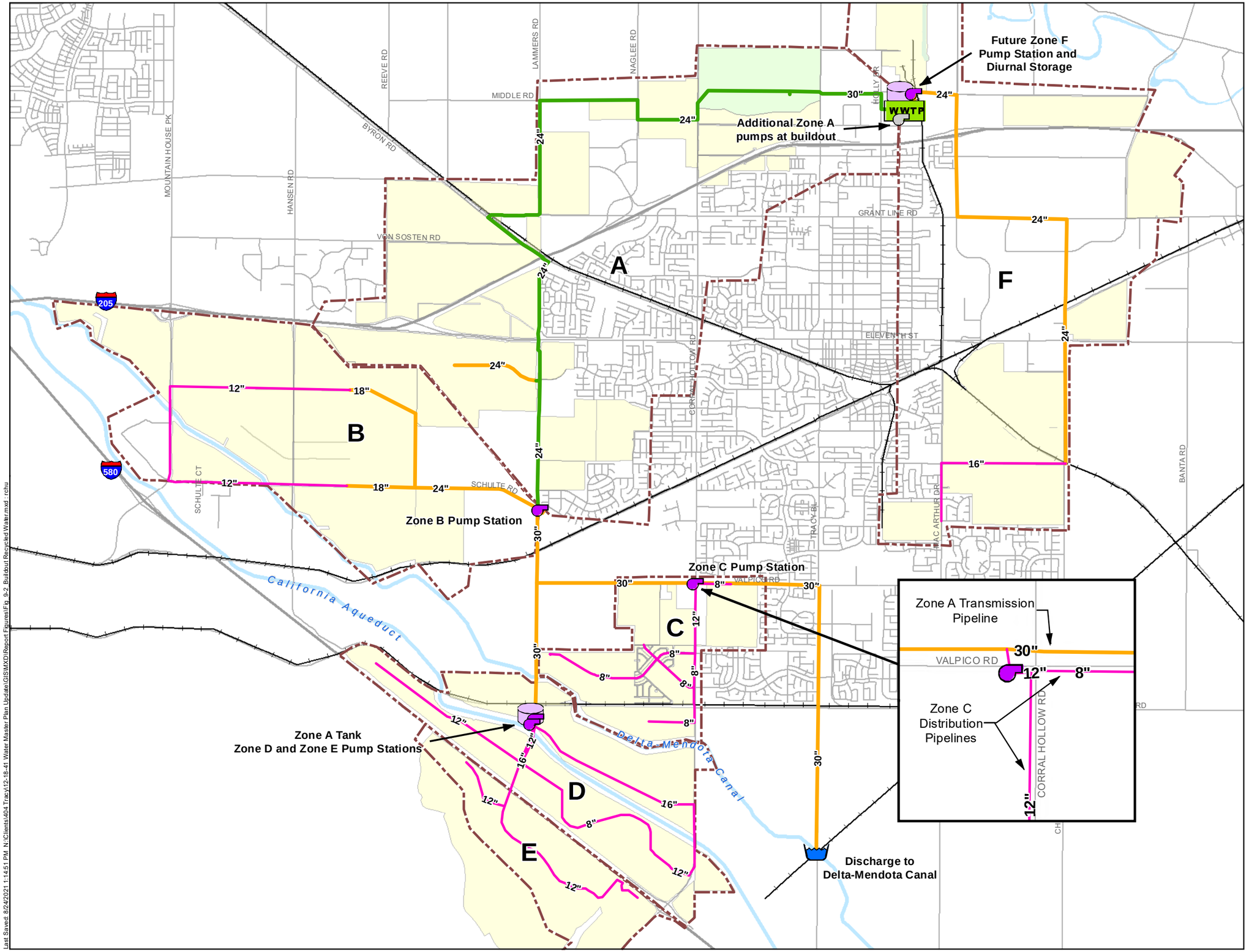
The City's only active recycled water service connection is the Legacy Fields sports complex.

9.4 RECOMMENDED BUILDOUT RECYCLED WATER SYSTEM

The City intends to expand the existing recycled water system to serve non-potable water demands to most future development areas, help offset some existing potable water irrigation demands, and reduce treated effluent discharges to Old River. One integrated recycled water system is proposed and will serve and distribute recycled water throughout the entire SOI.

In addition to serving non-potable water demands, the future recycled water system must also be capable of delivering recycled water to the DMC for the City's proposed Recycled Water Exchange Program with the USBR. As discussed in Chapter 5, this exchange agreement would allow the City's recycled water to be discharged to the DMC and a like amount of raw water to be diverted from the DMC by the City for treatment at the JJWTP for potable use. This exchange agreement is an essential part of the City's projected future water supply portfolio. Future recycled water system infrastructure was sized to account for the additional flow which must be conveyed through the recycled water system from the WWTP to the DMC. It should be noted that the quantity of recycled water required for the exchange agreement is assumed to be up to about 9,000 af/yr. This is higher than the exchange amount assumed in the City's 2020 UWMP and described in Chapter 4 (7,500 af/yr), and reflects an approximate upper bound for the recycled water exchange program. Subsequent revisions to the projected potable water demand and/or the water supply availability and reliability assumptions may change the required quantities and timing of the proposed Recycled Water Exchange Program.

Recommendations for the buildout recycled water system were developed based on previous studies of the recycled water system, projected recycled water demands, the requirements of the planned recycled water exchange program, and the recycled water system performance criteria. A hydraulic model was used to confirm that these recommendations meet the City's recycled water system performance criteria described in Chapter 6. The recommended buildout recycled water system is shown on Figure 9-2.



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Symbology

Proposed Future Facilities

- Future Booster Pump Station
- Future Storage Tank
- Delta Mendota Canal Discharge Point
- Future Distribution Pipeline (Diameter ≤ 16 inches)
- Future Transmission Pipeline (Diameter > 16 inches)

Existing System Facilities

- Existing Booster Pump Station
- WWTP Wastewater Treatment Plant
- Existing Transmission Pipeline (Diameter >16 inches)
- Legacy Fields
- Future Recycled Water Use Area
- Recycled Water Pressure Zone

Notes:
1. Pressure Zones represent approximate boundaries.
2. The City's recycled water hydraulic model is not an all pipes model. Some pipes which are not hydraulically significant were excluded from the model.
3. Existing recycled water pipelines which are not yet in service are shown as future pipelines.

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Figure 9-2

Buildout Recycled Water System Facilities

City of Tracy
Water System Master Plan Update

9.4.1 Future Recycled Water Demand Areas

The demand areas to be served by the future recycled water system are shown on Figure 9-2. For this Citywide WSMP Update, the following assumptions were made regarding the areas served by the recycled water system:

- Most large development projects located on the west side of the City will be served by the recycled water system by 2025, except for Cordes Ranch, West Side Industrial, and Tracy Hills.
- Recycled water service will be extended to Cordes Ranch, West Side Industrial, and Tracy Hills by 2040; it is expected that this will occur after 2025, but much sooner than 2040.
- Future recycled water service areas on the east side of the City (East Side Industrial, Chrisman Road, UR 1, and Rocha), will be served by a separate recycled water transmission main which will not be constructed until after 2040.
- Recycled water service will not be extended to developments in the following areas due to the isolated locations and relatively small individual potential recycled water demands within them:
  - I-205 Corridor Specific Plan
  - Industrial Areas Specific Plan
  - Northeast Industrial Specific Plan
  - Berg Road Subdivision
  - Berg/Byron Remainder
  - Other small, approved projects (refer to Table 3-1, footnote (f) for the full list)
  - Miscellaneous Infill
- Only a small number of existing parks and irrigated areas located close to the recycled water transmission main alignments will be converted to recycled water service; it should be noted that the previously proposed Gateway Exchange Program, under which recycled water service would be extended to most existing parks and large irrigated areas in the City to offset potable water demands from the Gateway development (now called Westside), is no longer being considered.

9.4.2 Pressure Zone Recommendations

The proposed recycled water pressure zones developed in the 2012 WSMP mimicked the potable water distribution system pressure zones. However, the recent Recycled Water Optimization Evaluation[1] (Optimization Study) recommended adjustments to the proposed pressure zones to minimize parallel pipelines and reduce the cost of the system. The recycled water pressure zones proposed in this WSMP Update are generally consistent with those recommended in the Optimization Study:

- Zone A will extend west and south from the City's WWTP to Schulte Road and the western boundary of the Westside Specific Plan. The existing 30-inch diameter and 24-inch diameter transmission main on the north side of the City and in Lammers Road will serve Zone A.
- Zone B will extend west from the western boundary of Zone A, and will include Cordes Ranch, Westside Industrial Area, and portions of the Westside Specific Plan. It will be served by a 24-inch diameter transmission main in Schulte Road.
- Zone C will include the Ellis Specific Plan, Avenues, Tracy Village, UR 10, and SWP & Valpico service areas. Due to the relatively small demands from these areas and the compact nature of this pressure zone, no pipelines greater than 12-inch diameter are recommended to serve it.
- Zones D and E will be located southwest of the DMC and will exclusively serve Tracy Hills. Each pressure zone will be served by dedicated 12-inch and 16-inch diameter distribution mains. Because the elevation and configuration of the Tracy Hills development favors a pressure zone break where Interstate 5 crosses the property, the Tracy Hills pressure zones have not been adjusted from the pressure zones recommended in the 2000 Tracy Hills Master Plan.
- Zone F will extend east and south from the City's WWTP to include the recycled water service areas on the east side of the City. This pressure zone will be served by a 24-inch diameter and 16-inch diameter transmission main. This pressure zone was not included in the Optimization Study, which only considered the recycled water system for the west side of the City. The 2012 WSMP assumed that the east side developments would be served by the same pressure zone(s) as the west side developments. However, because the east side backbone transmission main is no longer planned to connect to the rest of the system, it is recommended that the east side developments be served by a separate pressure zone with a hydraulic grade selected to better serve the specific elevation range of the east side service area. This will require the construction of a separate booster pump station at the WWTP dedicated to serving Zone F.

The proposed ground elevation ranges and the modeled hydraulic grade ranges for each pressure zone are presented in Table 9-2.

[1] "Recycled Water Optimization Evaluation", CH2M Hill Engineers, Inc, January 2017.

Table 9-2. Recycled Water Distribution Pressure Zones			
Pressure Zone	Nominal Hydraulic Grade, ft	Expected Range of Service Elevations, ft	Static Pressure Range, psi
A	375	10 - 91	122 - 157
B	410	105 - 230	77 - 131
C	360	100 - 185	75 - 112
D	470	209 - 310	69 - 112
E	550	305 - 400	64 - 105
F	264	19 - 96	72 - 105
psi = pounds per square inch			

Ground elevations and hydraulic grades were chosen to provide a system pressure range of 60 psi to 100 psi where possible, as defined in the recycled water system evaluation criteria. The nominal hydraulic grades shown in Table 9-2 are based on the design head of existing pumps (Zone A), planned pumps (Zone B), or on the pump design head necessary to maintain a minimum of 60 psi service pressure within the pressure zone under peak hour conditions (all other zones). Nominal hydraulic grade was calculated at the pump discharge. Because of friction losses in the distribution system during operations, system pressure near the pump stations can exceed 100 psi. The highest expected pressure in the proposed recycled water system is 178 psi on the discharge side of the Zone A BPS.

9.4.3 Allocation of Future Recycled Water Demands

The projected recycled water demands were previously discussed in Chapter 4. The maximum day and peak hour peaking factors were also presented previously in Chapter 4 and are summarized below in Table 9-3.

Table 9-3. Recycled Water Demand Peaking Factors	
Parameter	Value
Maximum Month Demand, percent of annual demand[(a)]	17.6%
Maximum Day Peaking Factor[(b)]	6.4
Peak Hour Peaking Factor[(c)]	7.0
(a) Based on 2017 monthly potable water use for dedicated landscape irrigation accounts. (b) Multiply the average day demand times the peaking factor to obtain maximum day demand. Maximum Day Demand Peaking Factor = Maximum Month Demand (percent) / 30 days x 365 x (24/8). (c) Multiply the average day demand times the peaking factor to obtain peak hour demand. Assumed to be 110 percent of Maximum Day Demand, refer to Chapter 4.	

Projected buildout recycled water average day, maximum day, and peak hour demands (including existing demands) are summarized in Table 9-4. Additional detail of the projected average day recycled water demands at buildout for each future development project by pressure zone (not including existing demands) is provided in Table 9-5.

Table 9-4. Buildout Recycled Water Demands by Pressure Zone

Pressure Zone	Average Day Demand[a]		Maximum Day Demand[b]		Peak Hour Demand[c]	
	gpm	mgd	gpm	mgd	gpm	mgd
Zone A	1,534	2.2	9,818	14.1	10,739	15.5
Zone B	876	1.3	5,605	8.1	6,131	8.8
Zone C	242	0.3	1,547	2.2	1,692	2.4
Zone D	388	0.6	2,484	3.6	2,717	3.9
Zone E	264	0.4	1,690	2.4	1,848	2.7
Zone F	620	0.9	3,968	5.7	4,340	6.2
Total	**3,924**	**5.7**	**25,112**	**36.2**	**27,466**	**39.6**

(a) Equal to existing water demands plus projected buildout water demands presented in Table 4-16.
(b) Maximum day demand is 6.4 times the average day demand.
(c) Peak hour demand is 7.0 times the average day demand.

9.4.4 Recycled Water Exchange Program Seasonality

For purposes of this Citywide Water System Master Plan Update, it has been assumed that the future recycled water system would be designed to deliver up to about 9,000 af/yr of recycled water to the DMC as part of the City's planned recycled water exchange agreement with the USBR. This is more than the 7,500 af//yr assumed in the City's 2020 UWMP and described in Chapter 4 of this Citywide Water System Master Plan Update, but reflects an approximate upper bound for the recycled water exchange program. Because recycled water demands from City customers vary significantly with the season, the time of year in which exchange recycled water is discharged to the DMC has a significant effect on the sizing of recycled water system facilities. For example, the volume of water the system can discharge to the DMC during a maximum day demand condition in the summer will be significantly less than the volume the system can discharge to the DMC in the winter, when recycled water demands are low.

It is assumed that the City will be able to optimize the timing of recycled water discharge to the DMC so that the majority of the exchange takes place in off-peak months. During a maximum day demand condition in a single dry year at buildout, it was assumed that the recycled water system would only have to deliver 4.1 mgd to the DMC. In a single dry year, the recycled water system should be capable of delivering as much as 13.8 mgd to the DMC on a winter day with negligible recycled water demands from City customers.

Table 9-5. Summary of Buildout Average Day Recycled Water Demands by Development Project[a,b]

Project or Development Area	Zone A		Zone B		Zone C		Zone D		Zone E		Zone F		Total	
	gpm	percent of total	gpm	percent of total	gpm	percent of total	gpm	percent of total	gpm	percent of total	gpm	percent of total	gpm	percent of total
UR 5 (Bright)	49.51	3.37%		0.00%		0.00%		0.00%		0.00%		0.00%	49.51	1.28%
UR 7 (Bright/Castro)	44.52	3.03%		0.00%		0.00%		0.00%		0.00%		0.00%	44.52	1.15%
Rocking Horse	6.26	0.43%		0.00%		0.00%		0.00%		0.00%		0.00%	6.26	0.16%
Tracy Village		0.00%		0.00%	98.28	40.67%		0.00%		0.00%		0.00%	98.28	2.55%
UR 1		0.00%		0.00%		0.00%		0.00%		0.00%	263.48	42.47%	263.48	6.83%
Ellis		0.00%		0.00%	66.93	27.70%		0.00%		0.00%		0.00%	66.93	1.74%
Avenues		0.00%		0.00%	12.01	4.97%		0.00%		0.00%		0.00%	12.01	0.31%
UR 10		0.00%		0.00%	45.42	18.80%		0.00%		0.00%		0.00%	45.42	1.18%
Tracy Hills		0.00%		0.00%		0.00%	388.09	100.00%	264.08	100.00%		0.00%	652.18	16.91%
Westside	271.46	18.50%		0.00%		0.00%		0.00%		0.00%		0.00%	271.46	7.04%
Cordes Ranch		0.00%	600.42	68.56%		0.00%		0.00%		0.00%		0.00%	600.42	15.57%
UR 4 (Bright Triangle)	61.87	4.22%		0.00%		0.00%		0.00%		0.00%		0.00%	61.87	1.60%
UR 3 (Sandhu)	254.46	17.34%		0.00%		0.00%		0.00%		0.00%		0.00%	254.46	6.60%
I-205 Expansion	79.63	5.43%		0.00%		0.00%		0.00%		0.00%		0.00%	79.63	2.06%
West Side Industrial		0.00%	254.51	29.06%		0.00%		0.00%		0.00%		0.00%	254.51	6.60%
East Side Industrial		0.00%		0.00%		0.00%		0.00%		0.00%	144.09	23.23%	144.09	3.74%
Larch-Clover	159.91	10.90%		0.00%		0.00%		0.00%		0.00%		0.00%	159.91	4.15%
Chrisman Road		0.00%		0.00%		0.00%		0.00%		0.00%	44.25	7.13%	44.25	1.15%
Rocha		0.00%		0.00%		0.00%		0.00%		0.00%	28.89	4.66%	28.89	0.75%
SWC Valpico & Corral Hollow		0.00%		0.00%	19.00	7.86%		0.00%		0.00%		0.00%	19.00	0.49%
Dobler/Maibes	9.01	0.61%		0.00%		0.00%		0.00%		0.00%		0.00%	9.01	0.23%
Holly Sugar Industrial		0.00%		0.00%		0.00%		0.00%		0.00%	55.99	9.03%	55.99	1.45%
Tracy Combined Cycle Power Plant		0.00%	20.88	2.38%		0.00%		0.00%		0.00%		0.00%	20.88	0.54%
Legacy Fields	246.68	16.81%		0.00%		0.00%		0.00%		0.00%		0.00%	246.68	6.40%
Parks RW Conversion (west side)	283.94	19.35%		0.00%		0.00%		0.00%		0.00%		0.00%	283.94	7.36%
Parks RW Conversion (east side)		0.00%		0.00%		0.00%		0.00%		0.00%	83.69	13.49%	83.69	2.17%
Total	**1,467.24**	**100%**	**875.81**	**100%**	**241.64**	**100%**	**388.09**	**100%**	**264.08**	**100%**	**620.39**	**100%**	**3,857.26**	**100%**

(a) Water demands shown are for new development only and do not include existing recycled water demands. See Appendix A for detailed demand calculations by project or development area.
(b) Water demands shown include UAFW.

9.4.5 Seasonal and Diurnal Storage Facilities

The projected average monthly demands and available flow from the City's WWTP are summarized in Table 9-6. As shown in the table, there will be an excess amount of recycled water available from the Holly Drive WWTP in all months and therefore seasonal storage is not required.

Table 9-6. Projected Buildout Recycled Water Supply and Demand

Month	Available Wastewater Flow[(a)], af	Recycled Water Demand, af[(b)]	Exchange Program Discharge to DMC, af[(c)]	Remaining Amount, af[(d)]
January	1,501	70	1,154	277
February	1,356	44	1,186	127
March	1,501	50	1,074	378
April	1,453	213	886	355
May	1,501	515	776	210
June	1,453	910	519	24
July	1,501	1,103	376	22
August	1,501	935	447	119
September	1,453	1,112	322	19
October	1,501	793	537	171
November	1,453	437	778	238
December	1,501	148	895	458
Total	**17,676**	**6,329**	**8,947**	**2,400**

(a) Based on Average Dry Weather Flow value of 15.78 mgd received from Carollo by e-mail on June 9, 2020.
(b) Monthly recycled water demand distribution based on 2017 City irrigation water use pattern.
(c) Monthly discharge to DMC based on availability of wastewater and the capacity of the proposed recycled water system facilities.
(d) Remaining Amount = Available Wastewater Flow - (Recycled Water Demand + Exchange Program Discharge)

Diurnal storage tanks were sized based on the volume of storage needed to supply peak hour demands and to reduce the required size of recycled water pump stations and pipelines. It is recommended that the City construct a 5.7 MG recycled water storage tank just north of the California Aqueduct on Lammers Road. The location of this tank is consistent with that recommended in the Optimization Study. This tank will supply Zone A via gravity, and Zones D and E via pumping, during the 8-hour irrigation period. It is recommended that the City construct the Zone A Tank before other recycled water storage facilities. The Zone A Tank should meet the City's recycled water storage requirements through 2040.

An additional 2.6 MG of diurnal storage may be needed at the WWTP at buildout. This value may change depending on the actual WWTP effluent diurnal flow. It is recommended that the City re-evaluate the required diurnal storage at the WWTP by performing a diurnal flow study in 2040. Table 9-7 summarizes the recommended distribution of diurnal storage in the buildout recycled water system.

Table 9-7. Diurnal Storage Distribution	
Storage Location	Storage Volume, MG
Diurnal Storage at WWTP	2.6[(a)]
Zone A Tank	5.7
Total	**8.3**

(a) Volume may be reduced depending on Holly Drive WWTP effluent recycled water diurnal flow rate. May go to zero if low flow period exceeds combined Zones A and F maximum pumping rate.

9.4.6 Booster Pump Stations

As the recycled water system develops, additional booster pump stations will be required to move water from Zone A into higher pressure zones, and to pump water from the WWTP into Zone F. With the exception of the Zone C BPS, the locations of the recommended booster pump stations are based on the Optimization Study, which modified the booster pump station recommendations in the 2012 WSMP.

The Zone A BPS will require an additional 3,472 gpm of pumping capacity at buildout. It was assumed that this will be provided by two new pumps with characteristics similar to those of the existing pumps.

The recommended location of the Zone C BPS was moved from Lammers Road to the corner of Valpico Road and Corral Hollow Road. The Zone C BPS cannot be located on the west side of the Ellis Specific Plan, as the headloss through the existing and planned 8-inch diameter pipes in the Ellis would be too great to maintain 60 psi residual pressure in the majority of Zone C. Assuming that the DMC transmission pipeline will be constructed in Valpico Road and Tracy Boulevard (see *9.2.6 Recycled Water Pipeline Alignment* below), it is recommended that the Zone C BPS be located at the corner of Valpico Road and Corral Hollow Road so as to draw water from this transmission pipeline. If the Alternative B alignment is selected for the DMC transmission pipeline, the Zone C BPS could be constructed at the intersection of Corral Hollow Road and Linne Road instead. If the Alternative C alignment is selected for the DMC transmission pipeline, the Zone C BPS could be constructed in several locations, but additional Zone A or Zone C pipelines would need to be constructed to connect Zone C to the rest of the system.

The Tracy Hills Master Plan recommended that both the Zone D and Zone E booster pump stations be constructed adjacent to the Tracy Hills storage tank, instead of having the Zone E BPS constructed as a booster station in Zone D. West Yost concurs with this recommendation, and the logic behind this is three-fold. First, the distribution system is small enough so that the additional pipeline length is not substantial. Second, an emergency pressure reducing valve station was proposed so that some reduced flow could be delivered to Zone D through Zone E, if necessary. Third, having both pump stations at the same location makes it easier for the City to operate and maintain these pump stations.

A summary of the proposed booster pump station design characteristics is shown in Table 9-8.

Table 9-8. Recycled Water Distribution System Pump Station Design Criteria

Pump Station	Design Flow Rate, gpm[a]	Design Total Dynamic Head, feet
Zone A	12,152[b]	362
Zone B	5,780[c]	181
Zone C	1,700[c]	125
Zone D	2,700[c]	225
Zone E	2,000[c]	305
Zone F	4,400[c]	250

(a) Total pump station capacity assumes all pumps at pump station are in service.
(b) Pump station capacity required to fill Zone A Tank and supply exchange water to Delta Mendota Canal during a maximum day. Assumes two new pumps with properties similar to existing pumps are installed by buildout.
(c) Based on peak hour demands.

These proposed booster pump stations should supply a minimum design pressure of 60 psi in all zones to meet the design criteria described in Chapter 6.

9.4.7 Recycled Water Pipeline Alignments

Where possible, future recycled water pipeline alignments were based on existing recycled water pipelines which have been constructed but are not yet in service, or on planned recycled water pipelines for near-term developments. The alignment of the future Zone A transmission pipeline in Lammers Road is consistent with the Optimization Study, as is the alignment of the Zone B transmission pipeline in Schulte Road. It is expected that the alignment of these pipelines when constructed will not differ significantly from Figure 9-2. However, the alignment of the DMC exchange program transmission pipeline and the Zone F transmission pipeline may vary from the alignments shown on Figure 9-2.

Three alignment alternatives were considered for the DMC exchange pipeline, as illustrated on Figure 9-3. It should be noted that all three alignments assume that the discharge of recycled water to the DMC will be required to occur downstream of the City's JJWTP intake per initial discussions with the SWRCB and the USBR. Alternative (shorter) pipeline alignments may be possible if the location for the discharge of recycled water to the DMC can be relocated to a location upstream of the City's JJWTP intake.

The three alignment alternatives are described as follows:

- The Alternative A pipeline would tie into the Zone A transmission pipeline in Lammers Road at the intersection of Lammers Road and Valpico Road. It would consist of approximately 23,700 feet of pipeline constructed in Valpico Road, Corral Hollow Road, Linne Road, and Tracy Boulevard. The Alternative A pipeline would be Zone A. Although Alternative A is the longest of the three alignment alternatives, the entire alignment for Alternative A is within existing streets.

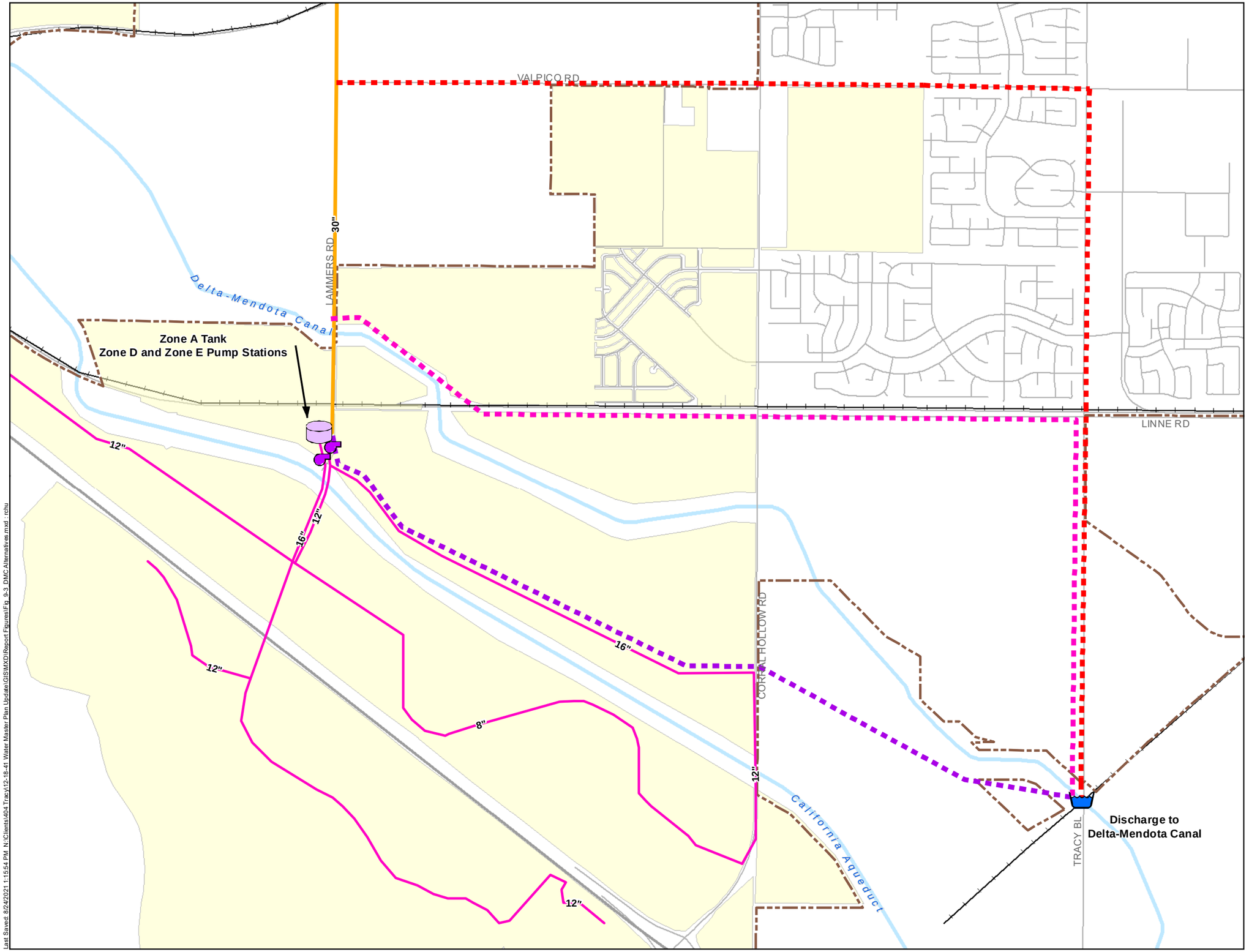
- The Alternative B pipeline would tie into the Zone A transmission pipeline in Lammers Road just north of the DMC, and would consist of approximately 19,100 feet of pipeline running along the south edge of the Ellis Specific Plan, in Linne Road, and in Tracy Boulevard. The Alternative B pipeline would be Zone A. Part of the alignment for Alternative B is along the south edge of the Ellis Specific Plan, not within an established right-of-way, and may require an easement.
- The Alternative C pipeline would be supplied directly from the Zone A reservoir, and would consist of approximately 14,200 feet of pipeline running through Tracy Hills Phase 5 and land currently used for mining. Alternative C may require a dedicated pump station to ensure sufficient head in the exchange pipeline for discharge to the DMC. Part of the alignment for Alternative C is not within an established right-of-way and passes through a quarry, which may require an easement and possibly difficult construction conditions.

For this WSMP Update, it was assumed that Alternative A will be selected as it follows existing street alignments and therefore would likely be the most straight-forward in terms of design and construction, although it is the longest of the three pipeline alignment alternatives. Because it is the longest alignment it is also the most conservative alternative for budgeting purposes.

Similarly, the alignment of the Zone F transmission pipeline depicted on Figure 9-2 was selected to provide a conservative cost estimate. It is recommended that detailed pipeline alignment alternative studies be conducted before either the DMC exchange program transmission pipeline or the Zone F transmission pipeline are constructed.

9.4.8 Recycled Water Pipeline Sizes

The proposed recycled water backbone distribution system pipelines range in size from a minimum of 8-inch diameter to a maximum of 30-inch diameter. A Hazen-Williams friction "C" factor of 130 was used in the hydraulic model. This "C" factor was used for PVC pipelines (16-inch diameter or smaller) and lined ductile iron or steel pipelines (24-inch diameter or larger). Pipeline diameters were based on those recommended in the optimization study, with adjustments to meet the system performance criteria outlined in Chapter 6.



Symbology

- Future Booster Pump Station
- Future Storage Tank
- Delta Mendota Canal Discharge Point
- Future Distribution Pipeline (Diameter ≤ 16 inches)
- Future Transmission Pipeline (Diameter > 16 inches)

Delta Mendota Canal Pipeline Alternatives

- A
- B
- C
- Future Recycled Water Use Area
- Sphere of Influence

Notes:
1. Future facilities for Zone C not shown on this figure, as the configuration of this zone is dependent on the Delta Mendota Canal pipeline alternative selected for construction.

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Figure 9-3

DMC Exchange Pipeline Alternatives

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9.5 RECYCLED WATER SYSTEM CRITERIA

Evaluation of the proposed Citywide recycled water distribution system utilizes criteria that are different from the criteria used to evaluate the potable water system. The proposed evaluation criteria developed for the recycled water system are described in Chapter 6. In summary, because maximum day recycled water demands typically occur during approximately an eight hour per day period between 10:00 pm and 6:00 am (instead of the typical 24-hour period of the potable water system), and peak hour demands are only slightly greater than maximum day demands as described in Chapter 4, recycled water pipeline water velocity must be lower than in potable water systems to help reduce energy/power costs, thus lowering operational costs.

As described in Chapter 6, the desired recycled water system delivery pressure ranges from a minimum of 60 psi to a maximum of 100 psi. Recycled water pipeline water velocity must be less than 10 feet per second (fps) to avoid potential damage to pipelines, and velocity less than 6 fps is preferred. Pipeline velocities greater than 6 feet per second would cause excess friction pressure loss and would require larger pump station power requirements and greater pipeline pressure near the pump stations.

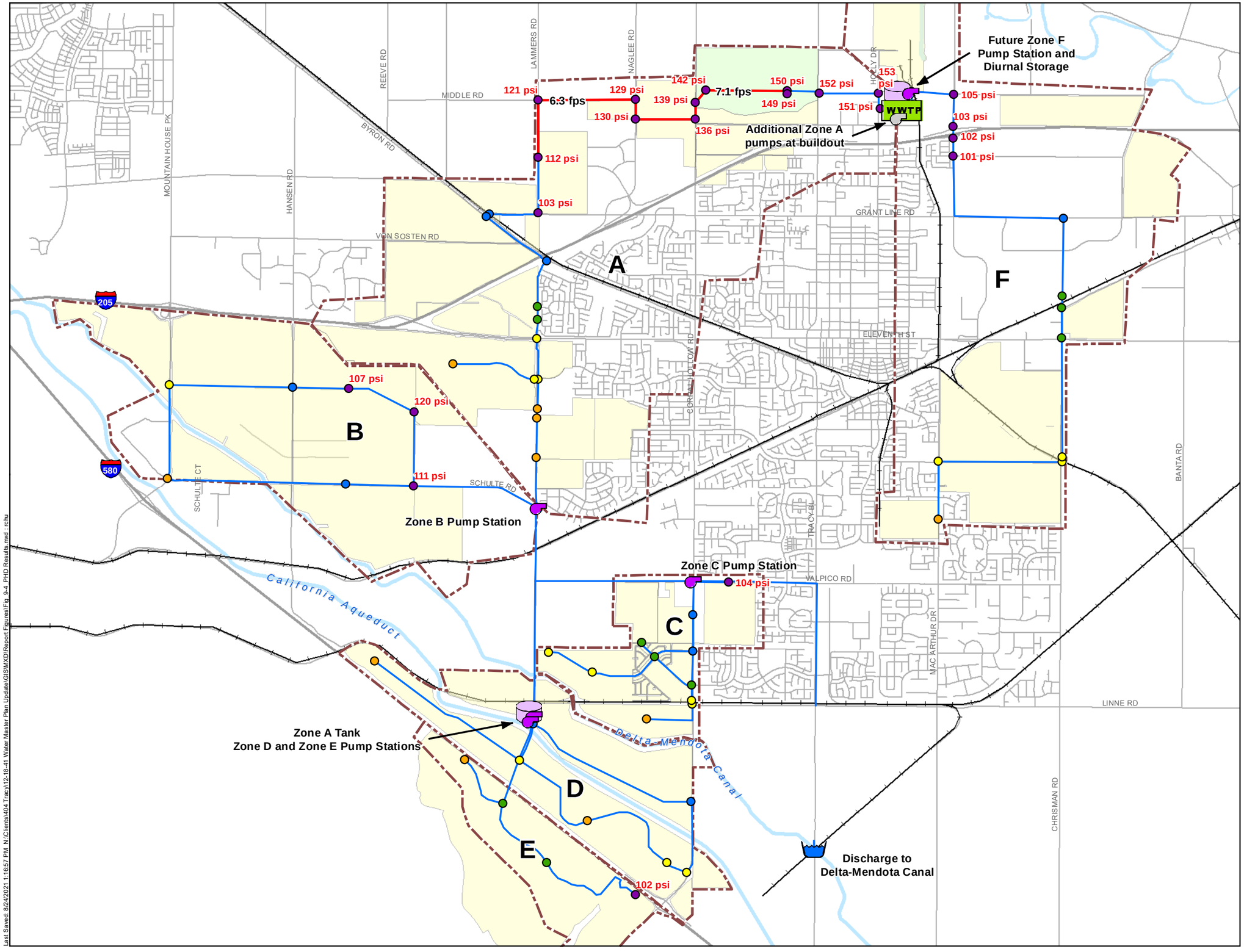
9.6 RECYCLED WATER SYSTEM EVALUATION RESULTS

Typical recycled water systems must deliver the greatest flow during a peak hour demand condition, which coincides with the middle of an assumed 8-hour irrigation period. However, due to the planned recycled water exchange program, in some portions of the City's planned recycled water system, the flow during the remaining 16 hours of the day (the "fill period") may exceed that of the peak hour. Therefore, the City's recycled water hydraulic model was used to evaluate the buildout recycled water system under peak hour demand and fill period conditions.

9.6.1 Peak Hour Demand Scenario

During a peak hour demand scenario, evaluation results indicate that the buildout recycled water system could adequately deliver peak hour demands to meet the City's minimum pressure criterion of 60 psi at all existing and future recycled water service locations as illustrated on Figure 9-4. It should be noted that many locations in the recycled water system will experience pressures greater than 100 psi during a peak hour demand condition; the pressures at these locations are labeled on Figure 9-4. Some locations in Zone A near the WWTP may experience pressures as high as 153 psi, during a peak hour demand condition and even higher pressures during tank fill periods as described below. Service connections in these areas should be fitted with individual PRVs as needed.

As illustrated on Figure 9-4, some of the existing Zone A transmission pipelines will experience velocities exceeding 6 fps during a peak hour demand condition. However, the velocity in these pipelines is well below the maximum allowable velocity of 10 fps, and therefore no mitigation is recommended.



Notes:
1. Pressure Zones represent approximate boundaries.
2. The City's recycled water hydraulic model is not an all pipes model. Some pipes which are not hydraulically significant were excluded from the model.
3. Pressures not shown for locations with no expected recycled water services.

Figure 9-4

Buildout Recycled Water Peak Hour Demand

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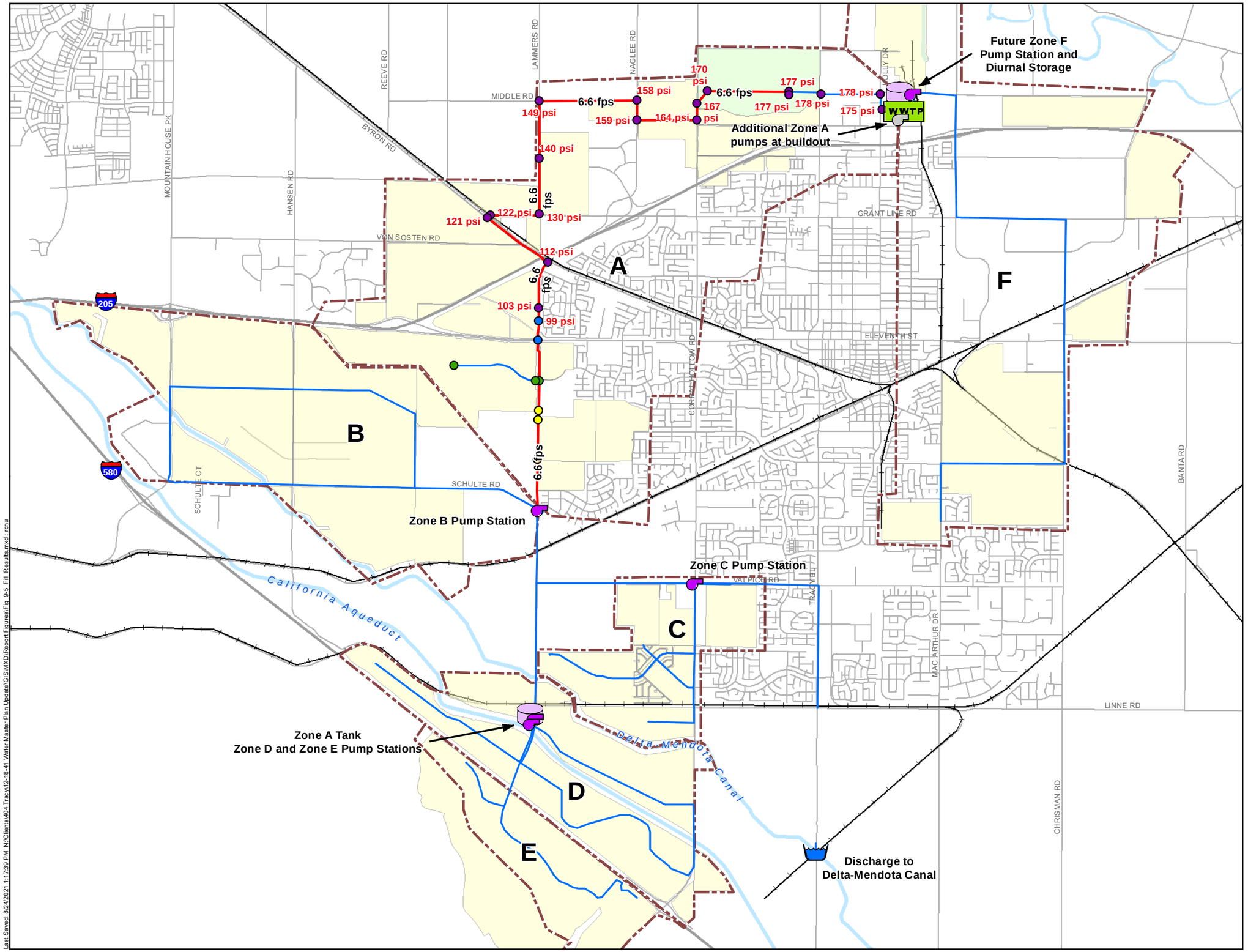
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9.6.2 Fill Period Scenario

During a fill period on a maximum demand day, results indicate that the buildout recycled water system could adequately re-fill the Zone A Tank while supplying 4.1 mgd to the DMC for the recycled water exchange program. As shown on Figure 9-5, some locations in the recycled water system will experience pressures greater than 100 psi during a fill period; some locations in Zone A near the WWTP may experience pressures as high as 178 psi. The pressures at these locations are labeled on Figure 9-5. Service connections in these areas should be fitted with individual PRVs as needed.

The feasibility of operating the planned Zone B Pump Station as an in-line booster station to assist in refilling the tank and supplying the DMC during the maximum day fill period was investigated. If feasible, this would reduce the high pressures in Zone A near the WWTP. However, the planned capacity of the Zone B Pump Station is insufficient to supply the required flow and therefore cannot reduce the high pressures in Zone A.

As illustrated on Figure 9-5, some of the existing Zone A transmission pipelines will experience velocities exceeding 6 fps during a fill period. However, the velocity in these pipelines is well below the maximum allowable velocity of 10 fps, and therefore no mitigation is recommended.



Symbology

Zone A Pressure

- Less than 60 psi
- 60 psi to 70 psi
- 70 psi to 80 psi
- 80 psi to 90 psi
- 90 psi to 100 psi
- Greater than 100 psi

Pipeline Velocity

- Velocity ≤ 6 fps
- Velocity > 6 fps

Proposed Future Facilities

- Future Booster Pump Station
- Future Storage Tank
- Delta Mendota Canal Discharge Point

Existing System Facilities

- Existing Booster Pump Station
- WWTP Wastewater Treatment Plant
- Legacy Fields
- Future Recycled Water Use Area
- Recycled Water Pressure Zone

Notes:
1. Pressure Zones represent approximate boundaries.
2. The City's recycled water hydraulic model is not an all pipes model. Some pipes which are not hydraulically significant were excluded from the model.
3. Pressures shown for Zone A service locations only.

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Figure 9-5

Buildout Recycled Water Fill Period

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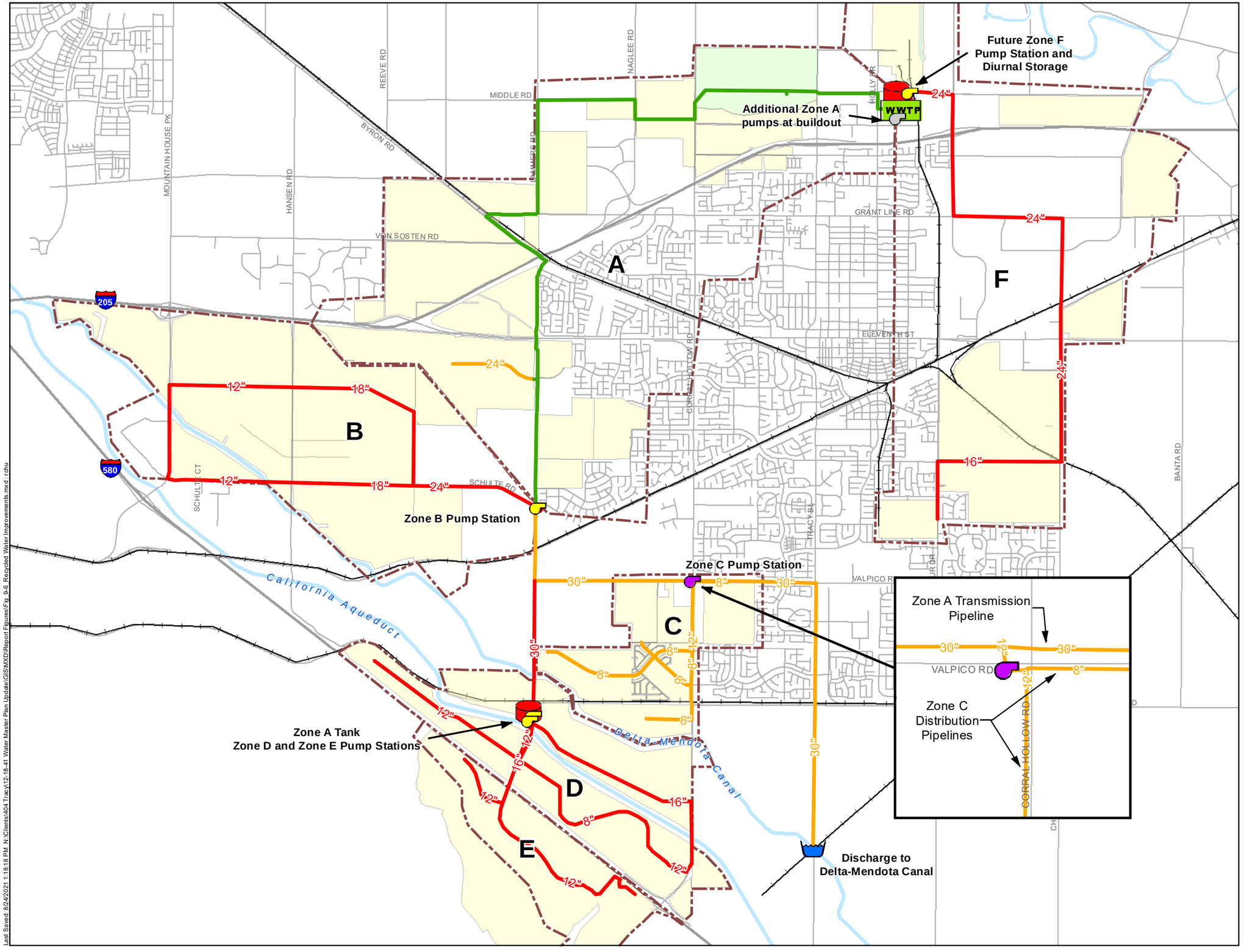
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9.7 SUMMARY OF RECOMMENDED FUTURE RECYCLED WATER SYSTEM IMPROVEMENTS

The recommended backbone recycled water system improvements required to serve future recycled water demands and the recycled water exchange program are summarized below and illustrated on Figure 9-6. It should be noted that these recommendations only identify facility improvements at a master plan level and do not necessarily include all required on-site infrastructure nor constitute design of improvements. Subsequent detailed design is required to determine the exact sizes and final locations of these proposed facility improvements.

Because the City's recycled water program is still in its infancy, many planning factors used to size the system were based on industry averages or standard practice, due to the lack of data specific to the City of Tracy. As the recycled water system continues to expand and serve more customers, and as more data becomes available, the recommendations in this chapter should be periodically reviewed and revised to better fit the needs of the City's recycled water use profile.

It should also be noted that the future hydraulic model is not an "all pipes" model (i.e., not all smaller diameter pipelines are included); therefore, the hydraulic simulations performed as discussed above may not identify all necessary water system improvements. Consequently, it is recommended that further hydraulic evaluations be performed as additional details are provided for each future development project.



Symbology

Proposed Buildout Facilities

- Buildout Booster Pump Station
- Future Storage Tank
- Buildout System Pipeline

Proposed 2025 Facilities

- 2025 Booster Pump Station
- 2025 System Pipeline
- Delta Mendota Canal Discharge Point

Existing System Facilities

- Existing Booster Pump Station
- WWTP Wastewater Treatment Plant
- Existing Transmission Pipeline (Diameter >16 inches)
- Legacy Fields
- Future Recycled Water Use Area
- Recycled Water Pressure Zone

Notes:
1. Install a PRV on any service connection with peak hour or fill period pressures exceeding 100 psi.
2. Install SCADA system monitoring of flows and pressures at each new facility.

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Figure 9-6

Proposed Future Recycled Water System Improvements

City of Tracy
Water System Master Plan Update

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9.7.1 2025 System Improvements

The recommended backbone recycled water system improvements required to serve 2025 recycled water demands are summarized below and shown on Figure 9-6. Planning and design for these improvements should be conducted so that these improvements can be constructed and operational by 2025.

9.7.1.1 Booster Pumping Facilities

- Zone C BPS: Install a new booster pump station with a minimum pumping capacity of 1,700 gpm.

9.7.1.2 Pipelines

- To serve 2025 recycled water demands, install approximately 33,810 linear feet of new pipelines ranging in diameter from 12 to 30 inches; included in these pipelines is the pipeline needed to discharge recycled water to the DMC as part of the recycled water exchange program (as described above, the exchange program is an essential part of the City's projected future water supply portfolio and should be implemented as soon as possible).
- To serve 2025 recycled water demands, install additional new pipelines of 16 inches in diameter or less within individual development projects; the total length of pipelines needed to serve 2025 recycled water demands is unknown, as not all 2025 development areas have detailed recycled water system infrastructure plans prepared.

9.7.1.3 Interconnections

- Install an individual PRV on any recycled water service connection with a peak hour or fill period pressure exceeding 100 psi.

9.7.1.4 SCADA System

- Install SCADA system monitoring of flows and pressures at each new water supply facility to provide operators with real-time system data and flexibility in system operations.

9.7.2 Buildout System Improvements

The recommended backbone recycled water system improvements required to serve buildout recycled water demands are summarized below and shown on Figure 9-6. Planning and design for these improvements should be conducted so that these improvements can be constructed and operational as soon as possible, as funding is available, so that recycled water supplies can be used to meet landscape irrigation and other non-potable water demands to minimize the use of potable water supplies for these uses.

9.7.2.1 Storage Facilities

Note: Because the actual dimensions of each proposed storage facility have not been determined, the storage facility sizes below do not include dead and freeboard storage requirements, which will be determined during design.

- Zone A Tank: Install a new storage tank with a minimum active storage capacity of 5.7 MG.
- WWTP Diurnal Storage: Install a new storage tank with a minimum active storage capacity of 2.3 MG; the need for this storage will depend on WWTP diurnal flow patterns, and it is recommended that the City re-evaluate the required diurnal storage at the WWTP by performing a diurnal flow study in 2040.

9.7.2.2 Booster Pumping Facilities

- Zone A BPS Expansion: Install additional Zone A booster pumps with a minimum pumping capacity of 3,472 gpm.
- Zone B BPS: Install a new booster pump station with a minimum pumping capacity of 5,780 gpm; note that it is expected this booster pump station will be constructed after 2025, but well before 2040.
- Zone D BPS: Install a new booster pump station with a minimum pumping capacity of 2,700 gpm.
- Zone E BPS: Install a new booster pump station with a minimum pumping capacity of 2,000 gpm.
- Zone F BPS: Install a new booster pump station with a minimum pumping capacity of 4,400 gpm.

9.7.2.3 Pipelines

- To serve buildout recycled water demands, install approximately 109,300 linear feet of new pipelines (in addition to the proposed 2025 pipelines) ranging in diameter from 12 to 30 inches.
- To serve buildout recycled water demands, install additional new pipelines of 16 inches in diameter or less within individual development projects; the total length of pipelines needed to serve buildout recycled water demands is unknown, as most buildout development areas do not have detailed recycled water system infrastructure plans prepared.

9.7.2.4 Interconnections

- Install an individual PRV on any recycled water service connection with a peak hour or fill period pressure exceeding 100 psi.

9.7.2.5 SCADA System

- Install SCADA system monitoring of flows and pressures at each new water supply facility to provide operators with real-time system data and flexibility in system operations.

CHAPTER 10
Recommended Capital Improvement Program

10.1 OVERVIEW

This chapter presents the recommended capital improvement program (CIP) for the City's existing and future potable water systems and proposed future recycled water system to support the City's projected future potable and recycled water demands, respectively. Recommended improvements to the existing and future potable water systems were described in Chapters 7 and 8, respectively. In addition, infrastructure recommendations for the proposed future recycled water system were described in Chapter 9. It should be noted that the recommended CIP only identifies improvements at a Master Plan level and does not necessarily include all required on-site infrastructure or constitute design of improvements. Subsequent detailed design is required to determine the exact sizes and locations of these proposed improvements.

This chapter provides a summary of the recommended capital improvement projects, along with estimates of probable construction costs. Probable construction cost estimates have been developed for each proposed improvement project, and will then allocated to existing rate payers and new development based on the need for and benefit provided by the proposed improvement. For example, the cost for a pipeline improvement to increase the fire flow availability in the existing potable water system will be allocated to existing rate payers, but a new pipeline required to serve buildout potable water demands will be allocated to new development. An additional analysis to evaluate the potential development impact fees that will be required to fund the buildout potable and recycled water system capital improvement costs will be provided in a separate memorandum.

Construction costs are presented in 2020 dollars and were developed based on bids from other municipal water facility design projects and standard cost estimating guides. Consistent with the 2012 WSMP, the total CIP cost includes mark-ups equal to 40 percent of the estimated base construction costs to allow for general contingency, design and planning, construction management, and program administration as listed below:

- General Contingency: 15 percent
- Design and Planning: 10 percent
- Construction Management: 10 percent
- Program Administration: 5 percent

For this Citywide Water System Master Plan Update, it is assumed that land for buildout potable and recycled water facilities, if required, will be acquired at $190,000 per acre. Costs for land acquisition will only be added to major facilities (e.g., tank sites), where a large parcel is required. Consequently, land acquisition costs do not include right-of-way acquisition costs for transmission and distribution mains. In addition, the proposed construction costs do not include costs for acquisition of additional surface water supplies, supply reliability, or for annual operation and maintenance. A complete description of the assumptions used in the development of the estimated probable construction costs is provided in Appendix E.

This CIP excludes non-backbone facilities that only serve a specific development area, as costs associated with those facilities will be borne solely by the corresponding developers. For example, while facilities to serve specific development areas were evaluated as part of the overall buildout potable and recycled water system operations, costs for facilities recommended for specific development areas are not included in the CIP. Costs for development-specific infrastructure will be evaluated in conjunction with separate planning efforts prepared for those developments.

This Citywide Water System Master Plan Update only includes costs for backbone system facilities with more widespread system benefit, henceforth known as program facilities. Costs for program facilities will be allocated to new developments proportionally based on projected demand. These cost allocations will be evaluated and presented in a separate report.

The following sections of this chapter describe the components of the potable and recycled water system capital improvement program developed for this Citywide Water System Master Plan Update:

- Recommended Potable Water System Capital Improvement Program
- Recommended Recycled Water System Capital Improvement Program
- Capital Improvement Program Implementation

10.2 RECOMMENDED POTABLE WATER SYSTEM CAPITAL IMPROVEMENT PROGRAM

Summaries of the recommended capital improvement projects for the existing, 2025, and buildout potable water systems are presented below in *Section 10.2.1 Existing Potable Water System Improvements*, *Section 10.2.2 2025 Potable Water System Improvements*, and *Section 10.2.3 Buildout Potable Water System Improvements*, respectively. Each section contains a table with preliminary capital cost estimates for the recommended potable water system improvements for the corresponding time horizon. *Section 10.2.4 Water Treatment Plant Expansion Costs* discusses how the costs for the 2008 JJWTP expansion are to be allocated amongst future developments. All potable water system costs are summarized in *Section 10.2.5 Summary of Recommended Potable Water System CIP Costs*, which also discusses the proposed cost allocation between existing rate payers and new development.

10.2.1 Existing Potable Water System Improvements

Chapter 7 evaluated the ability of the City's existing potable water system to meet the recommended water system operational and design criteria described in Chapter 6. Based on the existing potable water system evaluation, improvements were recommended to eliminate existing system hydraulic capacity deficiencies, as listed in the following section. These improvements are recommended based on existing water system demands, and are not triggered by projected future water demands from new development. These improvements should be completed as soon as possible to eliminate existing system deficiencies.

- Pipeline Improvement[1]
  - — Replace the existing pipelines in 20th Street between Bessie Avenue and Parker Avenue, Wall Street between Lowell Avenue and 20th Street, Emerson Avenue between Bessie Avenue and Holly Drive, Court Drive between Whittier Avenue and Lowell Avenue, and Lowell Avenue between Parker Avenue and Holly Drive with approximately 6,000 linear feet (lf) of new 8-inch diameter pipelines.
  - — Install approximately 515 lf of 12-inch diameter pipeline in Ninth Street between School Street and Tenth Street.
  - — Replace approximately 485 lf of existing 4-inch diameter pipeline in Tracy Boulevard north of Mount Diablo Avenue with new 12-inch diameter pipeline. This improvement was previously recommended in the 2012 WSMP.

The locations of the recommended existing potable water system improvement projects are shown on Figure 10-1. Preliminary capital cost estimates for the recommended existing potable water system improvements are presented in Table 10-1.

It is also recommended that the City implement a renewal and replacement (R&R) program to proactively replace aging and deteriorating water pipelines before they fail. This Citywide Water System Master Plan Update does not include costs for replacement of aging infrastructure. Therefore, it is recommended that the City perform a separate study which evaluates the condition of existing water system assets and develops a prioritized list and annual budget for asset replacement based on age, material, failure history, and other parameters.

[1] The existing hydraulic model is not an "all pipes" model; therefore, the hydraulic simulations performed may not identify all necessary water system improvements. Consequently, it is recommended that City staff review older parts of the water system, where smaller diameter pipelines are typically found and consider possible upsizing of these pipelines, as the City plans for future pipeline renewal and replacement projects.

Table 10-1. Probable Construction Costs for Recommended Existing Potable Water System CIP[a]

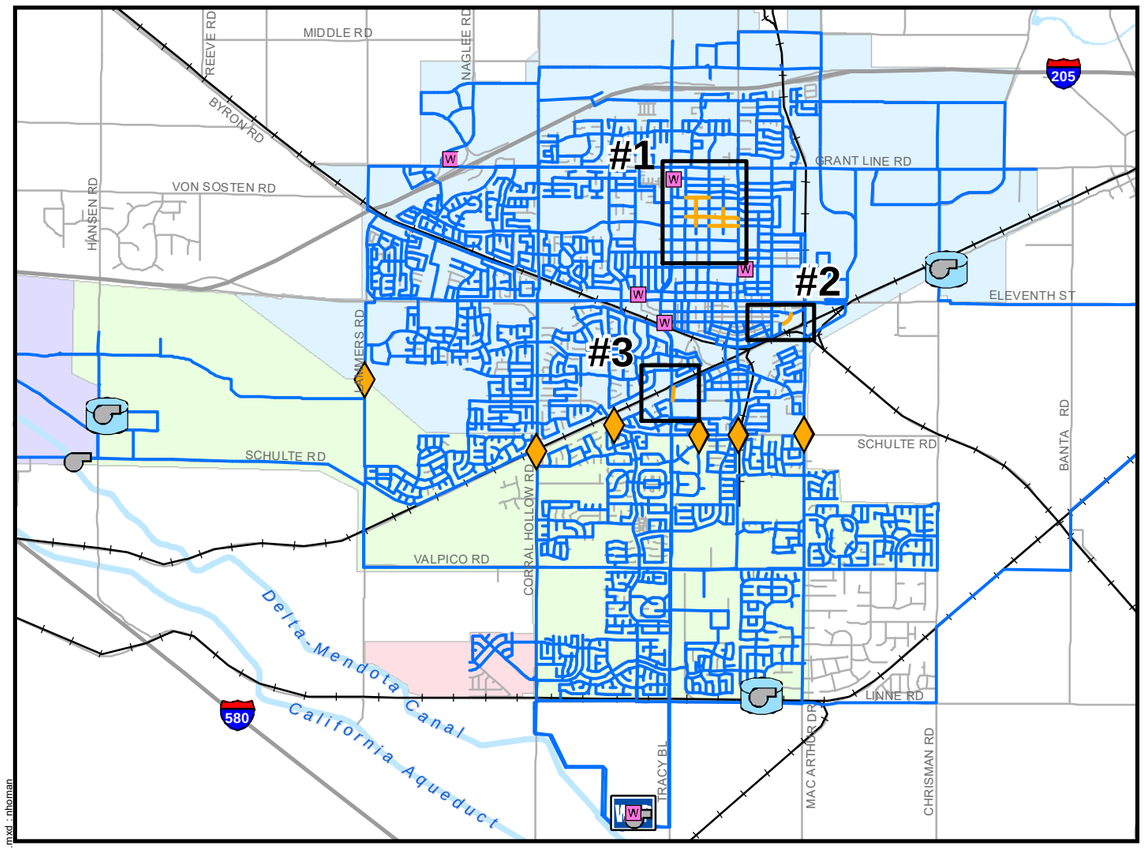
Improvement Type	Improvement Description	CIP ID	Quantity		Estimated Construction Cost, dollars[b]	CIP Cost, dollars (includes mark-ups)[c,d]
Pipeline Improvement	Replace existing pipelines in 20th Street between Bessie Avenue and Parker Avenue, Wall Street between Lowell Avenue and 20th Street, Emerson Avenue between Bessie Avenue and Holly Drive, Court Drive between Whittier Avenue and Lowell Avenue and Lowell Avenue between Parker Avenue and Holly Drive with 8-inch diameter pipe.	ECIP-PI-1	6,000	lf	1,140,000	1,596,000
Pipeline Improvement	Install 12-inch diameter pipe in Ninth Street between School Street and Tenth Street	ECIP-PI-2	515	lf	133,900	187,000
Pipeline Improvement	Replace existing 4-inch diameter pipes on Tracy Boulevard, between Fourth Street and Mt. Diablo Avenue with 12-inch diameter pipes	ECIP-PI-3	485	lf	126,100	177,000
					Total	**$ 1,960,000**

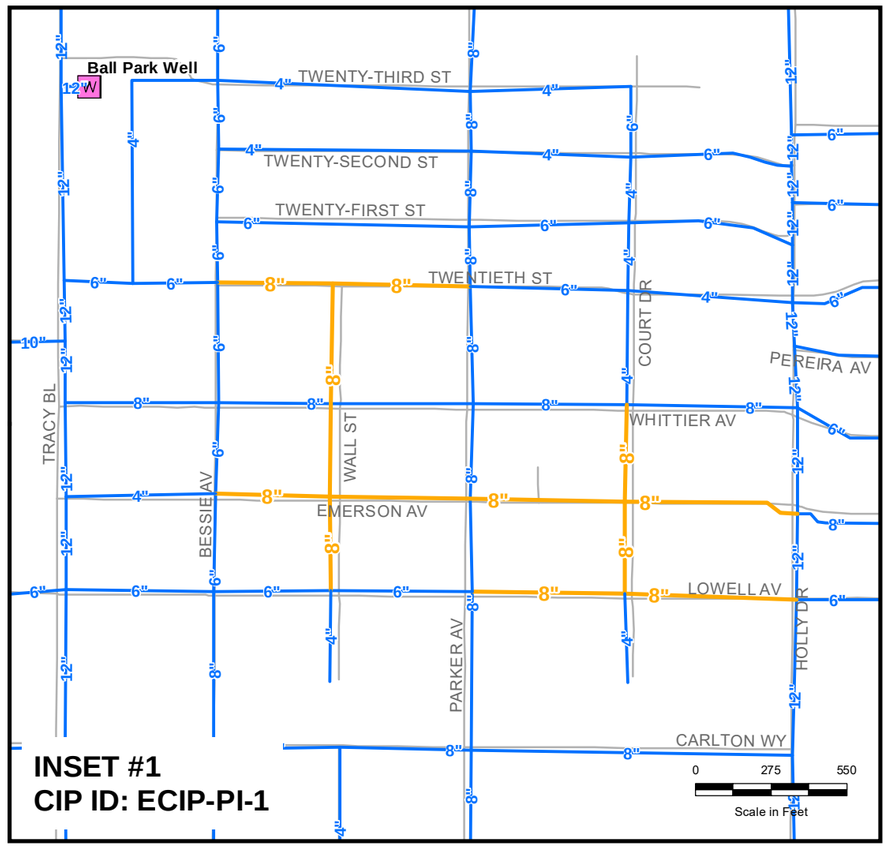
(a) Costs shown are presented in 2020 dollars.

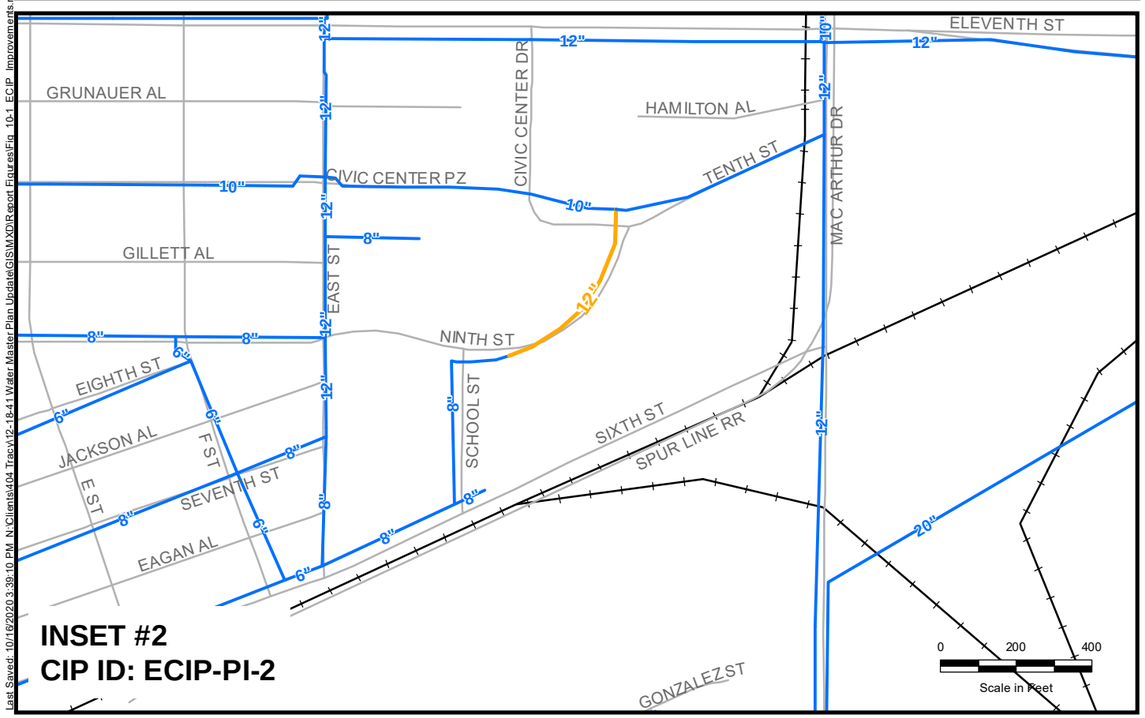
(b) Estimated construction costs do not reflect an adjustment to account for the current economic bidding climate.

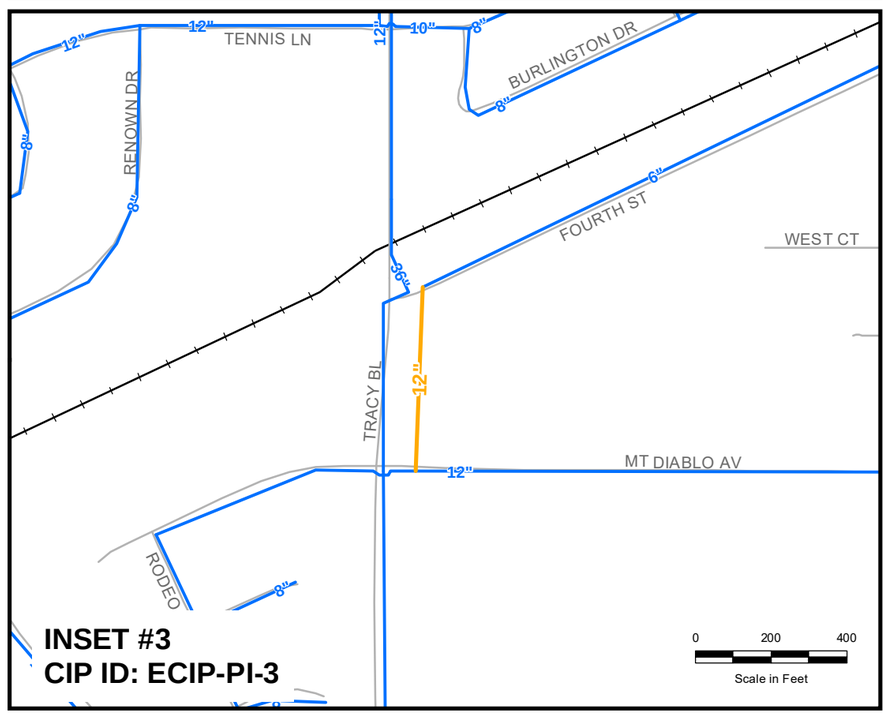
(c) Costs include mark-ups equal to 40 percent (General Contingency: 15 percent; Design and Planning: 10 percent; Construction Management: 10 percent; and Program Administration: 5 percent).

(d) Total rounded to nearest $1,000.









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Symbology

- Existing Pipeline
- Pipeline Improvement
- Pressure Regulating Station
- Booster Pump Station
- Groundwater Well
- Storage Tank
- WTP John Jones Water Treatment Plant

Pressure Zone

- Zone 1
- Zone 2
- Zone 3 (IPC/PPBP)
- Ellis Reduced Zone

Notes:
1. The City's existing hydraulic model is not an all pipes model. Some pipes which are not hydraulically significant were excluded from the model.

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Figure 10-1

Recommended Existing Potable Water System Improvements

City of Tracy
Water System Master Plan Update

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10.2.2 2025 Potable Water System Improvements

Chapter 8 summarized the evaluation of the City's 2025 potable water system and its ability to meet the recommended water system operational and design criteria described in Chapter 6. Based on the 2025 potable water system evaluation, the following backbone water system improvements were recommended to meet projected 2025 potable water demands. **Only program facilities are listed below; the complete list of recommended 2025 potable water system improvements (including non-program facilities) and their recommended timing can be found in Chapter 8.**

- Pipeline Improvements[2]
  - To serve 2025 potable water demands, replace existing pipelines in Sixth Street, Tracy Boulevard, and Eleventh Street with approximately 1,390 linear feet of new 18-inch and 24-inch diameter pipelines.
  - To serve 2025 potable water demands, jack and bore approximately 160 linear feet of new pipelines. This represents one (1) jack and bore installation.
- New Pipelines plus Jack and Bore
  - To serve 2025 potable water demands, install approximately 43,010 linear feet of new pipelines ranging in diameter from 12 to 24 inches.
  - To serve 2025 potable water demands, jack and bore approximately 1,050 linear feet of new pipelines. This represents four (4) distinct jack and bore installations.
- Interconnections
  - Install PRVs at Schulte Road and Bud Lyons Way and at Schulte Road and Pavillion Parkway before the transmission main in Schulte Road is re-zoned to Zone 3.
- Re-zoning
  - Re-zone the existing transmission mains in Lammers Road, Schulte Road, and Hansen Road from Zone 2 to Zone 3 as described in Appendix D. The capital costs of pipelines and other new facilities which need to be constructed prior to re-zoning are included in their respective categories. The capital cost of the re-zoning itself is assumed to be insignificant.
- Groundwater Wells
  - Provide ammonia addition for existing City wells (Lincoln Well, Lewis Manor Well, Park & Ride Well and Ball Park Well) (as noted below under Buildout System Improvements, all future wells are also recommended to be equipped with ammonia addition).
  - A feasibility study is recommended to develop an implementation plan for future ASR expansion (see additional discussion in Chapters 5 and 8).

[2] The buildout hydraulic model was developed as a backbone system and is not an "all pipes" model; therefore, the hydraulic simulations performed may not identify all necessary water system improvements. Consequently, it is recommended that further hydraulic evaluations be performed as additional details are provided for each future development project.

The locations of the recommended 2025 potable water system improvement projects are shown on Figure 10-2. Preliminary capital cost estimates for the recommended 2025 potable water system improvements are presented in Table 10-2. Detailed maps illustrating the proposed pipeline projects for the 2025 potable water system are provided in Appendix F.

10.2.3 Buildout Potable Water System Improvements

Chapter 8 also summarized the evaluation of the City's buildout potable water system and its ability to meet the recommended water system operational and design criteria described in Chapter 6. Based on the buildout potable water system evaluation, the following backbone water system improvements were recommended to meet projected buildout potable water demands. **Only program facilities are listed below; the complete list of recommended buildout potable water system improvements (including non-program facilities) and their recommended timing can be found in Chapter 8.**

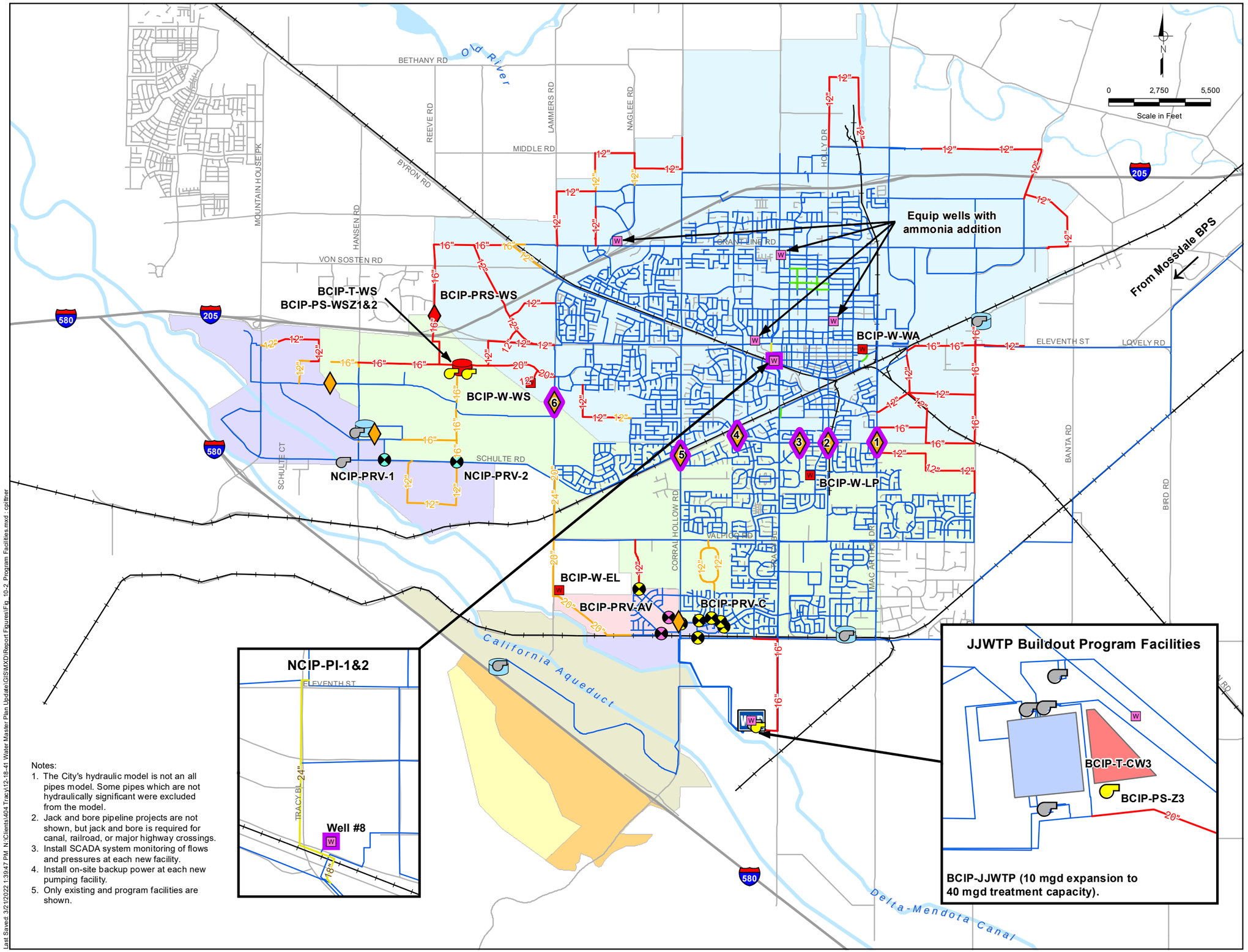
- Land Acquisition
  - To account for land acquisition costs, it was assumed that 1.5 acres will be required for each tank site.
  - To account for land acquisition costs, it was assumed that 0.25 acres will be required for each ASR well site.

- Storage Reservoir

  Note: Because the actual dimensions of each proposed storage tank have not been determined, the recommended storage facility sizes do not include dead and freeboard storage requirements, which will be determined during design.

  - To provide buildout water storage capacity, installation of the following storage facilities is recommended:
    - Westside Tank - 1.0 MG
    - Install a new clearwell at the JJWTP with a minimum active storage capacity of 1.0 MG to provide storage for Zone 3. It is assumed that the existing JJWTP site can accommodate this new clearwell (i.e., land acquisition is not necessary).

- Groundwater Well
  - To provide emergency and dry year water supply, installation of the following groundwater wells is recommended:
    - Westside - ASR well with a minimum firm pumping capacity of 2,500 gpm
    - Wainwright - ASR well with a minimum firm pumping capacity of 2,500 gpm
    - Larsen Park - ASR well with a minimum firm pumping capacity of 2,500 gpm
    - Ellis - ASR well with a minimum firm pumping capacity of 1,000 gpm
    - All new groundwater wells should be equipped with ammonia addition and backup power



Notes:
1. The City's hydraulic model is not an all pipes model. Some pipes which are not hydraulically significant were excluded from the model.
2. Jack and bore pipeline projects are not shown, but jack and bore is required for canal, railroad, or major highway crossings.
3. Install SCADA system monitoring of flows and pressures at each new facility.
4. Install on-site backup power at each new pumping facility.
5. Only existing and program facilities are shown.

Symbology

Proposed Buildout Program Facilities
- Buildout Pressure Regulating Station
- Buildout Pressure Reducing Valve
- Buildout Booster Pump Station
- Buildout Groundwater Well
- Buildout Storage Tank
- Buildout System Pipeline
- SCADA System Improvement

Proposed 2025 Facilities
- 2025 Pressure Reducing Valve
- 2025 System Pipeline
- 2025 Pipeline CIP

Existing System Facilities
- Existing Pressure Regulating Station
- Existing Pressure Reducing Valve
- Existing Booster Pump Station
- Existing Groundwater Well
- Existing Storage Tank
- John Jones Water Treatment Plant
- Existing System Pipeline
- Proposed Existing System Pipeline CIP

Pressure Zone
- Zone 1
- Zone 2
- Zone 3
- Ellis Reduced Zone
- Zone 4
- Zone 5
- Zone 6

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Figure 10-2

Recommended Future Potable Water System Program Improvements

City of Tracy
Water System Master Plan Update

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Table 10-2. Probable Construction Costs for Recommended 2025 Potable Water System CIP[a]

Improvement Type	Improvement Description	CIP ID	Quantity		Estimated Construction Cost, dollars[b]	CIP Cost, dollars (includes mark-ups)[c,d]
Shared City-side Facilities						
Pipeline Improvement	Replace existing 12-inch diameter pipeline crossing railroad track with 18-inch diameter pipe. Replace existing 12-inch diameter pipelines in Sixth Street, Tracy Boulevard, and Eleventh Street with 24-inch diameter pipe.	NCIP-PI-1	1,389	lf	627,574	879,000
Jack and Bore Improvement	18-inch diameter (24-inch casing)	NCIP-PI-2	159	lf	109,451	153,000
New Pipeline (Developed Area)	8-inch diameter	NCIP-PD-8	-	lf	-	-
New Pipeline (Developed Area)	10-inch diameter	NCIP-PD-10	-	lf	-	-
New Pipeline (Developed Area)	12-inch diameter	NCIP-PD-12	2,013	lf	523,453	733,000
New Pipeline (Developed Area)	14-inch diameter	NCIP-PD-14	-	lf	-	-
New Pipeline (Developed Area)	16-inch diameter	NCIP-PD-16	1,051	lf	351,924	493,000
New Pipeline (Developed Area)	18-inch diameter	NCIP-PD-18	-	lf	-	-
New Pipeline (Developed Area)	20-inch diameter	NCIP-PD-20	609	lf	243,594	341,000
New Pipeline (Developed Area)	24-inch diameter	NCIP-PD-24	3,426	lf	1,593,146	2,230,000
New Pipeline (Undeveloped Area)	8-inch diameter	NCIP-PU-8	-	lf	-	-
New Pipeline (Undeveloped Area)	10-inch diameter	NCIP-PU-10	-	lf	-	-
New Pipeline (Undeveloped Area)	12-inch diameter	NCIP-PU-12	18,666	lf	4,199,794	5,880,000
New Pipeline (Undeveloped Area)	14-inch diameter	NCIP-PU-14	-	lf	-	-
New Pipeline (Undeveloped Area)	16-inch diameter	NCIP-PU-16	9,270	lf	2,642,003	3,699,000
New Pipeline (Undeveloped Area)	18-inch diameter	NCIP-PU-18	-	lf	-	-
New Pipeline (Undeveloped Area)	20-inch diameter	NCIP-PU-20	7,975	lf	2,711,517	3,796,000
New Pipeline (Undeveloped Area)	24-inch diameter	NCIP-PU-24	-	lf	-	-
Jack and Bore	Boring and Receiving Pits	NCIP-JB-PIT	5	each	200,000	280,000
Jack and Bore	8-inch diameter (16-inch casing)	NCIP-JB-8	-	lf	-	-
Jack and Bore	12-inch diameter (21-inch casing)	NCIP-JB-12	-	lf	-	-
Jack and Bore	16-inch diameter (24-inch casing)	NCIP-JB-16	374	lf	258,046	361,000
Jack and Bore	18-inch diameter (24-inch casing)	NCIP-JB-18	-	lf	-	-
Jack and Bore	20-inch diameter (30-inch casing)	NCIP-JB-20	-	lf	-	-
Jack and Bore	24-inch diameter (36-inch casing)	NCIP-JB-24	677	lf	673,911	943,000
Interconnection	PRV at Schulte Road and Bud Lyons Way	NCIP-PRV-1	1	L.S.	125,000	175,000
Interconnection	PRV at Schulte Road and Pavillion Prkway	NCIP-PRV-2	1	L.S.	125,000	175,000
Groundwater Wells	Equip Lincoln Well, Park & Ride Well, Ball Park Well and Lewis Manor Well with ammonia addition	NCIP-GW-1	1	L.S.	-	1,500,000
ASR Expansion Study	Evaluate future ASR well sites and operational scenarios	NCIP-ASR	1	L.S.	-	350,000
					Total	**$ 21,988,000**

(a) Costs shown are presented in 2020 dollars.
(b) Estimated construction costs do not reflect an adjustment to account for the current economic bidding climate.
(c) Costs include mark-ups equal to 40 percent (General Contingency: 15 percent; Design and Planning: 10 percent; Construction Management: 10 percent; and Program Administration: 5 percent).
(d) Total rounded to nearest $1,000.

- Booster Pump Station[3]
  - To provide buildout water pumping capacity and to convey water from proposed partially buried storage reservoirs, installation of the following pumping facilities is recommended:
    - Zone 3 BPS (JJWTP) – Install additional Zone 3 booster pumps at the JJWTP with a minimum firm pumping capacity of 1,500 gpm
    - Westside Zone 1 Tank - Booster pump station with a minimum firm pumping capacity of 4,500 gpm
    - Westside Zone 2 Tank - Booster pump station with a minimum firm pumping capacity of 2,400 gpm
- New Pipeline plus Jack and Bore[4]
  - To serve buildout potable water demands, install approximately 131,280 linear feet of new pipelines (in addition to the proposed 2025 pipelines) ranging in diameter from 12 to 20 inches.
  - To serve buildout potable water demands, jack and bore approximately 2,750 linear feet of new pipelines. This represents eleven (11) distinct jack and bore installations.
- Interconnection
  - To provide supply during peak demands and/or emergency conditions between pressure zones, installation of the following pressure zone interconnections is recommended:
    - Westside PRS (from Zone 2 into Zone 1)
    - Avenues PRV (from Ellis Reduced Zone into Zone 2)
  - To provide adequate pressure to the Plan C area and prevent the accumulation of stagnant water in dead-end mains, installation of six (6) PRVs is recommended before the Plan C re-zoning occurs (to be funded with Plan C funding).

    Note: The estimated probable construction costs do not include installation of individual PRVs on water service connections with static pressures exceeding 80 psi, as these will be the responsibility of individual developer(s).
- Re-zoning
  - Re-zone the Plan C area from Zone 2 to Zone 3. The capital costs of pipelines and other new facilities which need to be constructed prior to re-zoning are included in their respective categories. The capital cost of the re-zoning itself is assumed to be insignificant.

[3] Cost based on the firm pumping capacity required.

[4] The buildout hydraulic model was developed as a backbone system and is not an "all pipes" model; therefore, the hydraulic simulations performed may not identify all necessary water system improvements. Consequently, it is recommended that further hydraulic evaluations be performed as additional details are provided for each future development project.

- SCADA System and Backup Power
  - Install SCADA system monitoring of flows and pressures at PRS #1-#6 to provide operators with additional understanding and flexibility in system operations.
  - Add remote operation of Well 8 from the SCADA system to provide additional operational flexibility.
  - Install SCADA system monitoring of flows and pressures at each new water supply facility to provide operators with real-time system data and flexibility in system operations. The capital cost for SCADA system installation is included in the cost for these facilities.
  - Install on-site backup power to any proposed buildout system pumping facility to improve supply reliability. The capital cost for backup power is included in the cost for new pump stations.
- JJWTP Expansion
  - A future additional 10 mgd expansion of the JJWTP (for a total treatment capacity of 40 mgd) is recommended to provide the City with additional water treatment capacity, as well as operational flexibility and reliability. The expansion would also include a new administration/maintenance building to accommodate future staffing needs and maintenance activities.
- Participation in Phase 2 Los Vaqueros Reservoir Expansion Project
  - The City's participation in the Phase 2 Los Vaqueros Reservoir Expansion Project would increase the City's water supply reliability by providing storage of supplies for use in dry years.
  - The estimated cost for 5,000 acre-feet of storage for the City will be approximately $10 million plus an additional $1.5 million for implementation and will be shared by existing rate payers and new development.
- Participation in the B.F. Sisk Dam Raise & Reservoir Expansion Project
  - The City's participation in the B.F. Sisk Dam Raise & Reservoir Expansion Project would increase the City's water supply reliability by providing storage of supplies for use in dry years.
  - The estimated cost for 5,000 acre-feet of storage for the City will be approximately $38 million and will be shared by existing rate payers and new development.
- Water Master Plan Updates
  - Regular updates of this Citywide Water System Master Plan are recommended to evaluate potable water and recycled water infrastructure needs to reflect any changes in future development plans, water use trends and patterns, and water supply availability and reliability, as well as new regulations and operational needs as new potable water and recycled water system infrastructure is constructed. It is recommended that updates be prepared at least once every 10 years, or more often if changing conditions warrant more frequent updates. For purposes of this Citywide Water System Master Plan Update, three future updates are planned.

The locations of the recommended buildout program facility improvements are shown on Figure 10-2. Preliminary capital cost estimates for the recommended buildout potable water system improvements are presented in Table 10-3. Detailed maps illustrating the proposed pipeline projects for the buildout potable water system are provided in Appendix F.

10.2.4 Water Treatment Plant Expansion Costs

In 2008, the JJWTP was expanded by 15 mgd to provide additional treatment capacity for future development. While some of this capacity is now utilized by the City's existing water users, it is estimated that 9 mgd of the expansion capacity is still available for future developments to use. To recoup the costs of constructing this remaining 9 mgd of treatment capacity, the City will include a charge for the JJWTP expansion capacity in the developer impact fees. The cost of the 2008 expansion was $45 million, or $3 million per mgd of capacity. Therefore, the remaining JJWTP expansion cost to be allocated amongst future developments is $27 million.

In addition, as discussed in Chapter 8, a future additional 10 mgd expansion of the JJWTP is recommended. The estimated construction cost is $4 million per mgd, or $40 million for the recommended 10 mgd expansion, plus an additional $12 million for a new administration/ maintenance building.

10.2.5 Summary of Recommended Potable Water System CIP Costs

Preliminary capital cost estimates for the recommended existing, 2025, and buildout potable water system improvements are presented in Tables 10-1, 10-2, and 10-3, respectively.

The total existing potable water system CIP cost estimate is $2.0 million, while the total 2025 and buildout potable water system CIP cost estimates (which include only program facilities) are $22.0 million and $211.9 million, respectively. The estimated probable construction costs do not include installation of individual PRVs on potable water service connections with static pressures exceeding 80 psi, as these will be the responsibility of individual developer. The remaining previous JJWTP expansion buy-in cost is $27.0 million.

The total CIP costs from Table 10-1 should be allocated to existing rate payers, while the total CIP costs from Table 10-2 and Table 10-3 and the previous JJWTP expansion buy-in cost should be allocated to new development; with the exception of the costs for the participation in the Phase 2 Los Vaqueros Reservoir Expansion Project which should be shared between existing rate payers and future development.

Table 10-3. Probable Construction Costs for Recommended Buildout Potable Water System CIP[a]

Improvement Type	Improvement Description	CIP ID	Quantity		Estimated Construction Cost, dollars[b]	CIP Cost, dollars (includes mark-ups)[c,d]
Shared City-side Facilities						
Land Acquisition[e]	Tank Sites	BCIP-LA-T	1	sites	-	285,000
Land Acquisition[f]	ASR Well Sites	BCIP-LA-W	4	sites	-	190,000
Storage Reservoir[g]	1.0 MG Clearwell No. 3 at JJWTP	BCIP-T-CW3	1	L.S.	3,008,250	4,212,000
Storage Reservoir[g]	1.0 MG Westside Tank	BCIP-T-WS	1	L.S.	3,008,250	4,212,000
Groundwater Well	2,500 gpm ASR Well in Westside	BCIP-W-WS	1	L.S.	3,900,000	5,460,000
Groundwater Well	2,500 gpm ASR Well in Wainwright	BCIP-W-WA	1	L.S.	3,900,000	5,460,000
Groundwater Well	2,500 gpm ASR Well in Larsen Park	BCIP-W-LP	1	L.S.	3,900,000	5,460,000
Groundwater Well	1,000 gpm ASR Well in Ellis	BCIP-W-EL	1	L.S.	2,500,000	3,500,000
Booster Pump Station[h]	2.16 mgd at Zone 3 Clearwell (JJWTP)	BCIP-PS-Z3	1	L.S.	1,554,755	2,177,000
Booster Pump Station[h]	6.48 mgd at Westside Zone 1 Tank	BCIP-PS-WSZ1	1	L.S.	2,263,735	3,169,000
Booster Pump Station[h]	3.46 mgd at Westside Zone 2 Tank	BCIP-PS-WSZ2	1	L.S.	1,767,450	2,474,000
New Pipeline (Developed Area)	8-inch diameter	BCIP-PD-8	11	lf	2,090	3,000
New Pipeline (Developed Area)	10-inch diameter	BCIP-PD-10	-	lf	-	-
New Pipeline (Developed Area)	12-inch diameter	BCIP-PD-12	-	lf	-	-
New Pipeline (Developed Area)	14-inch diameter	BCIP-PD-14	-	lf	-	-
New Pipeline (Developed Area)	16-inch diameter	BCIP-PD-16	11,349	lf	3,801,881	5,323,000
New Pipeline (Developed Area)	18-inch diameter	BCIP-PD-18	-	lf	-	-
New Pipeline (Developed Area)	20-inch diameter	BCIP-PD-20	1,132	lf	452,853	634,000
New Pipeline (Developed Area)	24-inch diameter	BCIP-PD-24	-	lf	-	-
New Pipeline (Undeveloped Area)	8-inch diameter	BCIP-PU-8	-	lf	-	-
New Pipeline (Undeveloped Area)	10-inch diameter	BCIP-PU-10	-	lf	-	-
New Pipeline (Undeveloped Area)	12-inch diameter	BCIP-PU-12	84,957	lf	19,115,431	26,762,000
New Pipeline (Undeveloped Area)	14-inch diameter	BCIP-PU-14	-	lf	-	-
New Pipeline (Undeveloped Area)	16-inch diameter	BCIP-PU-16	27,691	lf	7,891,999	11,049,000
New Pipeline (Undeveloped Area)	18-inch diameter	BCIP-PU-18	-	lf	-	-
New Pipeline (Undeveloped Area)	20-inch diameter	BCIP-PU-20	6,148	lf	2,090,151	2,926,000
New Pipeline (Undeveloped Area)	24-inch diameter	BCIP-PU-24	-	lf	-	-
Jack and Bore	Boring and Receiving Pits	BCIP-JB-PIT	11	each	440,000	616,000
Jack and Bore	8-inch diameter (16-inch casing)	BCIP-JB-8	-	lf	-	-
Jack and Bore	12-inch diameter (21-inch casing)	BCIP-JB-12	1,489	lf	885,921	1,240,000
Jack and Bore	16-inch diameter (24-inch casing)	BCIP-JB-16	1,257	lf	867,182	1,214,000
Jack and Bore	18-inch diameter (24-inch casing)	BCIP-JB-18	-	lf	-	-
Jack and Bore	20-inch diameter (30-inch casing)	BCIP-JB-20	-	lf	-	-
Jack and Bore	24-inch diameter (36-inch casing)	BCIP-JB-24	-	lf	-	-
Interconnection	Westside PRS (12-inch)	BCIP-PRS-WS	1	L.S.	250,000	350,000
Interconnection	Avenues PRV (12-inch)	BCIP-PRV-AV	1	L.S.	125,000	175,000
SCADA	Well No. 8	BCIP-S-W8	1	L.S.	125,000	175,000
SCADA	Pressure Regulating Station No. 1	BCIP-S-1	1	L.S.	125,000	175,000
SCADA	Pressure Regulating Station No. 2	BCIP-S-2	1	L.S.	125,000	175,000
SCADA	Pressure Regulating Station No. 3	BCIP-S-3	1	L.S.	125,000	175,000
SCADA	Pressure Regulating Station No. 4	BCIP-S-4	1	L.S.	125,000	175,000
SCADA	Pressure Regulating Station No. 5	BCIP-S-5	1	L.S.	125,000	175,000
SCADA	Pressure Regulating Station No. 6	BCIP-S-6	1	L.S.	125,000	175,000
JJWTP Expansion	Expand JJWTP from 30 mgd to 40 mgd and new administration/maintenance building	BCIP-JJWTP	1	L.S.	52,000,000	72,800,000
Participation in Phase 2 Los Vaqueros Reservoir Expansion Project[i]	5,000 acre-feet of storage for dry year use	BCIP-LVE	1	L.S.	11,500,000	11,500,000
Participation in B.F. Sisk Dam Raise & Reservoir Expansion Project[i]	5,000 acre-feet of storage for dry year use	BCIP-SISK	1	L.S.	38,000,000	38,000,000
Water Master Plan Updates	Future updates to Water Master Plan (three updates assumed @ $500,000 per update)	BCIP-WMP	3	each		1,500,000
					Total	**$ 211,916,000**

(a) Costs shown are presented in 2020 dollars.
(b) Estimated construction costs do not reflect an adjustment to account for the current economic bidding climate.
(c) Costs include mark-ups equal to 40 percent (General Contingency: 15 percent; Design and Planning: 10 percent; Construction Management: 10 percent; and Program Administration: 5 percent).
(d) Total rounded to nearest $1,000.
(e) Assumes each tank site is 1.5 acres. Cost includes Westside Tank site.
(f) Assumes each ASR well site is 0.25 acres. Cost includes Westside, Wainwright, Larsen Park, and Ellis ASR Well sites.
(g) Recommended volume based on active volume. Cost assumes the construction of a partially buried prestressed concrete tank.
(h) Recommended capacity based on firm pumping capacity.
(i) Cost for participation in Phase 2 Los Vaqueros Reservoir Expansion Project and B.F. Sisk Dam Raise & Reservoir Expansion Project to be shared by existing rate payers and new development.

10.3 RECOMMENDED RECYCLED WATER SYSTEM CAPITAL IMPROVEMENT PROGRAM

A summary of the recommended capital improvement projects for the recycled water system is presented below in *Section 10.3.1 2025 Recycled Water System Improvements* and *Section 10.3.2 Buildout Recycled Water System Improvements*. Each section contains a table with preliminary capital cost estimates for the recommended recycled water system improvements. These costs are summarized in *Section 10.3.3 Summary of Recommended Recycled Water System CIP Costs*.

10.3.1 2025 Recycled Water System Improvements

Based on the recycled water system evaluation, the following backbone improvements were recommended to meet projected 2025 recycled water demands. **Only program facilities are listed below; the complete list of recommended 2025 recycled water system improvements (including non-program facilities) and their recommended timing can be found in Chapter 9.**

- Booster Pump Station[5]
  - To provide 2025 recycled water pumping capacity, installation of the following pumping facilities is recommended:
    - Zone C BPS - Booster pump station with a minimum pumping capacity of 1,700 gpm.
- New Pipeline plus Jack and Bore[6]
  - To serve 2025 recycled water demands, install approximately 11,370 linear feet of new pipelines ranging in diameter from 8 to 30 inches.
  - To serve 2025 recycled water demands, jack and bore approximately 590 linear feet of new pipelines. This represents 2 distinct jack and bore installations.
  - To deliver recycled water to the DMC as part of the City's planned recycled water exchange agreement with the USBR, install approximately 23,680 linear feet and jack and bore approximately 180 linear feet (in 1 installation) of new, 30-inch diameter pipeline. This assumes Alignment A as depicted on Figure 9-3 is constructed. A detailed alignment study should be conducted to determine the final alignment of the recycled water exchange pipeline. Actual length of the recycled water exchange pipeline may change considerably if a different alignment is selected. A separate line item for program implementation is also included for the City's planned recycled water exchange agreement to account for coordination and negotiations with the USBR and SWRCB which may require additional studies, legal review and assistance and staff and consultant time.

    Note: Within individual developments, additional new pipelines of 16-inch diameter and less will be required. The total length of pipelines needed to serve 2025 recycled water demands is unknown, as some development areas are still preparing recycled water system plans.

[5] Cost based on the firm pumping capacity required.

[6] The buildout hydraulic model was developed as a backbone system and is not an "all pipes" model; therefore, the hydraulic simulations performed may not identify all necessary recycled water system improvements. Consequently, it is recommended that further hydraulic evaluations be performed as additional details are provided for each future development project.

The locations of the recommended 2025 recycled water program facility improvements are shown on Figure 10-3. Preliminary capital cost estimates for the recommended 2025 recycled water system improvements are presented in Table 10-4. Detailed maps illustrating the proposed pipeline projects for the 2025 potable water system are provided in Appendix G.

10.3.2 Buildout Recycled Water System Improvements

As discussed in Chapter 9, the buildout recycled water system is expected to consist of one system that encompasses the entire SOI. Based on the buildout recycled water system evaluation, the following backbone recycled water system improvements were recommended to meet projected buildout recycled water demands. **Only program facilities are listed below; the complete list of recommended buildout recycled water system improvements (including non-program facilities) and their recommended timing can be found in Chapter 9.**

- Land Acquisition
  - To account for land acquisition costs, assume 1.5 acres will be required for each tank site.
- Storage Reservoir

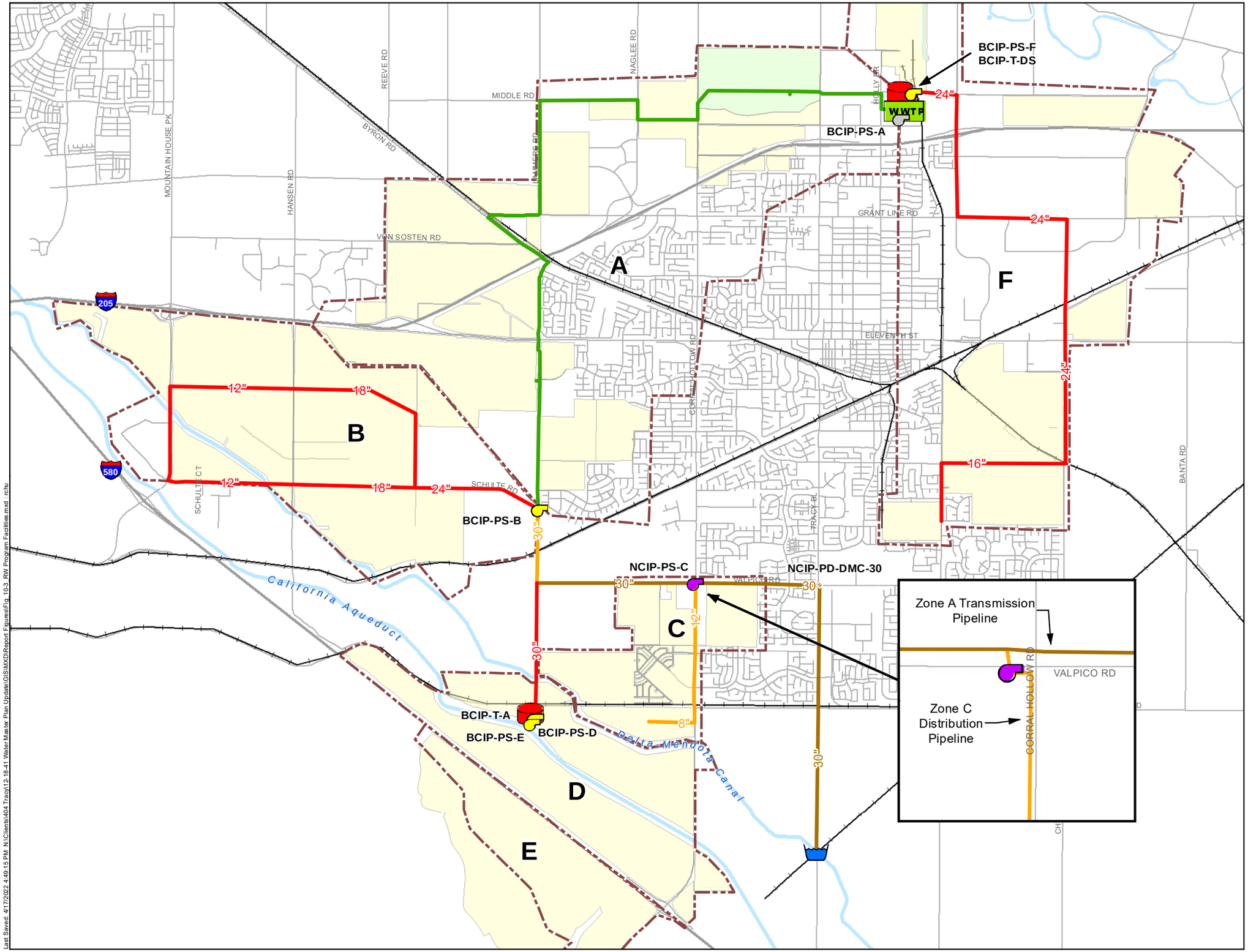
  Note: Because the actual dimensions of each proposed storage tank have not been determined, the recommended storage facility sizes do not include dead and freeboard storage requirements, which will be determined during design.

  - To provide buildout recycled water storage capacity, installation of the following storage facilities is recommended:
    - Zone A Tank – install an above ground, welded steel storage tank with a minimum active storage capacity of 5.7 MG
    - Install a diurnal storage tank at the WWTP with a minimum active storage capacity of 2.3 MG. It is assumed that the existing WWTP site can accommodate this new tank (i.e., land acquisition is not necessary). The need for this storage will depend on WWTP diurnal flow patterns, and it is recommended that the City re-evaluate the required diurnal storage at the WWTP by performing a diurnal flow study in 2040.
- Booster Pump Station
  - To provide buildout recycled water pumping capacity and to convey water from proposed partially buried storage reservoirs, installation of the following pumping facilities is recommended:
    - Zone A BPS Expansion – install additional booster pumps with a minimum pumping capacity of 3,472 gpm
    - Zone B BPS – Booster pump station with a minimum pumping capacity of 5,780 gpm
    - Zone D BPS – Booster pump station with a minimum pumping capacity of 2,700 gpm
    - Zone E BPS – Booster pump station with a minimum pumping capacity of 2,000 gpm
    - Zone F BPS – Booster pump station with a minimum pumping capacity of 4,400 gpm

Table 10-4. Probable Construction Costs for the Recommended 2025 Recycled Water System CIP[a]

Improvement Type	Improvement Description	CIP ID	Quantity		Estimated Construction Cost, dollars[b]	CIP Cost, dollars (includes mark-ups)[c,d]
Shared City-side Facilities						
Booster Pump Station	2.45 mgd for Zone C	NCIP-PS-C	1	L.S.	1,441,820	2,019,000
New Pipeline (Developed Area)	8-inch diameter	NCIP-PD-8	4,962	lf	868,372	1,216,000
New Pipeline (Developed Area)	10-inch diameter	NCIP-PD-10	-	lf	-	-
New Pipeline (Developed Area)	12-inch diameter	NCIP-PD-12	3,055	lf	778,900	1,090,000
New Pipeline (Developed Area)	14-inch diameter	NCIP-PD-14	-	lf	-	-
New Pipeline (Developed Area)	16-inch diameter	NCIP-PD-16	-	lf	-	-
New Pipeline (Developed Area)	18-inch diameter	NCIP-PD-18	-	lf	-	-
New Pipeline (Developed Area)	20-inch diameter	NCIP-PD-20	-	lf	-	-
New Pipeline (Developed Area)	24-inch diameter	NCIP-PD-24	131	lf	60,939	85,000
New Pipeline (Developed Area)	30-inch diameter	NCIP-PD-30	3,218	lf	1,818,131	2,545,000
New DMC Pipeline (Developed Area)	30-inch diameter	NCIP-PD-DMC-30	23,683	lf	13,380,877	18,733,000
New Pipeline (Undeveloped Area)	8-inch diameter	NCIP-PU-8	-	lf	-	-
New Pipeline (Undeveloped Area)	10-inch diameter	NCIP-PU-10	-	lf	-	-
New Pipeline (Undeveloped Area)	12-inch diameter	NCIP-PU-12	-	lf	-	-
New Pipeline (Undeveloped Area)	14-inch diameter	NCIP-PU-14	-	lf	-	-
New Pipeline (Undeveloped Area)	16-inch diameter	NCIP-PU-16	-	lf	-	-
New Pipeline (Undeveloped Area)	18-inch diameter	NCIP-PU-18	-	lf	-	-
New Pipeline (Undeveloped Area)	20-inch diameter	NCIP-PU-20	-	lf	-	-
New Pipeline (Undeveloped Area)	24-inch diameter	NCIP-PU-24	-	lf	-	-
New Pipeline (Undeveloped Area)	30-inch diameter	NCIP-PU-30	-	lf	-	-
Jack and Bore	Boring and Receiving Pits	NCIP-JB-PIT	2	each	80,000	112,000
Jack and Bore	8-inch diameter (16-inch casing)	NCIP-JB-8	154	lf	79,907	112,000
Jack and Bore	12-inch diameter (21-inch casing)	NCIP-JB-12	-	lf	-	-
Jack and Bore	16-inch diameter (24-inch casing)	NCIP-JB-16	-	lf	-	-
Jack and Bore	18-inch diameter (24-inch casing)	NCIP-JB-18	-	lf	-	-
Jack and Bore	20-inch diameter (30-inch casing)	NCIP-JB-20	-	lf	-	-
Jack and Bore	24-inch diameter (36-inch casing)	NCIP-JB-24	-	lf	-	-
Jack and Bore	30-inch diameter (42-inch casing)	NCIP-JB-30	434	lf	483,956	678,000
Jack and Bore (DMC Pipeline)	Boring and Receiving Pits	NCIP-JB-DMC-PIT	1	each	40,000	56,000
Jack and Bore (DMC Pipeline)	30-inch diameter (42-inch casing)	NCIP-JB-DMC-30	178	lf	198,418	278,000
Recycled Water Exchange Program Implementation	Additional studies, legal review and assistance, City staff and consultant time	NCIP-DMC	1	L.S.	1,000,000	1,000,000
					Total	**$ 27,924,000**

(a) Costs shown are presented in 2020 dollars.
(b) Estimated construction costs do not yet reflect an adjustment to account for the current economic bidding climate.
(c) Costs include mark-ups equal to 40 percent (General Contingency: 15 percent; Design and Planning: 10 percent; Construction Management: 10 percent; and Program Administration: 5 percent).
(d) Total rounded to nearest $1,000.



Symbology

Proposed Buildout Program Facilities

- Buildout Booster Pump Station
- Buidlout Storage Tank
- Buildout System Pipeline

Proposed 2025 Program Facilities

- 2025 Booster Pump Station
- 2025 System Pipeline
- Delta-Mendota Canal Pipeline
- Delta-Mendota Canal Discharge Point

Existing System Facilities

- Existing Booster Pump Station
- WWTP Wastewater Treatment Plant
- Existing System Pipeline
- Legacy Fields
- Future Recycled Water Use
- Recycled Water Pressure Zone

Notes:

1. The City's hydraulic model is not an all pipes model. Some pipes which are not hydraulically significant were excluded from the model.
2. Jack and bore pipeline projects are not shown, but jack and bore is required for canal, railroad, or major highway crossings.
3. Install SCADA system monitoring of flows and pressures at each new facility.
4. Only existing and program facilities are shown.

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Figure 10-3

Recommended Future Recycled Water System Program Improvements

City of Tracy
Water System Master Plan Update

Last Saved: 4/17/2022 4:49:15 PM N:\Clients\404 Tracy\12-18-41 Water Master Plan Update\GIS\MXD\Report Figures\Fig. 10-3 RW Program Facilities.mxd - rchu

- New Pipeline plus Jack and Bore[7]
  - To serve buildout recycled water demands, install approximately 71,550 linear feet of new pipelines (in addition to the proposed 2025 pipelines) ranging in diameter from 12 to 30 inches.
  - To serve buildout potable water demands, jack and bore approximately 1,590 linear feet of new pipelines. This represents 5 distinct jack and bore installations.

    Note: Within individual developments, additional new pipelines of 16-inch diameter and less will be required. The total length of pipelines needed to serve buildout recycled water demands is unknown, as some development areas are still preparing recycled water system plans.

- SCADA System
  - Install SCADA system monitoring of flows and pressures at each new water supply facility to provide operators with real-time system data and flexibility in system operations. The capital cost for SCADA system installation is included in the cost for these facilities.

The locations of these recommended buildout recycled water program facility improvements are shown on Figure 10-3. Preliminary capital cost estimates for the recommended buildout recycled water system improvements are presented in Table 10-5. Detailed maps illustrating the proposed pipeline projects for the buildout recycled water system are provided in Appendix G.

10.3.3 Summary of Recommended Recycled Water System CIP Costs

As discussed in Appendix E, unit construction costs for pipelines, booster pump stations, and storage tanks are essentially the same as for the potable water system. However, unit construction costs for recycled water system pipelines 8 inches and 12 inches in diameter are slightly less than for potable water pipelines, because the 8-inch and 12-inch diameter recycled water pipelines are assumed to be constructed from PVC instead of ductile iron.

Preliminary capital cost estimates for the recommended 2025 and buildout recycled water system are presented in Table 10-4 and Table 10-5, respectively. The estimated probable construction costs do not include installation of individual PRVs on recycled water service connections with peak hour or fill period pressures exceeding 100 psi, as these will be the responsibility of individual developer.

The total 2025 recycled water system CIP cost estimate is $27.9 million, while the total buildout recycled water system CIP cost estimate is $65.5 million. The total recommended recycled water system CIP cost estimate is $93.4 million. These costs only include program facilities.

[7] The buildout hydraulic model was developed as a backbone system and is not an "all pipes" model; therefore, the hydraulic simulations performed may not identify all necessary water system improvements. Consequently, it is recommended that further hydraulic evaluations be performed as additional details are provided for each future development project.

Table 10-5. Probable Construction Costs for the Recommended Buildout Recycled Water System CIP[a]

Improvement Type	Improvement Description	CIP ID	Quantity		Estimated Construction Cost, dollars[b]	CIP Cost, dollars (includes mark-ups)[c,d]
Shared City-side Facilities						
Land Acquisition[e]	Tank Sites	BCIP-LA-T	1	sites	-	285,000
Storage Reservoir[f]	5.7 MG Zone A Tank	BCIP-T-A	1	L.S.	5,809,500	8,133,000
Storage Reservoir[f]	2.3 MG WWTP Diurnal Storage Tank	BCIP-T-DS	1	L.S.	4,262,640	5,968,000
Booster Pump Station	5.00 mgd Zone A Expansion	BCIP-PS-A	1	L.S.	1,818,715	2,546,000
Booster Pump Station	6.34 mgd for Zone F	BCIP-PS-F	1	L.S.	2,016,095	2,823,000
Booster Pump Station	8.32 mgd for Zone B	BCIP-PS-B	1	L.S.	2,309,610	3,233,000
Booster Pump Station	3.89 mgd for Zone D	BCIP-PS-D	1	L.S.	1,654,515	2,316,000
Booster Pump Station	2.88 mgd for Zone E	BCIP-PS-E	1	L.S.	1,505,630	2,108,000
New Pipeline (Developed Area)	8-inch diameter	BCIP-PD-8	-	lf	-	-
New Pipeline (Developed Area)	10-inch diameter	BCIP-PD-10	-	lf	-	-
New Pipeline (Developed Area)	12-inch diameter	BCIP-PD-12	-	lf	-	-
New Pipeline (Developed Area)	14-inch diameter	BCIP-PD-14	-	lf	-	-
New Pipeline (Developed Area)	16-inch diameter	BCIP-PD-16	2,499	lf	837,072	1,172,000
New Pipeline (Developed Area)	18-inch diameter	BCIP-PD-18	-	lf	-	-
New Pipeline (Developed Area)	20-inch diameter	BCIP-PD-20	-	lf	-	-
New Pipeline (Developed Area)	24-inch diameter	BCIP-PD-24	21,852	lf	10,161,175	14,226,000
New Pipeline (Developed Area)	30-inch diameter	BCIP-PD-30	-	lf	-	-
New Pipeline (Undeveloped Area)	8-inch diameter	BCIP-PU-8	-	lf	-	-
New Pipeline (Undeveloped Area)	10-inch diameter	BCIP-PU-10	-	lf	-	-
New Pipeline (Undeveloped Area)	12-inch diameter	BCIP-PU-12	19,557	lf	4,302,643	6,024,000
New Pipeline (Undeveloped Area)	14-inch diameter	BCIP-PU-14	-	lf	-	-
New Pipeline (Undeveloped Area)	16-inch diameter	BCIP-PU-16	5,343	lf	1,522,836	2,132,000
New Pipeline (Undeveloped Area)	18-inch diameter	BCIP-PU-18	9,202	lf	2,898,523	4,058,000
New Pipeline (Undeveloped Area)	20-inch diameter	BCIP-PU-20	-	lf	-	-
New Pipeline (Undeveloped Area)	24-inch diameter	BCIP-PU-24	7,219	lf	2,851,449	3,992,000
New Pipeline (Undeveloped Area)	30-inch diameter	BCIP-PU-30	5,882	lf	2,823,234	3,953,000
Jack and Bore	Boring and Receiving Pits	BCIP-JB-PIT	5	each	200,000	280,000
Jack and Bore	8-inch diameter (16-inch casing)	BCIP-JB-8	-	lf	-	-
Jack and Bore	12-inch diameter (21-inch casing)	BCIP-JB-12	-	lf	-	-
Jack and Bore	16-inch diameter (24-inch casing)	BCIP-JB-16	-	lf	-	-
Jack and Bore	18-inch diameter (24-inch casing)	BCIP-JB-18	-	lf	-	-
Jack and Bore	20-inch diameter (30-inch casing)	BCIP-JB-20	-	lf	-	-
Jack and Bore	24-inch diameter (36-inch casing)	BCIP-JB-24	1,234	lf	1,227,805	1,719,000
Jack and Bore	30-inch diameter (42-inch casing)	BCIP-JB-30	359	lf	400,168	560,000
					Total	**$ 65,528,000**

(a) Costs shown are presented in 2020 dollars.
(b) Estimated construction costs do not yet reflect an adjustment to account for the current economic bidding climate.
(c) Costs include mark-ups equal to 40 percent (General Contingency: 15 percent; Design and Planning: 10 percent; Construction Management: 10 percent; and Program Administration: 5 percent).
(d) Total rounded to nearest $1,000.
(e) Assumes each tank site is 1.5 acres. Cost includes Zone A Tank site.
(f) Recommended volume based on active volume. Cost assumes the Zone A tank will be an aboveground welded steel tank, and the WWTP tank will be a partially buried prestressed concrete tank.

10.4 CAPITAL IMPROVEMENT PROGRAM TIMING AND TRIGGERS

As described in Chapters 7 and 8 for the potable water system and Chapter 9 for the recycled water system, the construction of the capital improvements for the future potable and recycled water systems should be coordinated with the proposed schedules of new development and/or other system needs to ensure that the required infrastructure will be in place to serve future customers when needed.

Triggers for capital improvements vary depending on the improvement type and the location of the specific improvement project. General guidelines are summarized as follows:

- Existing system pipeline improvements are triggered by existing fire flow deficiencies and should be addressed as soon as funding is available.
- Improvements that improve system operational flexibility and reliability should be prioritized. Examples of such improvements include the equipping of the City's existing wells with ammonia addition, the JJWTP expansion and construction of Clearwell #3 at the JJWTP, and implementation of SCADA system improvements and backup power provisions.
- Pipelines which extend potable water service to currently undeveloped areas are generally triggered by development of those areas. Hydraulic evaluations for specific developments should be conducted to confirm that the proposed pipelines to serve each development are adequate.
- The NCIP-PI-1 and NCIP-PI-2 projects are triggered by new development, which is expected to occur by 2025, and should be in service before 2025. Similarly, the infrastructure needed to re-zone the existing transmission mains in Lammers Road, Schulte Road, and Hansen Road from Zone 2 to Zone 3 should be constructed before 2025.
- New valve interconnections between pressure zones are triggered when the pipelines requiring the valve connections are constructed.
- Pump stations and tanks which serve a new pressure zone with no existing facilities, such as Zones 5 and 6 in the potable water system or Zones B through F in the recycled water system, are triggered when development of the new pressure zone begins.
- New pump stations and tanks which serve an existing pressure zone are triggered when total demands within that pressure zone nearly exceeds the capacity of existing facilities. The City should continue to monitor demands within the existing pressure zones and begin design and construction of new facilities in advance of demands exceeding existing capacity.

APPENDIX A

Land Use Assumptions and Projected Water Demands for New Developments

Table A-1. Land Uses with TAZ Estimates provided by City Planning Division

General Plan Planning Area/Common Name	TAZ	Total Acres	Adjusted Total Acres	Overall Density (Units per Gross Acre)	TAZ 2025	TAZ 2025	TAZ 2025	TAZ 2025	TAZ 2025	TAZ 2025	TAZ 2040	TAZ 2040	TAZ 2040	TAZ 2040	TAZ 2040	Taz 2040	TAZ 2040 to Buildout	TAZ 2040 to Buildout	TAZ Buildout	TAZ Buildout	TAZ Buildout	TAZ Buildout	Very Low Density (1.5 DU per acre typical)	Low Density (4.35 DU per acre typical)	Medium Density (9 DU per acre typical)	High Density SFD (13 DU per acre typical)	High Density Multi-Family (24 DU per acre typical)	Total Resid SF DU	Total Resid MF DU	Senior /Assisted Living		Institutional (Hospital and Medical Office)		Industrial Acres (0.5 FAR)	Retail/Commercial/ Office Acres
					SFDU	MFDU	Retail/Office Acres	Ind Acres	Institutional Acres	Sr Assist Liv Acres	SFDU	MFDU	Retail/Office Acres	Ind Acres	Institutional Acres	Sr Assist Liv Acres	SFDU	MFDU	Retail/Office Acres	Ind Acres	Institutional Acres	Sr. Assist Liv Acres	acres	acres	acres	acres	acres			units	acres	square footage	acres		
UR 5 (Bright) (1)	527	170	108	8.2							546								10					40	38	10	10	546	0		0		0	0	10
	789										100	240																100	240		0		0	0	0
UR 7 (Bright/Castro) (2)	792	112	107	5.7	150						456													40	48			606	0		0		0	0	0
Rocking Horse (3)	788	58	55	4.5	250																			55				250	0		0		0	0	0
Tracy Village (4)	535	135	130	4.6	400						200													130				600	0		0		0	0	0
UR1 (5)	515	780	780	3.8	50	50					200							169	20				380	300	65		25	250	219		0		0	0	20
	517																400											400	0		0		0	0	0
	613										200						260											460	0		0		0	0	0
	616																300											300	0		0		0	0	0
	617												10				200	200										200	200		0		0	0	10
	618				50	50					200	50					300											550	100		0		0	0	0
	659																200											200	0		0		0	0	0
Ellis (6)	529	321	185	4.1	43						132													178	7			175	0		0		0	0	0
	661											60																0	60		0		0	0	0
	662				43						132																	175	0		0		0	0	0
	663				43						132																	175	0		0		0	0	0
	664										176																	176	0		0		0	0	0
Avenues (8)	670	96	96	4.7							350													96				350	0		0		0	0	0
	599										103																	103	0		0		0	0	0
UR10 (9)	660	116	116	N/A																116								0	0		0		0	116	0
Tracy Hills (10)	573	2732	1845	3.3	200						100		7										81	876	342	8		300	0		0		0	0	9
	574																			27								0	0		0		0	27	0
	601																700			85								700	0		0		0	85	0
	682										600																	600	0		0		0	0	0
	683				200						150						100											450	0		0		0	0	0
	684										300																	300	0		0		0	0	0
	685										908						200											1,108	0		0		0	0	0
	686										500						500											1,000	0		0		0	0	0
	687										320																	320	0		0		0	0	0
	688										450																	450	0		0		0	0	0
	689				200						600																	800	0		0		0	0	0
	690				200						100																	300	0		0		0	0	0
	691													196														0	0		0		0	196	0
	692																500											500	0		0		0	0	0
	693				200						185		30															385	0		0		0	0	30
	1044										50																	50	0		0		0	0	0
Gateway (11)	794	535	454			75	8.5					302	34						34						50		17	0	377	1,557	0	688,000	0	0	120
	839									17						69												0	0		86		0	0	0
	840																											0	0		0		0	0	0
	843									12.5						50												0	0		63		0	0	0
	844						8				50		33						34									50	0		0		0	0	75
	845								20						60						50							0	0		0		130	0	0
	847				160						325																	485	0		0		0	0	0
	848				18					5	75					20												93	0		25		0	0	0
UR6 (Cordes Ranch) (12)	829	1730	971	N/A			5						40	150																	0		0	150	171
	830						5						20																		0		0	0	25
	831													50																	0		0	50	0
	832							50					54	50																	0		0	100	54
	833													110																	0		0	110	0
	834							20						20																	0		0	40	0
	835																		57												0		0	0	57

Table A-1. Land Uses with TAZ Estimates provided by City Planning Division

General Plan Planning Area/Common Name	TAZ	Total Acres	Adjusted Total Acres	Overall Density (Units per Gross Acre)	TAZ 2025	TAZ 2025	TAZ 2025	TAZ 2025	TAZ 2025	TAZ 2025	TAZ 2040	TAZ 2040	TAZ 2040	TAZ 2040	TAZ 2040	Taz 2040	TAZ 2040 to Buildout	TAZ 2040 to Buildout	TAZ Buildout	TAZ Buildout	TAZ Buildout	TAZ Buildout	Very Low Density (1.5 DU per acre typical)	Low Density (4.35 DU per acre typical)	Medium Density (9 DU per acre typical)	High Density SFD (13 DU per acre typical)	High Density Multi-Family (24 DU per acre typical)	Total Resid SF DU	Total Resid MF DU	Senior /Assisted Living		Institutional (Hospital and Medical Office)		Industrial Acres (0.5 FAR)	Retail/Commercial/ Office Acres
					SFDU	MFDU	Retail/Office Acres	Ind Acres	Institutional Acres	Sr Assist Liv Acres	SFDU	MFDU	Retail/Office Acres	Ind Acres	Institutional Acres	Sr Assist Liv Acres	SFDU	MFDU	Retail/Office Acres	Ind Acres	Institutional Acres	Sr. Assist Liv Acres	acres	acres	acres	acres	acres			units	acres	square footage	acres		
	836																														0		0	0	0
	837													50																		0		0	50	0
	838													74																		0		0	74	0
	840													143																		0		0	143	0
	841							50						143																		0		0	193	0
UR4 (Bright Triangle) (13)	795	190	162	5														816									34	0	816		0		0	0	43
	817																		22									0	0		0		0	0	22
	818																		22									0	0		0		0	0	22
	828																		80									0	0		0		0	0	80
UR3 (Catellus) (14)	819	700	700	0.1																66			40					0	0		0		0	66	40
	820																		40	66								0	0		0		0	66	40
	821																60			66								60	0		0		0	66	0
	822																			67								0	0		0		0	67	0
	823																			67								0	0		0		0	67	0
	824																		45	67								0	0		0		0	67	45
	825																			67								0	0		0		0	67	0
	1039																			69								0	0		0		0	69	0
I-205 Expansion (15)	525	172	172	10.2							257	180	50				257	180							42	50	30	514	360		0		0	0	50
	641										257	180					257	180										514	360		0		0	0	0
West Side Industrial (16)	528	487	485	N/A				120						240																	0		0	360	0
	842													200																	0		0	200	0
	851							45						45																	0		0	90	0
East Side Industrial (17)	510	370	368	N/A										220																	0		0	220	0
	511												5	69																	0		0	69	5
	627													74																	0		0	74	0
Larch Clover (18)	521	442	100	2.7																			250	40	40		12	0	0		0		0	0	0
	530																549											549	0		0		0	0	0
	554																											0	0		0		0	0	0
	638						10												80									0	0		0		0	0	90
	641																											0	0		0		0	0	0
	642																360	288	20									360	288		0		0	0	20
	656																											0	0		0		0	0	0
Chrisman Road (19)	647	116	113	N/A															13	100											0		0	100	13
Rocha (20)	810	91	91	8													296	431						68			23	296	431		0		0	0	0
Berg/Byron remainder (21)	796	56	44	9.3													26								39		5	26	0		0		0	0	0
	1040					72											275	60										275	132		0		0	0	0
	625																50											50	0		0		0	0	0
Berg Road Subdivision (22)	1040	10	10	7.1	71																				10			71	0		0		0	0	0
SWC Valpico and Corral Hollow (23)	671	65	65	4.3													282							65				282	0		0		0	0	0
Kagehiro (24)	534	47	10	5	62																			10				62	0		0		0	0	0
Dobler/ Maibes (25)	644	23	23	N/A									23																		0		0	0	23
Holly Sugar Industrial	518	160	143	N/A									18	125																	0		0	125	18
Between Holly Sugar and Arbor	636	111	100											50						50											0		0	100	0
Gabriel Estates	653																																		
San Marco	622																																		
	654																																		
Sterling Park	624																																		
Alden Meadows	791																																		
Presidio	623																																		
Placencia Fields/CalTrans	793																	30	1									0	30		0		0	0	1
Belconte	797																																		
Lyon Crossroads	625																																		

Table A-1. Land Uses with TAZ Estimates provided by City Planning Division

General Plan Planning Area/Common Name	TAZ	Total Acres	Adjusted Total Acres	Overall Density (Units per Gross Acre)	TAZ 2025	TAZ 2025	TAZ 2025	TAZ 2025	TAZ 2025	TAZ 2025	TAZ 2040	TAZ 2040	TAZ 2040	TAZ 2040	TAZ 2040	Taz 2040	TAZ 2040 to Buildout	TAZ 2040 to Buildout	TAZ Buildout	TAZ Buildout	TAZ Buildout	TAZ Buildout	Very Low Density (1.5 DU per acre typical)	Low Density (4.35 DU per acre typical)	Medium Density (9 DU per acre typical)	High Density SFD (13 DU per acre typical)	High Density Multi-Family (24 DU per acre typical)	Total Resid SF DU	Total Resid MF DU	Senior /Assisted Living		Institutional (Hospital and Medical Office)		Industrial Acres (0.5 FAR)	Retail/Commercial/ Office Acres
					SFDU	MFDU	Retail/Office Acres	Ind Acres	Institutional Acres	Sr Assist Liv Acres	SFDU	MFDU	Retail/Office Acres	Ind Acres	Institutional Acres	Sr Assist Liv Acres	SFDU	MFDU	Retail/Office Acres	Ind Acres	Institutional Acres	Sr. Assist Liv Acres	acres	acres	acres	acres	acres			units	acres	square footage	acres		
Cintra Park	640																																	
Woodfield Estates	1042																																	
SWC Grant Line and Corral Hollow	639						1.06			2.73																				3		0	0	1
Bridle Creek, Laurelbrook	526																																	
Heartland / Chesapeake Bay	798																																	
West HS / Alegre Commons	556																																	
Summergate	555																																	
Arnaudo Village, Rebeiro	657																																	
East of Tracy Blvd, between I-205 & Grant Line (La Quinta)	553						87-room hotel																					0	0		0		0	0	0
The Classics, California Espirit, Mobile Home Park	537																																	
Garden Square + Shamrock	699																			4								0	0		0		0	4	0
Garden Square+ Brookview	1041																																	
Garden Square	696																																	
Mars Ct, Gandy Dancer area	816							4.8												18								0	0		0		0	23	0
Jim Tracey (vacant)	815												29															0	0		0		0	0	29
N. Side Valpico, inc. Tar pit	811																	442										0	442		0		0	0	0
NEI Amazon + Crate & Barrel North bldg.	649													15														0	0		0		0	15	0
US Cold, other Ind.	650																																	
Crate & Barrel South, Amazon Pkng	680													5														0	0		0		0	5	0
OSH, Seagate, United Grocers	635																																	
Various M-1 and M-2, SEC MacArthur and Grant Line	509																																	
Red Maple Village (west half)	814																																	
ISP (So. Side Valpico, b/t RR spur & Glenbriar)	589																																	
Heinz	694													11						11								0	0		0		0	22	0
Mission Court	612											200						210										0	410		0		0	0	0
Red Maple remainder	813												3					78										0	78		0		0	0	3
Sycamore Village (apts +SFDs)	652																																	
LDR	610																																	
Corral Hollow Estates (county)	603																																	
old residential	541																																	
old residential (Clover+more)	538																																	
South side GL, west of MA (GHC + res)	540																																	
LDR, Dr. Powers Park	557																																	
Old Res., Millenium	544																																	
Old Res, Lincoln Park-mostly built but includes NEC 11th & Central	545											12																0	12		0		0	0	0
S. Side old downtown, MDR, LDR, PUD	567																	20										0	20		0		0	0	0
Edgewood	597																																	
Edgewood	785																																	
Edgewood-res plus commercial site	784						2.4						8.5																	0		0	0	11
Edgewood, Brookview West	786																																	
Edgewood	787																																	
Edgewood	598																																	
Fairhaven, Victoria Greens, Harvest Glen, Glen Creek	596																																	
Murifield 8 & 9	607																																	
Murifield	608																																	
Parkside Estates, California Parkside, California Marquis	609																																	

Table A-1. Land Uses with TAZ Estimates provided by City Planning Division

General Plan Planning Area/Common Name	TAZ	Total Acres	Adjusted Total Acres	Overall Density (Units per Gross Acre)	TAZ 2025	TAZ 2025	TAZ 2025	TAZ 2025	TAZ 2025	TAZ 2025	TAZ 2040	TAZ 2040	TAZ 2040	TAZ 2040	TAZ 2040	Taz 2040	TAZ 2040 to Buildout	TAZ 2040 to Buildout	TAZ Buildout	TAZ Buildout	TAZ Buildout	TAZ Buildout	Very Low Density (1.5 DU per acre typical)	Low Density (4.35 DU per acre typical)	Medium Density (9 DU per acre typical)	High Density SFD (13 DU per acre typical)	High Density Multi-Family (24 DU per acre typical)	Total Resid SF DU	Total Resid MF DU	Senior /Assisted Living		Institutional (Hospital and Medical Office)		Industrial Acres (0.5 FAR)	Retail/Commercial/ Office Acres
					SFDU	MFDU	Retail/Office Acres	Ind Acres	Institutional Acres	Sr Assist Liv Acres	SFDU	MFDU	Retail/Office Acres	Ind Acres	Institutional Acres	Sr Assist Liv Acres	SFDU	MFDU	Retail/Office Acres	Ind Acres	Institutional Acres	Sr. Assist Liv Acres	acres	acres	acres	acres	acres			units	acres	square footage	acres		
Glenbriar, Pebblebrook	590																																	
County Residential	591																																	
Tiburon Village, Katerra Apts	812					264																						0			0		0	0	0
Larkspur Estates-14 units remaining	536				14																							14			0		0	0	0
Eastlake	614																																	
Elissagaray Ranch	615																																	
Country Vista (Yosemite Vista)	695																																	
Victoria Park	611																																	
Santana, Centennial	651																																	
Schulte Ranch, Quail Glen, Countrywood, Vintage Estates, Mt Oso	568																	50											50		0		0	0	0
Forest Glen, Mt. Diablo Estates	566																																	
Bowtie East, Quail Run, Pheasant Crossing 2, CA Cameo, CA Collections	565											See TOD/Valley Link Plan						See TOD/Valley Link Plan												0		0	0	0
Bowtie West, Ryland Junction	564											See TOD/Valley Link Plan						See TOD/Valley Link Plan												0		0	0	0
Tennis Vista, RR property	621																			9										0		0	9	0
Tennis Village, Harvest Ridge	620																																	
Westchester Green, Rancho Pacific, Alden Glen, Fox Hollow	560																																	
Harvest Landing, Quail Meadows, Corral Hollow Estates	619																																	
CBD	561																																	
N. side 11th, b/t Parker & Central	550																																	
City Hall, Creamery, downtown	559																																	
S. sidw GL, west of MA, Light Industrial, PUD	542												1.75																	0		0	0	2
Tracy High, GHC, Res	587																																	
West of Downtown	562																																	
GHC, MDC, MDR (N. of 11th, b/t Tracy & Parker)	551																																	
Commercial, MDR (99 cent store, affordable hsg.)	563																																	
LDR, MDR, GHC (N. of 11th, b/t Lincoln & Tracy)	558																																	
LDR (East, Acacia)	543																																	
HDR	549																																	
(Hospital) MDR, MDC, MO	548						5						5															0	0		0		0	0	10
HDR, PUD, GHC, MDR, MDC (E. of Holly, N. of G.L.)	539																	65										0	65		0		0	0	0
LDR, MDR, MDC (El Pescadero Park, S. side Clover)	552					20						20						60										0	100		0		0	0	0
s. side GL, b/t Parker &East	546											22																0	22		0		0	0	0
GHC, HDR, LDR, POM, MDR	547																																	
Highway Service, GHC (Kaiser, Arco)	655						5						5																	0		0	0	10
M-1, PUD, HS (N. of I-205, b/t Tracy & Holly)	637																			2										0		0	2	0
M-2	700																																	
Airport	593																		?	?										0		0	0	0
Redbridge	602																																	
I-205 Specific Plan (N. part of Harvest)	799												1																	0		0	0	1
I-205-Auto Plaza	808												3.7																	0		0	0	4
I-205-Auto Plaza	806																																	
I-205 CC-West Valley Mall+	643												20																	0		0	0	20

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					SFDU	MFDU	Retail/Office Acres	Ind Acres	Institutional Acres	Sr Assist Liv Acres	SFDU	MFDU	Retail/Office Acres	Ind Acres	Institutional Acres	Sr Assist Liv Acres	SFDU	MFDU	Retail/Office Acres	Ind Acres	Institutional Acres	Sr. Assist Liv Acres	acres	acres	acres	acres	acres			units	acres	square footage	acres		
I-205-Home Depot, Winco	803																																	
I-205-NEC Naglee & GL	809																																	
I-205 Outlets & Surrounding	634						5 acre office +107 room hotel						13															0			0	0	13
NEI-Yellow freight & IPT 1	632																																	
NEI-Rados Haley	628													52														0			0	52	0
NEI-Home Depot, Ridgeline +	633							26																				0			0	26	0
NEI-IPT 2, FEMA +	631							75																				0			0	75	0
NEI-Seefried	629							71																				0			0	71	0
NEI Prologis, basin (NWC GL & Paradise)	677							12																				0			0	12	0
NEI-Majestic	648							75																				0			0	75	0
NEI-Barbosa, Animal Shelter, part of PacMed, Katerra	678													20														0			0	20	0
NEI-Kellogg, part of Katerra	514																																	
NEI-SSI, Best Buy, Prologis (Chabot Ct)	679																																	
Totals		**9825**	**7333**		**2354**	**531**					**8154**	**1266**	**413.95**	**2112**	**60**	**139**	**6072**	**3279**	**478**	**957**	**50**		**751**	**1,898**	**681**	**68**	**156**	**16,580**	**4,812**	**1,557**	**176**	**688,000**	**130**	**3,618**	**1,196**

Does not include units/acreage already built
Does not include schools
Gateway office and industrial is really called "business commercial" in the draft Specific Plan
Cordes Ranch has built 7.7 million square feet of industrial, and about 14-16 million square feet to go

* Tracy Hills MUBP is 50 acres retail, 50 acres office, 80 acres medium density residential
**Pursuant to Ellis DA Ellis receives 2,250 RGAs above the GMO Guidelines Category of F3, which are not yet assigned a location
Larch Clover Planning Ares is largely built out-only assuming 100 acres of land use change (to retail)
Office FAR is assumed at .45, and Retail is .30
Industrial FAR is assumed at .45
Purple=Built Out TAZ

Table A-2. 2025 Time Frame - Land Use Assumptions and Projected Water Demands for New Developments

Project or Development Area	Data Source(s)[a]	Parks Area Assumption[b]	Assumed Recycled Water Availability	Residential – Very Low Density						Residential – Low Density						Residential – Medium Density						
				Dwelling Units	*Total Acres*	Residential Acres	Assumed Park Acres	PW Demand, af/yr[c]	RW Demand, af/yr[d]	Dwelling Units	*Total Acres*	Residential Acres	Assumed Park Acres	PW Demand, af/yr[c]	RW Demand, af/yr[d]	Dwelling Units	*Total Acres*	Residential Acres	Assumed Park Acres	Assumed Other Irrigated Acres[e]	PW Demand, af/yr[c]	RW Demand, af/yr[d]
UR 5 (Bright)	TAZ Spreadsheet	✓	✓																			
UR 7 (Bright/Castro)	TAZ Spreadsheet	✓	✓							150	34.5	30.6	3.9	67.8	16.3							
Rocking Horse	Hydraulic Analysis TM		✓							226	56.7	56.7		102.2								
Tracy Village[f]	Hydraulic Analysis TM		✓							400	64.1	64.1		180.9								
UR 1	TAZ Spreadsheet	✓								50	11.5	10.2	1.3	28.3		50	5.6	4.1	0.6	0.8	21.3	
Ellis[g,h]	Hydraulic Analysis TM		✓							664	150.5	150.5		300.3								
Avenues	Hydraulic Analysis TM		✓																			
UR 10	TAZ Spreadsheet	✓	✓																			
Tracy Hills[i]	Hydraulic Analysis TM, TAZ Spreadsheet	✓								1,073	269.8	269.8		485.3		132	33.2	28.2		5.0	56.4	
Westside Ranch	Westside Draft Specific Plan	✓	✓																			
Cordes Ranch	Hydraulic Analysis TM, TAZ Spreadsheet	✓																				
UR 4 (Bright Triangle)	TAZ Spreadsheet	✓	✓																			
UR 3 (Catellus)	TAZ Spreadsheet	✓	✓																			
I-205 Expansion	TAZ Spreadsheet	✓	✓																			
West Side Industrial	TAZ Spreadsheet	✓																				
East Side Industrial	TAZ Spreadsheet	✓																				
Larch-Clover	TAZ Spreadsheet	✓	✓																			
Chrisman Road	TAZ Spreadsheet	✓																				
Rocha	TAZ Spreadsheet	✓																				
Berg/Byron Remainder	TAZ Spreadsheet	✓																				
Berg Road Subdivision	Hydraulic Analysis TM															71	9.9	8.4		1.5	27.2	
SWC Valpico & Corral Hollow	TAZ Spreadsheet	✓	✓																			
Kagehiro[g,j]	Email from City Planning Division									252	47.0	47.0		114.0								
Dobler/Maibes	TAZ Spreadsheet	✓	✓																			
Holly Sugar Industrial	TAZ Spreadsheet	✓	✓																			
Northeast Industrial Area	Hydraulic Analysis TM																					
Industrial Areas Specific Plan	TAZ Spreadsheet																					
I-205 Corridor Specific Plan	TAZ Spreadsheet																					
Home 2 Suites	Hydraulic Analysis TM																					
Sierra Hills	Hydraulic Analysis TM																					
Grant Line Road Apartments	Hydraulic Analysis TM																					
Aspire II	Hydraulic Analysis TM																					
Harvest	Hydraulic Analysis TM																					
321 E. Grant Line Rd Apartments	Hydraulic Analysis TM																					
Barcelona Infill	Hydraulic Analysis TM									51	10.2	10.2		23.1								
Mountain View	Tracy Municipal Services Review, June 2019																					
Tracy Combined Cycle Power Plant RW Conversion[k]	Hydraulic Analysis TM		✓																			
Legacy Fields[l]	Hydraulic Analysis TM		✓																			
Parks RW Conversion[m]	2017 Irrigation Meters		✓																			
Infill (misc.)	TAZ Spreadsheet									14	3.2	3.2		6.3								
	Total									**2,880**	**647**	**642**	**5**	**1,308**	**16**	**253**	**49**	**41**	**1**	**7**	**105**	

(a) Data Source abbreviations:
TAZ Spreadsheet - data from Land Uses with TAZ Estimates_06_23_2021_2025_2040_BU_Independent.xlsx spreadsheet received from the City Planning Division in June 2021 (Table A-1).
Hydraulic Analysis TM - data from a previously prepared hydraulic analysis technical memorandum prepared by either West Yost Associates or Blackwater Consulting Engineers, Inc.

(b) For selected projects and development areas, it was assumed that 11.2% of the total acres in very low, low, and medium density residential land uses will be developed as parks. These park acres are in addition to the identified parks in the Rocking Horse, Ellis, Avenues, Tracy Hills Phase 1, and Legacy Fields developments. If available, recycled water was used to meet park demands.

(c) Includes 9.6% Unaccounted-for Water (UAFW).

(d) Includes 5.0% UAFW.

(e) Assumes that 15 percent of total gross acres will be landscaped and irrigated. If available, recycled water was used to meet irrigated area demands.

(f) Miscellaneous potable water demands for Tracy Village are from existing residential units to be annexed as part of the Project. Miscellaneous recycled water demand for Tracy Village is to fill the lakes which will be constructed as part of the project.

(g) Projected land use data includes dwelling units and acreage developed by 2017.

(h) Land use data for Ellis includes dwelling units constructed by 2017. Miscellaneous potable water demand for Ellis represents projected demands for the Aquatic Center minus 2017 metered water use. The 2017 metered use was subtracted from the calculated water demands for the entire development to account for the portion of the development constructed by 2017.

(i) Land use data from hydraulic analysis TMs was used for Tracy Hills Phase 1. The parks acreage assumption was not applied to Tracy Hills Phase 1 because the available land use data specifically identified parks. The parks acreage assumption was applied to the remaining phases of Tracy Hills, which used land use data from the TAZ spreadsheet.

(j) Land use data for Kagehiro includes dwelling units constructed by 2017. Miscellaneous potable water demand for Kagehiro represents 2017 metered water use. The 2017 metered use was subtracted from the calculated water demands for the entire development to account for the portion of the development constructed by 2017.

(k) Demands for the Tracy Combined Cycle Power Plant Recycled Water Conversion are from City of Tracy Recycled Water Project - Projected Recycled Water Demands TM, West Yost Associates, October 11, 2016.

(l) It was assumed that 50 percent of the remaining Legacy Fields acreage (from City of Tracy Parks Master Plan, Table A-1, April 2013) will be developed by 2025. Projected near term demands for Legacy Fields are equal to 50 percent of projected Legacy Fields demands for the 2040 and buildout time frames.

(m) Represents the transfer of 2017 metered potable demands for selected existing parks and irrigated areas to recycled water demands. Projected recycled water demands for these areas are larger than existing potable water demands due to current potable water conservation practices. Refer to Chapter 9 for a full list of irrigated areas projected to be converted to recycled water use.

Table A-2. 2025 Time Frame - Land Use Assumptions and Projected Water Demands for New Developments

Project or Development Area	Residential – High Density						Residential – Very High Density						Commercial					Office				
	Dwelling Units	*Total Acres*	Residential Acres	Assumed Irrigated Acres[e]	PW Demand, af/yr[c]	RW Demand, af/yr[d]	Dwelling Units	*Total Acres*	Residential Acres	Assumed Irrigated Acres[e]	PW Demand, af/yr[c]	RW Demand, af/yr[d]	*Total Acres*	Commercial Acres	Assumed Irrigated Acres[e]	PW Demand, af/yr[c]	RW Demand, af/yr[d]	*Total Acres*	Office Acres	Assumed Irrigated Acres[e]	PW Demand, af/yr[c]	RW Demand, af/yr[d]
UR 5 (Bright)																						
UR 7 (Bright/Castro)																						
Rocking Horse																						
Tracy Village[f]													2.7	2.3	0.4	4.5	1.7					
UR 1	100	7.7	6.5	1.2	26.2																	
Ellis[g,h]																						
Avenues																						
UR 10																						
Tracy Hills[i]																						
Westside Ranch																						
Cordes Ranch													10.0	8.5	1.5	20.1						
UR 4 (Bright Triangle)																						
UR 3 (Catellus)																						
I-205 Expansion																						
West Side Industrial																						
East Side Industrial																						
Larch-Clover													10.0	8.5	1.5	16.9	6.3					
Chrisman Road																						
Rocha																						
Berg/Byron Remainder	72	5.0	4.3	0.8	18.7																	
Berg Road Subdivision																						
SWC Valpico & Corral Hollow																						
Kagehiro[g,j]																						
Dobler/Maibes																						
Holly Sugar Industrial																						
Northeast Industrial Area																						
Industrial Areas Specific Plan																						
I-205 Corridor Specific Plan																						
Home 2 Suites							110	2.6	2.2	0.4	18.5							0.6	0.5	0.1	1.1	
Sierra Hills	300	11.6	9.9	1.7	74.1																	
Grant Line Road Apartments	448	20.0	17.0	3.0	111.8																	
Aspire II	47	2.3	2.0	0.3	11.8																	
Harvest	300	17.9	15.2	2.7	76.6																	
321 E. Grant Line Rd Apartments	40	1.7	1.4	0.3	9.9																	
Barcelona Infill																						
Mountain View																						
Tracy Combined Cycle Power Plant RW Conversion[k]																						
Legacy Fields[l]																						
Parks RW Conversion[m]																						
Infill (misc.)	284	15.1	12.9	2.3	71.8								22.5	19.1	3.4	45.1						
Total	**1,591**	**81**	**69**	**12**	**401**		**110**	**3**	**2**	**0**	**18**		**45**	**38**	**7**	**87**	**8**	**1**	**1**	**0**	**1**	

(a) Data Source abbreviations:
TAZ Spreadsheet - data from Land Uses with TAZ Estimates_06_23_2021_2025_2040_BU_Independent.xlsx spreadsheet received from the City Planning Division in June 2021 (Table A-1).
Hydraulic Analysis TM - data from a previously prepared hydraulic analysis technical memorandum prepared by either West Yost Associates or Blackwater Consulting Engineers, Inc.

(b) For selected projects and development areas, it was assumed that 11.2% of the total acres in very low, low, and medium density residential land uses will be developed as parks. These park acres are in addition to the identified parks in the Rocking Horse, Ellis, Avenues, Tracy Hills Phase 1, and Legacy Fields developments. If available, recycled water was used to meet park demands.

(c) Includes 9.6% Unaccounted-for Water (UAFW).

(d) Includes 5.0% UAFW.

(e) Assumes that 15 percent of total gross acres will be landscaped and irrigated. If available, recycled water was used to meet irrigated area demands.

(f) Miscellaneous potable water demands for Tracy Village are from existing residential units to be annexed as part of the Project. Miscellaneous recycled water demand for Tracy Village is to fill the lakes which will be constructed as part of the project.

(g) Projected land use data includes dwelling units and acreage developed by 2017.

(h) Land use data for Ellis includes dwelling units constructed by 2017. Miscellaneous potable water demand for Ellis represents projected demands for the Aquatic Center minus 2017 metered water use. The 2017 metered use was subtracted from the calculated water demands for the entire development to account for the portion of the development constructed by 2017.

(i) Land use data from hydraulic analysis TMs was used for Tracy Hills Phase 1. The parks acreage assumption was not applied to Tracy Hills Phase 1 because the available land use data specifically identified parks. The parks acreage assumption was applied to the remaining phases of Tracy Hills, which used land use data from the TAZ spreadsheet.

(j) Land use data for Kagehiro includes dwelling units constructed by 2017. Miscellaneous potable water demand for Kagehiro represents 2017 metered water use. The 2017 metered use was subtracted from the calculated water demands for the entire development to account for the portion of the development constructed by 2017.

(k) Demands for the Tracy Combined Cycle Power Plant Recycled Water Conversion are from City of Tracy Recycled Water Project - Projected Recycled Water Demands TM, West Yost Associates, October 11, 2016.

(l) It was assumed that 50 percent of the remaining Legacy Fields acreage (from City of Tracy Parks Master Plan, Table A-1, April 2013) will be developed by 2025. Projected near term demands for Legacy Fields are equal to 50 percent of projected Legacy Fields demands for the 2040 and buildout time frames.

(m) Represents the transfer of 2017 metered potable demands for selected existing parks and irrigated areas to recycled water demands. Projected recycled water demands for these areas are larger than existing potable water demands due to current potable water conservation practices. Refer to Chapter 9 for a full list of irrigated areas projected to be converted to recycled water use.

Table A-2. 2025 Time Frame - Land Use Assumptions and Projected Water Demands for New Developments

Project or Development Area	Industrial					Institutional					Identified Parks			Misc. Water Demands		Total Dwelling Units	Total Area, acres	Total Potable Water Demand, af/yr	Total Recycled Water Demand, af/yr
	Total Acres	Industrial Acres	Assumed Irrigated Acres[e]	PW Demand, af/yr[c]	RW Demand, af/yr[d]	*Total Acres*	Institutional Acres	Assumed Irrigated Acres[e]	PW Demand, af/yr[c]	RW Demand, af/yr[d]	*Total Acres*	PW Demand, af/yr[c]	RW Demand, af/yr[d]	PW Demand, af/yr[c]	RW Demand, af/yr[d]				
UR 5 (Bright)																			
UR 7 (Bright/Castro)																150	34.5	67.8	16.3
Rocking Horse											2.4		10.1			226	59.1	102.2	10.1
Tracy Village[f]														17.7	126.1	400	66.8	203.1	127.8
UR 1																200	24.7	75.9	
Ellis[g,h]											11.2		47.2	-29		664	161.7	270.9	47.2
Avenues																			
UR 10																			
Tracy Hills[i]											11.4	50.4				1,205	314.3	592.1	
Westside Ranch																			
Cordes Ranch	429.7	365.2	64.5	660.7													439.7	680.8	
UR 4 (Bright Triangle)																			
UR 3 (Catellus)																			
I-205 Expansion																			
West Side Industrial	165.0	140.3	24.8	253.7													165.0	253.7	
East Side Industrial																			
Larch-Clover																	10.0	16.9	6.3
Chrisman Road																			
Rocha																			
Berg/Byron Remainder																72	5.0	18.7	
Berg Road Subdivision																71	9.9	27.2	
SWC Valpico & Corral Hollow																			
Kagehiro[g,j]														-24		252	47.0	89.8	
Dobler/Maibes																			
Holly Sugar Industrial																			
Northeast Industrial Area	259.0	220.2	38.9	398.2													259.0	398.2	
Industrial Areas Specific Plan	4.8	4.1	0.7	7.4													4.8	7.4	
I-205 Corridor Specific Plan																			
Home 2 Suites																110	3.2	19.6	
Sierra Hills																300	11.6	74.1	
Grant Line Road Apartments																448	20.0	111.8	
Aspire II																47	2.3	11.8	
Harvest																300	17.9	76.6	
321 E. Grant Line Rd Apartments																40	1.7	9.9	
Barcelona Infill																51	10.2	23.1	
Mountain View																			
Tracy Combined Cycle Power Plant RW Conversion[k]															33.7				33.7
Legacy Fields[l]											114.3	26.2	198.9				114.3	26.2	198.9
Parks RW Conversion[m]														-318	458.1			-318	458.1
Infill (misc.)						2.7	2.3	0.4	4.7							298	43.6	128.0	
Total	**859**	**730**	**129**	**1,320**		**3**	**2**	**0**	**5**		**139**	**77**	**256**	**-354**	**618**	**4,834**	**1,826**	**2,968**	**898**

(a) Data Source abbreviations:
TAZ Spreadsheet - data from Land Uses with TAZ Estimates_06_23_2021_2025_2040_BU_Independent.xlsx spreadsheet received from the City Planning Division in June 2021 (Table A-1).
Hydraulic Analysis TM - data from a previously prepared hydraulic analysis technical memorandum prepared by either West Yost Associates or Blackwater Consulting Engineers, Inc.

(b) For selected projects and development areas, it was assumed that 11.2% of the total acres in very low, low, and medium density residential land uses will be developed as parks. These park acres are in addition to the identified parks in the Rocking Horse, Ellis, Avenues, Tracy Hills Phase 1, and Legacy Fields developments. If available, recycled water was used to meet park demands.

(c) Includes 9.6% Unaccounted-for Water (UAFW).

(d) Includes 5.0% UAFW.

(e) Assumes that 15 percent of total gross acres will be landscaped and irrigated. If available, recycled water was used to meet irrigated area demands.

(f) Miscellaneous potable water demands for Tracy Village are from existing residential units to be annexed as part of the Project. Miscellaneous recycled water demand for Tracy Village is to fill the lakes which will be constructed as part of the project.

(g) Projected land use data includes dwelling units and acreage developed by 2017.

(h) Land use data for Ellis includes dwelling units constructed by 2017. Miscellaneous potable water demand for Ellis represents projected demands for the Aquatic Center minus 2017 metered water use. The 2017 metered use was subtracted from the calculated water demands for the entire development to account for the portion of the development constructed by 2017.

(i) Land use data from hydraulic analysis TMs was used for Tracy Hills Phase 1. The parks acreage assumption was not applied to Tracy Hills Phase 1 because the available land use data specifically identified parks. The parks acreage assumption was applied to the remaining phases of Tracy Hills, which used land use data from the TAZ spreadsheet.

(j) Land use data for Kagehiro includes dwelling units constructed by 2017. Miscellaneous potable water demand for Kagehiro represents 2017 metered water use. The 2017 metered use was subtracted from the calculated water demands for the entire development to account for the portion of the development constructed by 2017.

(k) Demands for the Tracy Combined Cycle Power Plant Recycled Water Conversion are from City of Tracy Recycled Water Project - Projected Recycled Water Demands TM, West Yost Associates, October 11, 2016.

(l) It was assumed that 50 percent of the remaining Legacy Fields acreage (from City of Tracy Parks Master Plan, Table A-1, April 2013) will be developed by 2025. Projected near term demands for Legacy Fields are equal to 50 percent of projected Legacy Fields demands for the 2040 and buildout time frames.

(m) Represents the transfer of 2017 metered potable demands for selected existing parks and irrigated areas to recycled water demands. Projected recycled water demands for these areas are larger than existing potable water demands due to current potable water conservation practices. Refer to Chapter 9 for a full list of irrigated areas projected to be converted to recycled water use.

Table A-3. 2040 Time Frame - Land Use Assumptions and Projected Water Demands for New Developments

Project or Development Area	Data Source(s)[a]	Parks Area Assumption[b]	Assumed Recycled Water Availability	Residential – Very Low Density						Residential – Low Density						Residential – Medium Density						
				Dwelling Units	*Total Acres*	Residential Acres	Assumed Park Acres	PW Demand, af/yr[c]	RW Demand, af/yr[d]	Dwelling Units	*Total Acres*	Residential Acres	Assumed Park Acres	PW Demand, af/yr[c]	RW Demand, af/yr[d]	Dwelling Units	*Total Acres*	Residential Acres	Assumed Park Acres	Assumed Other Irrigated Acres[e]	PW Demand, af/yr[c]	RW Demand, af/yr[d]
UR 5 (Bright)	TAZ Spreadsheet	✓	✓							174	40.0	35.5	4.5	78.7	18.9	342	38.1	28.1	4.3	5.7	111.9	42.0
UR 7 (Bright/Castro)	TAZ Spreadsheet	✓	✓							174	40.0	35.5	4.5	78.7	18.9	432	48.0	35.4	5.4	7.2	141.3	53.0
Rocking Horse	Hydraulic Analysis TM		✓							226	56.7	56.7		102.2								
Tracy Village[f]	Hydraulic Analysis TM		✓							600	96.2	96.2		271.4								
UR 1	TAZ Spreadsheet	✓								450	103.4	91.9	11.6	254.8		250	27.8	20.5	3.1	4.2	106.6	
Ellis[g,h]	Hydraulic Analysis TM		✓							958	213.5	213.5		433.3								
Avenues	Hydraulic Analysis TM		✓							480	90.4	90.4		217.1								
UR 10	TAZ Spreadsheet	✓	✓																			
Tracy Hills[i]	Hydraulic Analysis TM, TAZ Spreadsheet	✓	✓	100	66.7	59.2	7.5	53.2	31.4	3,111	737.1	695.7	41.4	1,407.0	174.3	1,841	232.4	180.3	17.2	34.9	602.2	219.3
Westside Ranch	Westside Draft Specific Plan	✓	✓													2,130	210.0	155.0	23.5	31.5	696.8	231.7
Cordes Ranch[j]	Hydraulic Analysis TM, TAZ Spreadsheet	✓	✓																			
UR 4 (Bright Triangle)	TAZ Spreadsheet	✓	✓																			
UR 3 (Catellus)	TAZ Spreadsheet	✓	✓																			
I-205 Expansion	TAZ Spreadsheet	✓	✓													378	42.0	31.0	4.7	6.3	123.7	46.3
West Side Industrial	TAZ Spreadsheet	✓	✓																			
East Side Industrial	TAZ Spreadsheet	✓																				
Larch-Clover	TAZ Spreadsheet	✓	✓																			
Chrisman Road	TAZ Spreadsheet	✓																				
Rocha	TAZ Spreadsheet	✓																				
Berg/Byron Remainder	TAZ Spreadsheet	✓																				
Berg Road Subdivision	Hydraulic Analysis TM															71	9.9	8.4		1.5	27.2	
SWC Valpico & Corral Hollow	TAZ Spreadsheet	✓	✓																			
Kagehiro[g,k]	Email from City Planning Division									252	47.0	47.0		114.0								
Dobler/Maibes	TAZ Spreadsheet	✓	✓																			
Holly Sugar Industrial	TAZ Spreadsheet	✓	✓																			
Northeast Industrial Area	Hydraulic Analysis TM																					
Industrial Areas Specific Plan	TAZ Spreadsheet																					
I-205 Corridor Specific Plan	TAZ Spreadsheet																					
Home 2 Suites	Hydraulic Analysis TM																					
Sierra Hills	Hydraulic Analysis TM																					
Grant Line Road Apartments	Hydraulic Analysis TM																					
Aspire II	Hydraulic Analysis TM																					
Harvest	Hydraulic Analysis TM																					
321 E. Grant Line Rd Apartments	Hydraulic Analysis TM																					
Barcelona Infill	Hydraulic Analysis TM									51	10.2	10.2		23.1								
Mountain View	Tracy Municipal Services Review, June 2019			165	156.0	156.0		87.7														
Tracy Combined Cycle Power Plant RW Conversion[l]	Hydraulic Analysis TM		✓																			
Legacy Fields[m]	Hydraulic Analysis TM		✓																			
Parks RW Conversion[n]	2017 Irrigation Meters		✓																			
Infill (misc.)	TAZ Spreadsheet									14	3.2	3.2		6.3								
			Total	**265**	**223**	**215**	**7**	**141**	**31**	**6,490**	**1,438**	**1,376**	**62**	**2,987**	**212**	**5,444**	**608**	**459**	**58**	**91**	**1,810**	**592**

(a) Data Source abbreviations:
TAZ Spreadsheet - data from Land Uses with TAZ Estimates_06_23_2021_2025_2040_BU_Independent.xlsx spreadsheet received from the City Planning Division in June 2021 (Table A-1).
Hydraulic Analysis TM - data from a previously prepared hydraulic analysis technical memorandum prepared by either West Yost Associates or Blackwater Consulting Engineers, Inc.

(b) For selected projects and development areas, it was assumed that 11.2% of the total acres in very low, low, and medium density residential land uses will be developed as parks. These park acres are in addition to the identified parks in the Rocking Horse, Ellis, Avenues, Tracy Hills Phase 1, and Legacy Fields developments. If available, recycled water was used to meet park demands.
(c) Includes 9.6% Unaccounted-for Water (UAFW).
(d) Includes 5.0% UAFW.
(e) Assumes that 15 percent of total gross acres will be landscaped and irrigated. If available, recycled water was used to meet irrigated area demands.
(f) Miscellaneous potable water demands for Tracy Village are from existing residential units to be annexed as part of the Project. Miscellaneous recycled water demand for Tracy Village is to fill the lakes which will be constructed as part of the project.
(g) Projected land use data includes dwelling units and acreage developed by 2017.
(h) Land use data for Ellis includes dwelling units constructed by 2017. Miscellaneous potable water demand for Ellis represents projected demands for the Aquatic Center minus 2017 metered water use. The 2017 metered use was subtracted from the calculated water demands for the entire development to account for the portion of the development constructed by 2017.
(i) Land use data from hydraulic analysis TMs was used for Tracy Hills Phase 1. The parks acreage assumption was not applied to Tracy Hills Phase 1 because the available land use data specifically identified parks. The parks acreage assumption was applied to the remaining phases of Tracy Hills, which used land use data from the TAZ spreadsheet.
(j) Miscellaneous water use for Cordes Ranch represents the transfer of 2017 metered potable irrigation demands to recycled water demands once recycled water service is extended to Cordes Ranch.
(k) Land use data for Kagehiro includes dwelling units constructed by 2017. Miscellaneous potable water demand for Kagehiro represents 2017 metered water use. The 2017 metered use was subtracted from the calculated water demands for the entire development to account for the portion of the development constructed by 2017.
(l) Demands for the Tracy Combined Cycle Power Plant Recycled Water Conversion are from City of Tracy Recycled Water Project - Projected Recycled Water Demands TM, West Yost Associates, October 11, 2016.
(m) Remaining Legacy Fields acreage to be developed is from the City of Tracy Parks Master Plan, Table A-1, April 2013. Projected demands for Legacy Fields are equal to total demands projected in the Water Supply Assessment for the Holly Sugar Sports Park (West Yost Associates, June 2009) minus the existing recycled water demand for Legacy Fields.
(n) Represents the transfer of 2017 metered potable demands for selected existing parks and irrigated areas to recycled water demands. Projected recycled water demands for these areas are larger than existing potable water demands due to current potable water conservation practices. Refer to Chapter 9 for a full list of irrigated areas projected to be converted to recycled water use.

Table A-3. 2040 Time Frame - Land Use Assumptions and Projected Water Demands for New Developments

	Residential – High Density						Residential – Very High Density						Commercial					Office				
Project or Development Area	Dwelling Units	*Total Acres*	Residential Acres	Assumed Irrigated Acres[e]	PW Demand, af/yr[c]	RW Demand, af/yr[d]	Dwelling Units	*Total Acres*	Residential Acres	Assumed Irrigated Acres[e]	PW Demand, af/yr[c]	RW Demand, af/yr[d]	*Total Acres*	Commercial Acres	Assumed Irrigated Acres[e]	PW Demand, af/yr[c]	RW Demand, af/yr[d]	*Total Acres*	Office Acres	Assumed Irrigated Acres[e]	PW Demand, af/yr[c]	RW Demand, af/yr[d]
UR 5 (Bright)	370	20.0	17.0	3.0	85.7	12.6																
UR 7 (Bright/Castro)																						
Rocking Horse																						
Tracy Village[f]													4.0	3.4	0.6	6.8	2.5					
UR 1	150	11.5	9.8	1.7	39.4								10.0	8.5	1.5	20.1						
Ellis[g,h]													14.8	12.6	2.2	25.0	9.3					
Avenues																						
UR 10																						
Tracy Hills[i]	125	7.0	6.0	1.1	29.0	4.4							40.6	34.5	6.1	68.7	25.6	45.5	38.7	6.8	64.2	28.7
Westside Ranch	414	26.0	22.1	3.9	95.9	16.4							149.0	126.7	22.4	252.2	94.1					
Cordes Ranch[j]													55.0	46.8	8.3	93.1	34.7	69.0	58.7	10.4	97.3	43.6
UR 4 (Bright Triangle)																						
UR 3 (Catellus)																						
I-205 Expansion	496	29.0	24.6	4.3	114.9	18.3							50.0	42.5	7.5	84.6	31.6					
West Side Industrial																						
East Side Industrial													5.0	4.3	0.8	10.0						
Larch-Clover													10.0	8.5	1.5	16.9	6.3					
Chrisman Road																						
Rocha																						
Berg/Byron Remainder	72	5.0	4.3	0.8	18.7																	
Berg Road Subdivision																						
SWC Valpico & Corral Hollow																						
Kagehiro[g,k]																						
Dobler/Maibes													23.0	19.6	3.5	38.9	14.5					
Holly Sugar Industrial													18.0	15.3	2.7	30.5	11.4					
Northeast Industrial Area																						
Industrial Areas Specific Plan													32.0	27.2	4.8	64.2						
I-205 Corridor Specific Plan													37.7	32.0	5.7	75.7						
Home 2 Suites							110	2.6	2.2	0.4	18.5							0.6	0.5	0.1	1.1	
Sierra Hills	300	11.6	9.9	1.7	74.1																	
Grant Line Road Apartments	448	20.0	17.0	3.0	111.8																	
Aspire II	47	2.3	2.0	0.3	11.8																	
Harvest	300	17.9	15.2	2.7	76.6																	
321 E. Grant Line Rd Apartments	40	1.7	1.4	0.3	9.9																	
Barcelona Infill																						
Mountain View																						
Tracy Combined Cycle Power Plant RW Conversion[l]																						
Legacy Fields[m]																						
Parks RW Conversion[n]																						
Infill (misc.)	538	28.7	24.4	4.3	136.1								99.4	84.5	14.9	199.6						
Total	**3,300**	**181**	**154**	**27**	**804**	**52**	**110**	**3**	**2**	**0**	**18**		**549**	**466**	**82**	**986**	**230**	**115**	**98**	**17**	**163**	**72**

(a) Data Source abbreviations:
TAZ Spreadsheet - data from Land Uses with TAZ Estimates_06_23_2021_2025_2040_BU_Independent.xlsx spreadsheet received from the City Planning Division in June 2021 (Table A-1).
Hydraulic Analysis TM - data from a previously prepared hydraulic analysis technical memorandum prepared by either West Yost Associates or Blackwater Consulting Engineers, Inc.

(b) For selected projects and development areas, it was assumed that 11.2% of the total acres in very low, low, and medium density residential land uses will be developed as parks. These park acres are in addition to the identified parks in the Rocking Horse, Ellis, Avenues, Tracy Hills Phase 1, and Legacy Fields developments. If available, recycled water was used to meet park demands.

(c) Includes 9.6% Unaccounted-for Water (UAFW).

(d) Includes 5.0% UAFW.

(e) Assumes that 15 percent of total gross acres will be landscaped and irrigated. If available, recycled water was used to meet irrigated area demands.

(f) Miscellaneous potable water demands for Tracy Village are from existing residential units to be annexed as part of the Project. Miscellaneous recycled water demand for Tracy Village is to fill the lakes which will be constructed as part of the project.

(g) Projected land use data includes dwelling units and acreage developed by 2017.

(h) Land use data for Ellis includes dwelling units constructed by 2017. Miscellaneous potable water demand for Ellis represents projected demands for the Aquatic Center minus 2017 metered water use. The 2017 metered use was subtracted from the calculated water demands for the entire development to account for the portion of the development constructed by 2017.

(i) Land use data from hydraulic analysis TMs was used for Tracy Hills Phase 1. The parks acreage assumption was not applied to Tracy Hills Phase 1 because the available land use data specifically identified parks. The parks acreage assumption was applied to the remaining phases of Tracy Hills, which used land use data from the TAZ spreadsheet.

(j) Miscellaneous water use for Cordes Ranch represents the transfer of 2017 metered potable irrigation demands to recycled water demands once recycled water service is extended to Cordes Ranch.

(k) Land use data for Kagehiro includes dwelling units constructed by 2017. Miscellaneous potable water demand for Kagehiro represents 2017 metered water use. The 2017 metered use was subtracted from the calculated water demands for the entire development to account for the portion of the development constructed by 2017.

(l) Demands for the Tracy Combined Cycle Power Plant Recycled Water Conversion are from City of Tracy Recycled Water Project - Projected Recycled Water Demands TM, West Yost Associates, October 11, 2016.

(m) Remaining Legacy Fields acreage to be developed is from the City of Tracy Parks Master Plan, Table A-1, April 2013. Projected demands for Legacy Fields are equal to total demands projected in the Water Supply Assessment for the Holly Sugar Sports Park (West Yost Associates, June 2009) minus the existing recycled water demand for Legacy Fields.

(n) Represents the transfer of 2017 metered potable demands for selected existing parks and irrigated areas to recycled water demands. Projected recycled water demands for these areas are larger than existing potable water demands due to current potable water conservation practices. Refer to Chapter 9 for a full list of irrigated areas projected to be converted to recycled water use.

Table A-3. 2040 Time Frame - Land Use Assumptions and Projected Water Demands for New Developments

	Industrial					Institutional					Identified Parks			Misc. Water Demands					
Project or Development Area	*Total Acres*	Industrial Acres	Assumed Irrigated Acres[e]	PW Demand, af/yr[c]	RW Demand, af/yr[d]	*Total Acres*	Institutional Acres	Assumed Irrigated Acres[e]	PW Demand, af/yr[c]	RW Demand, af/yr[d]	*Total Acres*	PW Demand, af/yr[c]	RW Demand, af/yr[d]	PW Demand, af/yr[c]	RW Demand, af/yr[d]	Total Dwelling Units	Total Area, acres	Total Potable Water Demand, af/yr	Total Recycled Water Demand, af/yr
UR 5 (Bright)																886	98.1	276.3	73.5
UR 7 (Bright/Castro)																606	88.0	220.0	71.8
Rocking Horse											2.4		10.1			226	59.1	102.2	10.1
Tracy Village[f]														17.7	156.0	600	100.2	295.8	158.5
UR 1																850	152.8	420.8	
Ellis[g,h]	28.8	24.5	4.3	35.2	18.2	16.0	13.6	2.4	22.6	10.1	16.7		70.3	-29		958	289.8	486.7	108.0
Avenues											4.6		19.4			480	95.0	217.1	19.4
UR 10																			
Tracy Hills[i]	196.0	166.6	29.4	239.6	123.8	18.6	15.8	2.8	26.2	11.7	27.9		117.5			5,177	1,371.7	2,490.1	736.9
Westside Ranch						150.0	127.5	22.5	211.6	94.7						2,544	535.0	1,256.4	436.9
Cordes Ranch[j]	1,219.7	1,036.7	183.0	1,490.9	770.3									-84	83.8		1,343.7	1,597.5	932.5
UR 4 (Bright Triangle)																			
UR 3 (Catellus)																			
I-205 Expansion																874	121.0	323.2	96.2
West Side Industrial	650.0	552.5	97.5	794.5	410.5												650.0	794.5	410.5
East Side Industrial	363.0	308.6	54.5	558.2													368.0	568.2	
Larch-Clover																	10.0	16.9	6.3
Chrisman Road																			
Rocha																			
Berg/Byron Remainder																72	5.0	18.7	
Berg Road Subdivision																71	9.9	27.2	
SWC Valpico & Corral Hollow																			
Kagehiro[g,k]														-24		252	47.0	89.8	
Dobler/Maibes																	23.0	38.9	14.5
Holly Sugar Industrial	125.0	106.3	18.8	152.8	78.9												143.0	183.3	90.3
Northeast Industrial Area	468.0	397.8	70.2	719.6													468.0	719.6	
Industrial Areas Specific Plan	4.8	4.1	0.7	7.4													36.8	71.6	
I-205 Corridor Specific Plan																	37.7	75.7	
Home 2 Suites																110	3.2	19.6	
Sierra Hills																300	11.6	74.1	
Grant Line Road Apartments																448	20.0	111.8	
Aspire II																47	2.3	11.8	
Harvest																300	17.9	76.6	
321 E. Grant Line Rd Apartments																40	1.7	9.9	
Barcelona Infill																51	10.2	23.1	
Mountain View																165	156.0	87.7	
Tracy Combined Cycle Power Plant RW Conversion[l]															33.7				33.7
Legacy Fields[m]											228.5	52.3	397.9				228.5	52.3	397.9
Parks RW Conversion[n]														-318	458.1			-318	458.1
Infill (misc.)	81.0	68.9	12.2	124.5		2.7	2.3	0.4	4.7							552	215.1	471.3	
Total	**3,136**	**2,666**	**470**	**4,123**	**1,402**	**187**	**159**	**28**	**265**	**117**	**280**	**52**	**615**	**-438**	**732**	**15,609**	**6,719**	**10,911**	**4,055**

(a) Data Source abbreviations:
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Hydraulic Analysis TM - data from a previously prepared hydraulic analysis technical memorandum prepared by either West Yost Associates or Blackwater Consulting Engineers, Inc.

(b) For selected projects and development areas, it was assumed that 11.2% of the total acres in very low, low, and medium density residential land uses will be developed as parks. These park acres are in addition to the identified parks in the Rocking Horse, Ellis, Avenues, Tracy Hills Phase 1, and Legacy Fields developments. If available, recycled water was used to meet park demands.
(c) Includes 9.6% Unaccounted-for Water (UAFW).
(d) Includes 5.0% UAFW.
(e) Assumes that 15 percent of total gross acres will be landscaped and irrigated. If available, recycled water was used to meet irrigated area demands.
(f) Miscellaneous potable water demands for Tracy Village are from existing residential units to be annexed as part of the Project. Miscellaneous recycled water demand for Tracy Village is to fill the lakes which will be constructed as part of the project.
(g) Projected land use data includes dwelling units and acreage developed by 2017.
(h) Land use data for Ellis includes dwelling units constructed by 2017. Miscellaneous potable water demand for Ellis represents projected demands for the Aquatic Center minus 2017 metered water use. The 2017 metered use was subtracted from the calculated water demands for the entire development to account for the portion of the development constructed by 2017.
(i) Land use data from hydraulic analysis TMs was used for Tracy Hills Phase 1. The parks acreage assumption was not applied to Tracy Hills Phase 1 because the available land use data specifically identified parks. The parks acreage assumption was applied to the remaining phases of Tracy Hills, which used land use data from the TAZ spreadsheet.
(j) Miscellaneous water use for Cordes Ranch represents the transfer of 2017 metered potable irrigation demands to recycled water demands once recycled water service is extended to Cordes Ranch.
(k) Land use data for Kagehiro includes dwelling units constructed by 2017. Miscellaneous potable water demand for Kagehiro represents 2017 metered water use. The 2017 metered use was subtracted from the calculated water demands for the entire development to account for the portion of the development constructed by 2017.
(l) Demands for the Tracy Combined Cycle Power Plant Recycled Water Conversion are from City of Tracy Recycled Water Project - Projected Recycled Water Demands TM, West Yost Associates, October 11, 2016.
(m) Remaining Legacy Fields acreage to be developed is from the City of Tracy Parks Master Plan, Table A-1, April 2013. Projected demands for Legacy Fields are equal to total demands projected in the Water Supply Assessment for the Holly Sugar Sports Park (West Yost Associates, June 2009) minus the existing recycled water demand for Legacy Fields.
(n) Represents the transfer of 2017 metered potable demands for selected existing parks and irrigated areas to recycled water demands. Projected recycled water demands for these areas are larger than existing potable water demands due to current potable water conservation practices. Refer to Chapter 9 for a full list of irrigated areas projected to be converted to recycled water use.

Table A-4. Buildout Time Frame - Land Use Assumptions and Projected Water Demands for New Developments

Project or Development Area	Data Source(s)[a]	Parks Area Assumption[b]	Assumed Recycled Water Availability	Residential – Very Low Density						Residential – Low Density						Residential – Medium Density						
				Dwelling Units	*Total Acres*	Residential Acres	Assumed Park Acres	PW Demand, af/yr[c]	RW Demand, af/yr[d]	Dwelling Units	*Total Acres*	Residential Acres	Assumed Park Acres	PW Demand, af/yr[c]	RW Demand, af/yr[d]	Dwelling Units	*Total Acres*	Residential Acres	Assumed Park Acres	Assumed Other Irrigated Acres[e]	PW Demand, af/yr[c]	RW Demand, af/yr[d]
UR 5 (Bright)	TAZ Spreadsheet	✓	✓							174	40.0	35.5	4.5	78.7	18.9	342	38.1	28.1	4.3	5.7	111.9	42.0
UR 7 (Bright/Castro)	TAZ Spreadsheet	✓	✓							174	40.0	35.5	4.5	78.7	18.9	432	48.0	35.4	5.4	7.2	141.3	53.0
Rocking Horse	Hydraulic Analysis TM		✓							226	56.7	56.7		102.2								
Tracy Village[f]	Hydraulic Analysis TM		✓							600	96.2	96.2		271.4								
UR 1	TAZ Spreadsheet	✓	✓	570	380.0	337.4	42.6	303.0	179.2	1,255	288.5	256.2	32.3	567.6	136.1	535	59.4	43.9	6.7	8.9	175.0	65.6
Ellis[g,h]	Hydraulic Analysis TM		✓							958	213.5	213.5		433.3								
Avenues	Hydraulic Analysis TM		✓							480	90.4	90.4		217.1								
UR 10	TAZ Spreadsheet	✓	✓																			
Tracy Hills[i]	Hydraulic Analysis TM, TAZ Spreadsheet	✓	✓	122	81.3	72.2	9.1	64.9	38.4	3,439	812.5	762.7	49.8	1,555.4	209.9	3,491	415.7	315.6	37.8	62.4	1,142.0	421.6
Westside	Westside Draft Specific Plan	✓	✓													2,130	210.0	155.0	23.5	31.5	696.8	231.7
Cordes Ranch[j]	Hydraulic Analysis TM, TAZ Spreadsheet	✓	✓																			
UR 4 (Bright Triangle)	TAZ Spreadsheet	✓	✓																			
UR 3 (Sandhu)	TAZ Spreadsheet	✓	✓	60	40.0	35.5	4.5	31.9	18.9													
I-205 Expansion	TAZ Spreadsheet	✓	✓													378	42.0	31.0	4.7	6.3	123.7	46.3
West Side Industrial	TAZ Spreadsheet	✓	✓																			
East Side Industrial	TAZ Spreadsheet	✓	✓																			
Larch-Clover	TAZ Spreadsheet	✓	✓	375	250.0	222.0	28.0	199.3	117.9	174	40.0	35.5	4.5	78.7	18.9	360	40.0	29.5	4.5	6.0	117.8	44.1
Chrisman Road	TAZ Spreadsheet	✓	✓																			
Rocha	TAZ Spreadsheet	✓	✓							296	68.0	60.4	7.6	133.9	32.1							
Berg/Byron Remainder	TAZ Spreadsheet	✓														411	39.0	28.8	4.4	5.9	169.3	
Berg Road Subdivision	Hydraulic Analysis TM															71	9.9	8.4		1.5	27.2	
SWC Valpico & Corral Hollow	TAZ Spreadsheet	✓	✓							282	65.0	57.7	7.3	127.5	30.7							
Kagehiro[g,k]	Email from City Planning Division									252	47.0	47.0		114.0								
Dobler/Maibes	TAZ Spreadsheet	✓	✓																			
Holly Sugar Industrial	TAZ Spreadsheet	✓	✓																			
Northeast Industrial Area	Hydraulic Analysis TM																					
Industrial Areas Specific Plan	TAZ Spreadsheet																					
I-205 Corridor Specific Plan	TAZ Spreadsheet																					
Home 2 Suites	Hydraulic Analysis TM																					
Sierra Hills	Hydraulic Analysis TM																					
Grant Line Road Apartments	Hydraulic Analysis TM																					
Aspire II	Hydraulic Analysis TM																					
Harvest	Hydraulic Analysis TM																					
321 E. Grant Line Rd Apartments	Hydraulic Analysis TM																					
Barcelona Infill	Hydraulic Analysis TM									51	10.2	10.2		23.1								
Mountain View	Tracy Municipal Services Review, June 2019			165	156.0	156.0		87.7														
Tracy Combined Cycle Power Plant RW Conversion[l]	Hydraulic Analysis TM		✓																			
Legacy Fields[m]	Hydraulic Analysis TM		✓																			
Parks RW Conversion[n]	2017 Irrigation Meters		✓																			
Infill (misc.)	TAZ Spreadsheet									14	3.2	3.2		6.3								
			Total	**1,292**	**907**	**823**	**84**	**687**	**354**	**8,375**	**1,871**	**1,761**	**110**	**3,788**	**465**	**8,150**	**902**	**676**	**91**	**135**	**2,705**	**904**

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(b) For selected projects and development areas, it was assumed that 11.2% of the total acres in very low, low, and medium density residential land uses will be developed as parks. These park acres are in addition to the identified parks in the Rocking Horse, Ellis, Avenues, Tracy Hills Phase 1, and Legacy Fields developments. If available, recycled water was used to meet park demands.
(c) Includes 9.6% Unaccounted-for Water (UAFW).
(d) Includes 5.0% UAFW.
(e) Assumes that 15 percent of total gross acres will be landscaped and irrigated. If available, recycled water was used to meet irrigated area demands.
(f) Miscellaneous potable water demands for Tracy Village are from existing residential units to be annexed as part of the Project. Miscellaneous recycled water demand for Tracy Village is to fill the lakes which will be constructed as part of the project.
(g) Projected land use data includes dwelling units and acreage developed by 2017.
(h) Land use data for Ellis includes dwelling units constructed by 2017. Miscellaneous potable water demand for Ellis represents projected demands for the Aquatic Center minus 2017 metered water use. The 2017 metered use was subtracted from the calculated water demands for the entire development to account for the portion of the development constructed by 2017.
(i) Land use data from hydraulic analysis TMs was used for Tracy Hills Phase 1. The parks acreage assumption was not applied to Tracy Hills Phase 1 because the available land use data specifically identified parks. The parks acreage assumption was applied to the remaining phases of Tracy Hills, which used land use data from the TAZ spreadsheet.
(j) Miscellaneous water use for Cordes Ranch represents the transfer of 2017 metered potable irrigation demands to recycled water demands once recycled water service is extended to Cordes Ranch.
(k) Land use data for Kagehiro includes dwelling units constructed by 2017. Miscellaneous potable water demand for Kagehiro represents 2017 metered water use. The 2017 metered use was subtracted from the calculated water demands for the entire development to account for the portion of the development constructed by 2017.
(l) Demands for the Tracy Combined Cycle Power Plant Recycled Water Conversion are from City of Tracy Recycled Water Project - Projected Recycled Water Demands TM, West Yost Associates, October 11, 2016.
(m) Remaining Legacy Fields acreage to be developed is from the City of Tracy Parks Master Plan, Table A-1, April 2013. Projected demands for Legacy Fields are equal to total demands projected in the Water Supply Assessment for the Holly Sugar Sports Park (West Yost Associates, June 2009) minus the existing recycled water demand for Legacy Fields.
(n) Represents the transfer of 2017 metered potable demands for selected existing parks and irrigated areas to recycled water demands. Projected recycled water demands for these areas are larger than existing potable water demands due to current potable water conservation practices. Refer to Chapter 9 for a full list of irrigated areas projected to be converted to recycled water use.

Table A-4. Buildout Time Frame - Land Use Assumptions and Projected Water Demands for New Developments

	Residential – High Density						Residential – Very High Density						Commercial					Office				
Project or Development Area	Dwelling Units	*Total Acres*	Residential Acres	Assumed Irrigated Acres[e]	PW Demand, af/yr[c]	RW Demand, af/yr[d]	Dwelling Units	*Total Acres*	Residential Acres	Assumed Irrigated Acres[e]	PW Demand, af/yr[c]	RW Demand, af/yr[d]	*Total Acres*	Commercial Acres	Assumed Irrigated Acres[e]	PW Demand, af/yr[c]	RW Demand, af/yr[d]	*Total Acres*	Office Acres	Assumed Irrigated Acres[e]	PW Demand, af/yr[c]	RW Demand, af/yr[d]
UR 5 (Bright)	370	20.0	17.0	3.0	85.7	12.6							10.0	8.5	1.5	16.9	6.3					
UR 7 (Bright/Castro)																						
Rocking Horse																						
Tracy Village[f]													4.0	3.4	0.6	6.8	2.5					
UR 1	519	39.9	33.9	6.0	120.3	25.2							30.0	25.5	4.5	50.8	18.9					
Ellis[g,h]													14.8	12.6	2.2	25.0	9.3					
Avenues																						
UR 10																						
Tracy Hills[i]	125	7.0	6.0	1.1	29.0	4.4							40.6	34.5	6.1	68.7	25.6	45.5	38.7	6.8	64.2	28.7
Westside	414	26.0	22.1	3.9	95.9	16.4							149.0	126.7	22.4	252.2	94.1					
Cordes Ranch[i]													55.0	46.8	8.3	93.1	34.7	126.0	107.1	18.9	177.7	79.6
UR 4 (Bright Triangle)	816	34.0	28.9	5.1	189.1	21.5							80.0	68.0	12.0	135.4	50.5	44.0	37.4	6.6	62.1	27.8
UR 3 (Sandhu)													45.0	38.3	6.8	76.2	28.4	40.0	34.0	6.0	56.4	25.3
I-205 Expansion	1,370	80.0	68.0	12.0	317.4	50.5							50.0	42.5	7.5	84.6	31.6					
West Side Industrial																						
East Side Industrial													5.0	4.3	0.8	8.5	3.2					
Larch-Clover	288	12.0	10.2	1.8	66.7	7.6							110.0	93.5	16.5	186.2	69.5					
Chrisman Road													13.0	11.1	2.0	22.0	8.2					
Rocha	431	23.0	19.6	3.5	99.9	14.5																
Berg/Byron Remainder	72	5.0	4.3	0.8	18.7																	
Berg Road Subdivision																						
SWC Valpico & Corral Hollow																						
Kagehiro[g,k]																						
Dobler/Maibes													23.0	19.6	3.5	38.9	14.5					
Holly Sugar Industrial													18.0	15.3	2.7	30.5	11.4					
Northeast Industrial Area																						
Industrial Areas Specific Plan	520	27.7	23.6	4.2	131.5								32.0	27.2	4.8	64.2						
I-205 Corridor Specific Plan													37.7	32.0	5.7	75.7						
Home 2 Suites							110	2.6	2.2	0.4	18.5							0.6	0.5	0.1	1.1	
Sierra Hills	300	11.6	9.9	1.7	74.1																	
Grant Line Road Apartments	448	20.0	17.0	3.0	111.8																	
Aspire II	47	2.3	2.0	0.3	11.8																	
Harvest	300	17.9	15.2	2.7	76.6																	
321 E. Grant Line Rd Apartments	40	1.7	1.4	0.3	9.9																	
Barcelona Infill																						
Mountain View																						
Tracy Combined Cycle Power Plant RW Conversion[l]																						
Legacy Fields[m]																						
Parks RW Conversion[n]																						
Infill (misc.)	973	51.9	44.1	7.8	246.1								100.4	85.3	15.1	201.6						
Total	**7,033**	**380**	**323**	**57**	**1,685**	**153**	**110**	**3**	**2**	**0**	**18**		**818**	**695**	**123**	**1,437**	**409**	**256**	**218**	**38**	**361**	**161**

(a) Data Source abbreviations:
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(b) For selected projects and development areas, it was assumed that 11.2% of the total acres in very low, low, and medium density residential land uses will be developed as parks. These park acres are in addition to the identified parks in the Rocking Horse, Ellis, Avenues, Tracy Hills Phase 1, and Legacy Fields developments. If available, recycled water was used to meet park demands.

(c) Includes 9.6% Unaccounted-for Water (UAFW).

(d) Includes 5.0% UAFW.

(e) Assumes that 15 percent of total gross acres will be landscaped and irrigated. If available, recycled water was used to meet irrigated area demands.

(f) Miscellaneous potable water demands for Tracy Village are from existing residential units to be annexed as part of the Project. Miscellaneous recycled water demand for Tracy Village is to fill the lakes which will be constructed as part of the project.

(g) Projected land use data includes dwelling units and acreage developed by 2017.

(h) Land use data for Ellis includes dwelling units constructed by 2017. Miscellaneous potable water demand for Ellis represents projected demands for the Aquatic Center minus 2017 metered water use. The 2017 metered use was subtracted from the calculated water demands for the entire development to account for the portion of the development constructed by 2017.

(i) Land use data from hydraulic analysis TMs was used for Tracy Hills Phase 1. The parks acreage assumption was not applied to Tracy Hills Phase 1 because the available land use data specifically identified parks. The parks acreage assumption was applied to the remaining phases of Tracy Hills, which used land use data from the TAZ spreadsheet.

(j) Miscellaneous water use for Cordes Ranch represents the transfer of 2017 metered potable irrigation demands to recycled water demands once recycled water service is extended to Cordes Ranch.

(k) Land use data for Kagehiro includes dwelling units constructed by 2017. Miscellaneous potable water demand for Kagehiro represents 2017 metered water use. The 2017 metered use was subtracted from the calculated water demands for the entire development to account for the portion of the development constructed by 2017.

(l) Demands for the Tracy Combined Cycle Power Plant Recycled Water Conversion are from City of Tracy Recycled Water Project - Projected Recycled Water Demands TM, West Yost Associates, October 11, 2016.

(m) Remaining Legacy Fields acreage to be developed is from the City of Tracy Parks Master Plan, Table A-1, April 2013. Projected demands for Legacy Fields are equal to total demands projected in the Water Supply Assessment for the Holly Sugar Sports Park (West Yost Associates, June 2009) minus the existing recycled water demand for Legacy Fields.

(n) Represents the transfer of 2017 metered potable demands for selected existing parks and irrigated areas to recycled water demands. Projected recycled water demands for these areas are larger than existing potable water demands due to current potable water conservation practices. Refer to Chapter 9 for a full list of irrigated areas projected to be converted to recycled water use.

Table A-4. Buildout Time Frame - Land Use Assumptions and Projected Water Demands for New Developments

Project or Development Area	Industrial					Institutional					Identified Parks			Misc. Water Demands		Total Dwelling Units	Total Area, acres	Total Potable Water Demand, af/yr	Total Recycled Water Demand, af/yr
	Total Acres	Industrial Acres	Assumed Irrigated Acres[e]	PW Demand, af/yr[c]	RW Demand, af/yr[d]	*Total Acres*	Institutional Acres	Assumed Irrigated Acres[e]	PW Demand, af/yr[c]	RW Demand, af/yr[d]	*Total Acres*	PW Demand, af/yr[c]	RW Demand, af/yr[d]	PW Demand, af/yr[c]	RW Demand, af/yr[d]				
UR 5 (Bright)																886	108.1	293.2	79.9
UR 7 (Bright/Castro)																606	88.0	220.0	71.8
Rocking Horse											2.4		10.1			226	59.1	102.2	10.1
Tracy Village[f]														17.7	156.0	600	100.2	295.8	158.5
UR 1																2,879	797.9	1,216.6	425.0
Ellis[g,h]	28.8	24.5	4.3	35.2	18.2	16.0	13.6	2.4	22.6	10.1	16.7		70.3	7.1		958	289.8	523.2	108.0
Avenues											4.6		19.4			480	95.0	217.1	19.4
UR 10	116.0	98.6	17.4	141.8	73.3												116.0	141.8	73.3
Tracy Hills[i]	308.0	261.8	46.2	376.5	194.5	18.6	15.8	2.8	26.2	11.7	27.9		117.5			7,177	1,757.2	3,326.8	1,052.4
Westside						150.0	127.5	22.5	211.6	94.7						2,544	535.0	1,256.4	436.9
Cordes Ranch[j]	1,219.7	1,036.7	183.0	1,490.9	770.3									-84	83.8		1,400.7	1,677.9	968.5
UR 4 (Bright Triangle)																816	158.0	386.5	99.8
UR 3 (Sandhu)	535.0	454.8	80.3	654.0	337.9											60	660.0	818.4	410.4
I-205 Expansion																1,748	172.0	525.7	128.4
West Side Industrial	650.0	552.5	97.5	794.5	410.5												650.0	794.5	410.5
East Side Industrial	363.0	308.6	54.5	443.7	229.3												368.0	452.2	232.4
Larch-Clover																1,197	452.0	648.7	257.9
Chrisman Road	100.0	85.0	15.0	122.2	63.2												113.0	144.2	71.4
Rocha																727	91.0	233.7	46.6
Berg/Byron Remainder																483	44.0	188.0	
Berg Road Subdivision																71	9.9	27.2	
SWC Valpico & Corral Hollow																282	65.0	127.5	30.7
Kagehiro[g,k]														-24		252	47.0	89.8	
Dobler/Maibes																	23.0	38.9	14.5
Holly Sugar Industrial	125.0	106.3	18.8	152.8	78.9												143.0	183.3	90.3
Northeast Industrial Area	468.0	397.8	70.2	719.6													468.0	719.6	
Industrial Areas Specific Plan	26.8	22.8	4.0	41.2												520	86.5	237.0	
I-205 Corridor Specific Plan																	37.7	75.7	
Home 2 Suites																110	3.2	19.6	
Sierra Hills																300	11.6	74.1	
Grant Line Road Apartments																448	20.0	111.8	
Aspire II																47	2.3	11.8	
Harvest																300	17.9	76.6	
321 E. Grant Line Rd Apartments																40	1.7	9.9	
Barcelona Infill																51	10.2	23.1	
Mountain View																165	156.0	87.7	
Tracy Combined Cycle Power Plant RW Conversion[l]															33.7				33.7
Legacy Fields[m]											228.5	52.3	397.9				228.5	52.3	397.9
Parks RW Conversion[n]														-432	593.5			-432	593.5
Infill (misc.)	153.0	130.1	23.0	235.3		2.7	2.3	0.4	4.7							987	311.3	694.0	
Total	**4,093**	**3,479**	**614**	**5,208**	**2,176**	**187**	**159**	**28**	**265**	**117**	**280**	**52**	**615**	**-516**	**867**	**24,960**	**9,698**	**15,691**	**6,222**

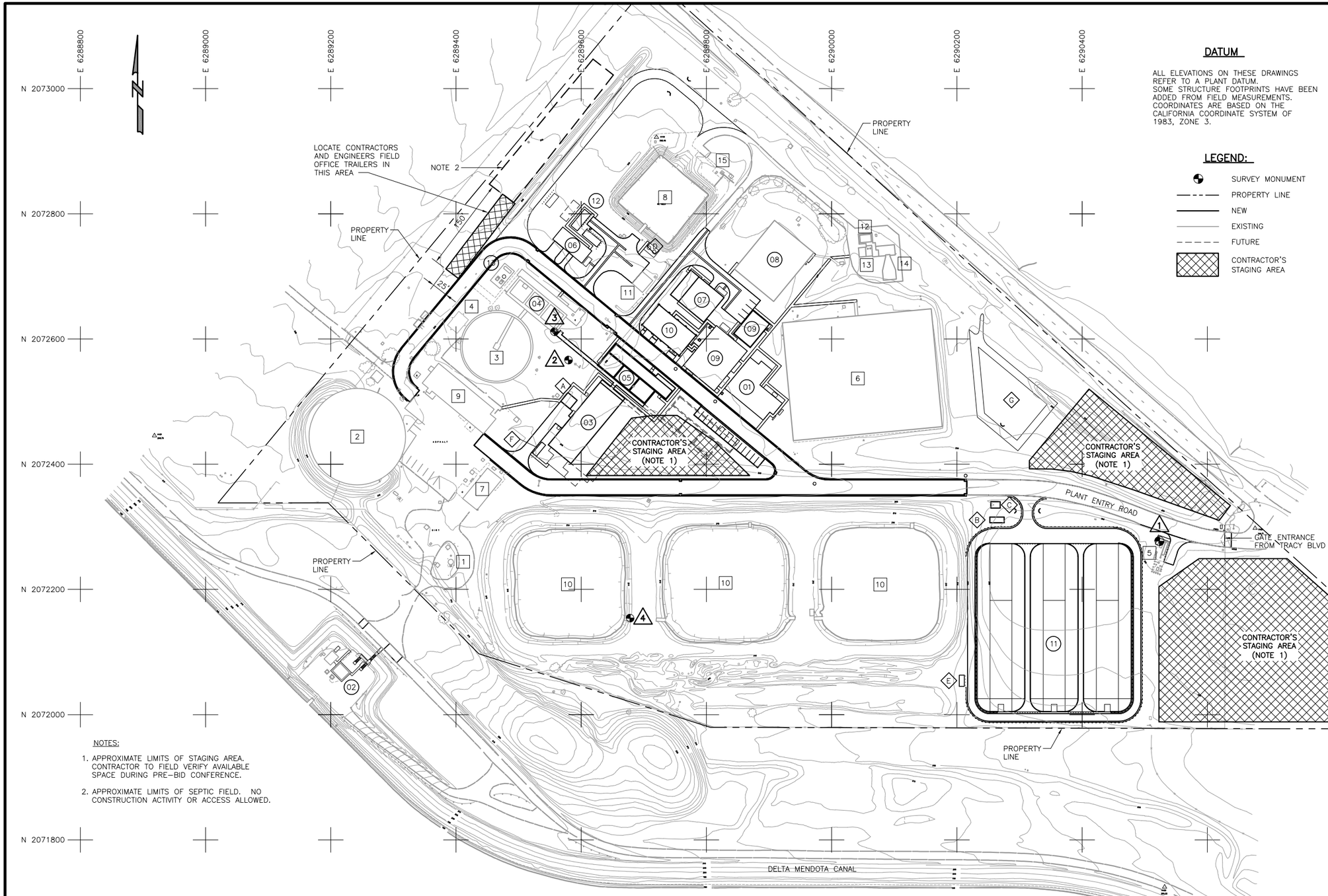
(a) Data Source abbreviations:
TAZ Spreadsheet - data from Land Uses with TAZ Estimates_06_23_2021_2025_2040_BU_Independent.xlsx spreadsheet received from the City Planning Division in June 2021 (Table A-1).
Hydraulic Analysis TM - data from a previously prepared hydraulic analysis technical memorandum prepared by either West Yost Associates or Blackwater Consulting Engineers, Inc.

(b) For selected projects and development areas, it was assumed that 11.2% of the total acres in very low, low, and medium density residential land uses will be developed as parks. These park acres are in addition to the identified parks in the Rocking Horse, Ellis, Avenues, Tracy Hills Phase 1, and Legacy Fields developments. If available, recycled water was used to meet park demands.
(c) Includes 9.6% Unaccounted-for Water (UAFW).
(d) Includes 5.0% UAFW.
(e) Assumes that 15 percent of total gross acres will be landscaped and irrigated. If available, recycled water was used to meet irrigated area demands.
(f) Miscellaneous potable water demands for Tracy Village are from existing residential units to be annexed as part of the Project. Miscellaneous recycled water demand for Tracy Village is to fill the lakes which will be constructed as part of the project.
(g) Projected land use data includes dwelling units and acreage developed by 2017.
(h) Land use data for Ellis includes dwelling units constructed by 2017. Miscellaneous potable water demand for Ellis represents projected demands for the Aquatic Center minus 2017 metered water use. The 2017 metered use was subtracted from the calculated water demands for the entire development to account for the portion of the development constructed by 2017.
(i) Land use data from hydraulic analysis TMs was used for Tracy Hills Phase 1. The parks acreage assumption was not applied to Tracy Hills Phase 1 because the available land use data specifically identified parks. The parks acreage assumption was applied to the remaining phases of Tracy Hills, which used land use data from the TAZ spreadsheet.
(j) Miscellaneous water use for Cordes Ranch represents the transfer of 2017 metered potable irrigation demands to recycled water demands once recycled water service is extended to Cordes Ranch.
(k) Land use data for Kagehiro includes dwelling units constructed by 2017. Miscellaneous potable water demand for Kagehiro represents 2017 metered water use. The 2017 metered use was subtracted from the calculated water demands for the entire development to account for the portion of the development constructed by 2017.
(l) Demands for the Tracy Combined Cycle Power Plant Recycled Water Conversion are from City of Tracy Recycled Water Project - Projected Recycled Water Demands TM, West Yost Associates, October 11, 2016.
(m) Remaining Legacy Fields acreage to be developed is from the City of Tracy Parks Master Plan, Table A-1, April 2013. Projected demands for Legacy Fields are equal to total demands projected in the Water Supply Assessment for the Holly Sugar Sports Park (West Yost Associates, June 2009) minus the existing recycled water demand for Legacy Fields.
(n) Represents the transfer of 2017 metered potable demands for selected existing parks and irrigated areas to recycled water demands. Projected recycled water demands for these areas are larger than existing potable water demands due to current potable water conservation practices. Refer to Chapter 9 for a full list of irrigated areas projected to be converted to recycled water use.

APPENDIX B

JJWTP Expansion Project

Site Plan, Process Schematic, and Hydraulic Profile



NOTES:

1. APPROXIMATE LIMITS OF STAGING AREA. CONTRACTOR TO FIELD VERIFY AVAILABLE SPACE DURING PRE-BID CONFERENCE.
2. APPROXIMATE LIMITS OF SEPTIC FIELD. NO CONSTRUCTION ACTIVITY OR ACCESS ALLOWED.

DATUM

ALL ELEVATIONS ON THESE DRAWINGS REFER TO A PLANT DATUM. SOME STRUCTURE FOOTPRINTS HAVE BEEN ADDED FROM FIELD MEASUREMENTS. COORDINATES ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM OF 1983, ZONE 3.

LEGEND:

- SURVEY MONUMENT
- PROPERTY LINE
- NEW
- EXISTING
- FUTURE
- CONTRACTOR'S STAGING AREA

SURVEY GRID MONUMENT DATA

NO	DESCRIPTION	COORDINATES	ELEVATION
1	BRASS DISK IN CONC SLAB	N 2072277.29 E 6290523.62	200.76
2	BRASS DISK IN CONC VAULT	N 2072566.47 E 6289579.75	204.54
3	BRASS DISK IN CONC SLAB	N 2072611.76 E 6289557.30	216.52
4	BRASS DISK IN CONC HEADWALL	N 2072154.17 E 6289678.10	211.72

NEW FACILITIES/MODIFICATIONS

- 01 OPERATIONS/CONTROL BUILDING
- 02 INFLUENT PUMP STATION MODIFICATIONS
- 03 FLOCCULATION / SEDIMENTATION SYSTEM
- 04 EXISTING FILTER NO.S 1 – 3 MODIFICATIONS
- 05 FILTERS NO.S 4 – 6
- 06 BLOWER AND ELECTRICAL DISTRIBUTION BUILDING
- 07 UV FACILITY / FILTER OVERFLOW STRUCTURE
- 08 EXISTING CLEARWELL NO.1 MODIFICATIONS
- 09 CHEMICAL BUILDING / CHLORINE SCRUBBER
- 10 CHEMICAL TANK FARM
- 11 BACKWASH WATER RECOVERY BASIN NO.1 – 3
- 12 TRANSFORMER/GENERATOR/FUEL TANK
- 13 HYDROPNEUMATIC TANK, AIR RECEIVER AND AIR BLOWER

YARD STRUCTURE

- A DRAIN PUMP STATION
- B BACKWASH WATER RECOVERY BASIN VALVE VAULT
- C BACKWASH WATER RECOVERY BASIN METER
- D HYDROPNEUMATIC TANK PAD
- E WASTE STREAM TREATMENT MCC PAD
- F FLOCCULATION / SEDIMENTATION MCC PAD
- G DETENTION POND

EXISTING FACILITIES

- 1 SURGE TOWER
- 2 EQUALIZATION TANK
- 3 REACTOR CLARIFIER
- 4 CONTROL METER VAULT
- 5 WELL NO.2
- 6 CLEARWELL NO.2
- 7 CHEMICAL FEED BUILDING
- 8 FTW RECOVERY POND *
- 9 CONTROL BUILDING
- 10 SLUDGE DRYING BED NO.1 – 3
- 11 SWITCHGEAR BUILDING
- 12 ZONE 1 BPS ELECTRICAL BUILDING
- 13 METER VAULT
- 15 WELL NO.1
- 14 ZONE 1 PUMP STATION
- * FACILITY RENAMED AFTER IMPROVEMENTS

A – GENERAL SITE PLAN
SCALE: 1"= 80'
FILE: 00G011

CONFORMED DOCUMENTS FOR CONSTRUCTION

REV	DATE	BY	DESCRIPTION

DESIGNED MAL
DRAWN DST
CHECKED WCL
DATE MAR 2005

DISCIPLINE ENGINEER: ** ORIGINAL STAMPED BY MATHEW AXEL LARSON **
PROJECT ENGINEER: ** ORIGINAL STAMPED BY SUZAN K. ENGLAND **
PARTNER: ** ORIGINAL STAMPED BY KENNETH WILKINS **

carollo engineers

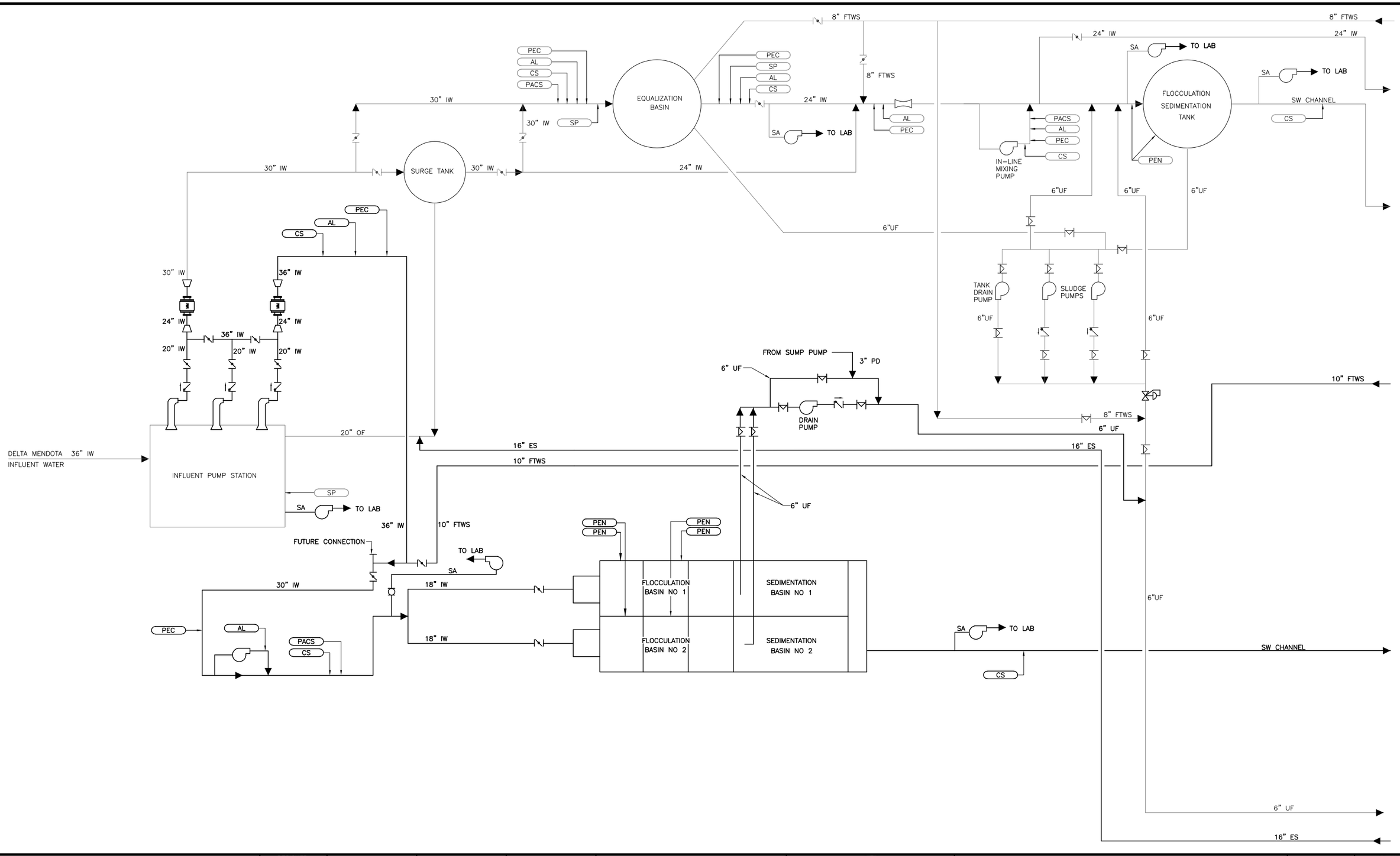
CITY OF TRACY
JOHN JONES WTP – EXPANSION PROJECT
GENERAL
SITE PLAN

VERIFY SCALES
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

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DRAWING NO. G-12
SHEET NO. 12 OF 573

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RECORD DRAWING

THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED IN PART ON INFORMATION PROVIDED BY OTHERS

THIS DRAWING WAS PREPARED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREON AND IS NOT TO BE USED ELSEWHERE

DESIGNED	MAL
DRAWN	SJB
CHECKED	BTF
DATE	MAR 2005

DISCIPLINE ENGINEER

PROJECT ENGINEER

PARTNER

carollo engineers

CITY OF TRACY

JOHN JONES WTP – EXPANSION PROJECT

GENERAL

PROCESS SCHEMATIC
SHEET 1 OF 2

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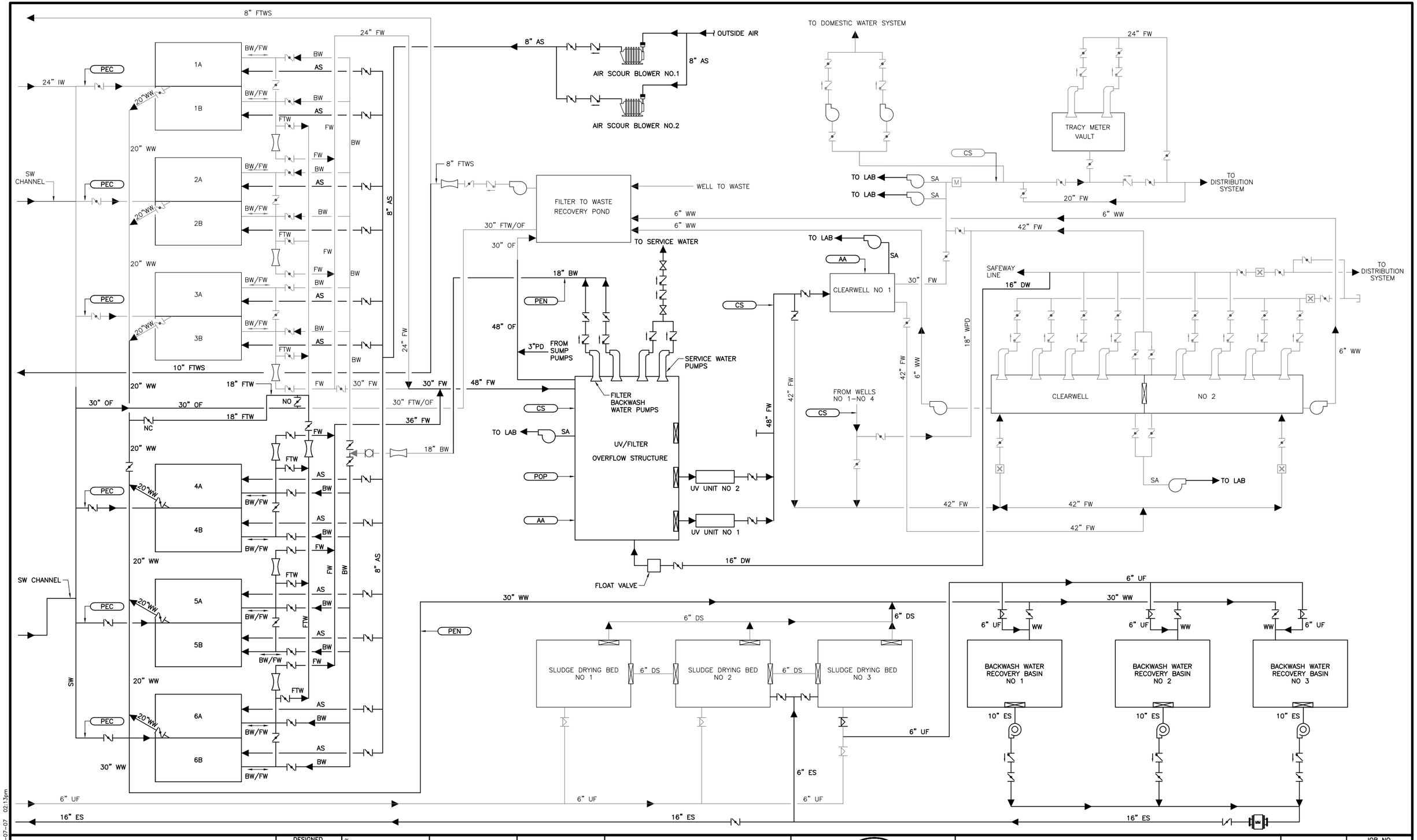
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SHEET NO. 9 OF 573

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RECORD DRAWING

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DESIGNED	MAL
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CHECKED	BTF
DATE	MAR 2005

DISCIPLINE ENGINEER

PROJECT ENGINEER

PARTNER

carollo engineers

CITY OF TRACY

JOHN JONES WTP – EXPANSION PROJECT

GENERAL

PROCESS SCHEMATIC
SHEET 2 OF 2

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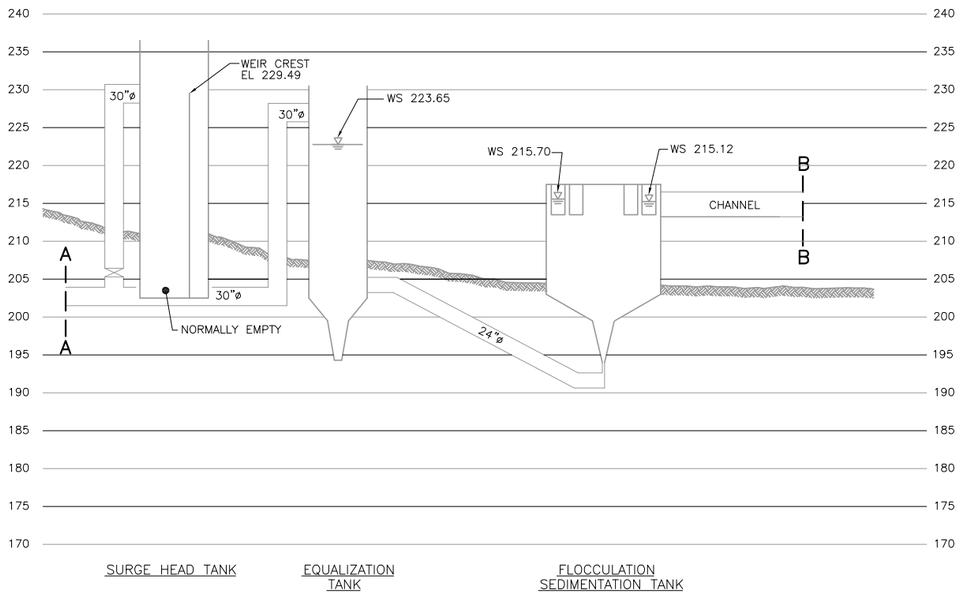
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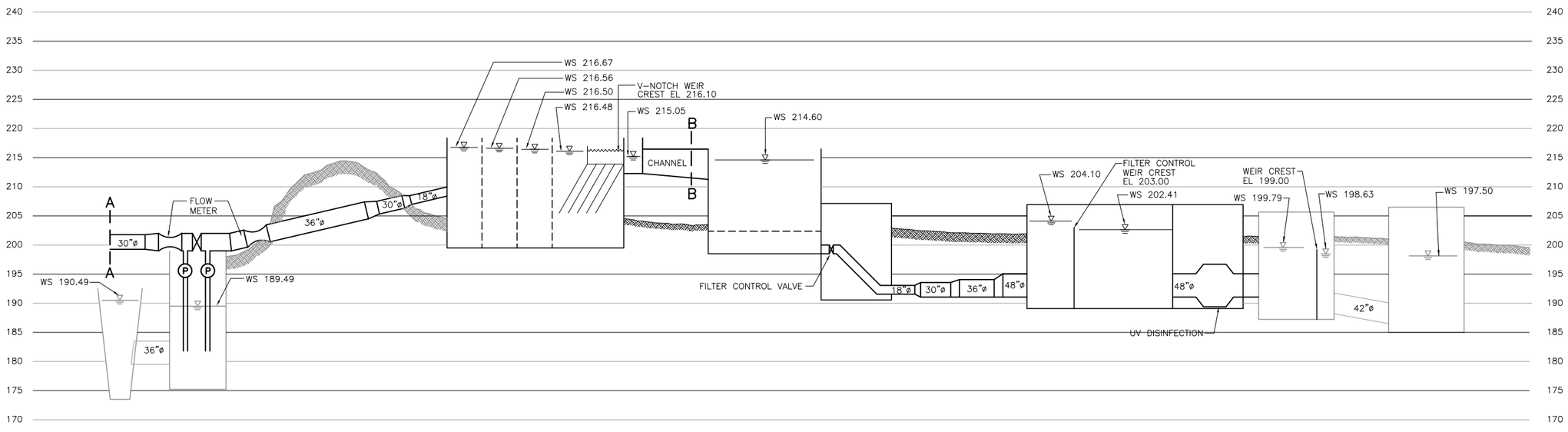
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LEGEND

XXX — WATER SURFACE ELEVATION AT 30 MGD

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REV	DATE	BY	DESCRIPTION
			CONFORMED DOCUMENTS FOR CONSTRUCTION

DESIGNED MAL
DRAWN PGG
CHECKED AS
DATE MAR 2005

DISCIPLINE ENGINEER: ** ORIGINAL STAMPED BY MATHEW AXEL LARSON **
PROJECT ENGINEER: ** ORIGINAL STAMPED BY SUZAN K. ENGLAND **
PARTNER: ** ORIGINAL STAMPED BY KENNETH WILKINS **

carollo engineers

CITY OF TRACY
JOHN JONES WTP – EXPANSION PROJECT
GENERAL
HYDRAULIC PROFILE

VERIFY SCALES
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SHEET NO. 11 OF 573

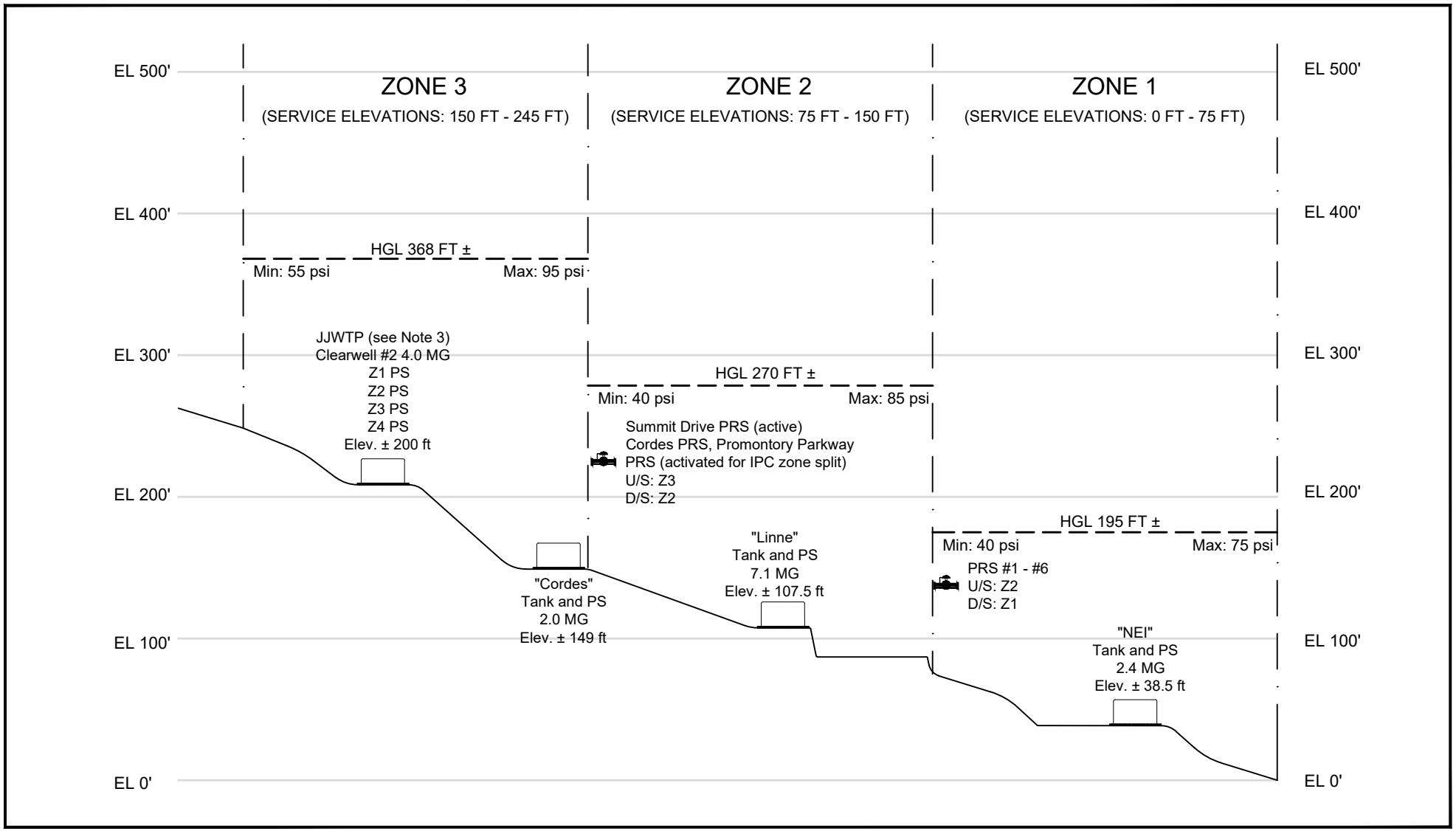
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APPENDIX C

City of Tracy

Existing Potable Water System Hydraulic Grade Schematic

N:\Clients\404 Tracy\12-18-41 Water Master Plan Update\CAD\Figures\Appendix7B_HGL.dwg 11/2/2020 1:08 PM nhoman



Notes:

1. Elevations on this figure are from various sources and should not be used for design purposes.
2. Horizontal spacing is for illustrative purposes and is not to scale.
3. JJWTP Facilities do not currently supply Zone 3 directly.
4. Ellis Reduced Zone (not shown) is served from Zone 3 via the Summit Drive PRV. It has a hydraulic grade of approximately 323 ft, and a service elevation range of 140 ft - 185 ft.
5. Last updated December 2019.

Appendix C

Existing Potable Water System
Hydraulic Grade Schematic

WEST YOST ASSOCIATES

City of Tracy
Water System
Master Plan Update

APPENDIX D

Lammers Road and Hood Way Design Recommendation Technical Memoranda

Note: The Technical Memoranda in this Appendix were written using the old pressure zone nomenclature. Please note that "City-side Pressure Zone 3" is now referred to as "Pressure Zone 3" using the updated pressure zone nomenclature discussed in Chapters 7 and 8.

WEST YOST ASSOCIATES

TECHNICAL MEMORANDUM

DATE: September 25, 2019

Project No.: 404-60-19-47
SENT VIA: EMAIL

TO: Zabih Zaca, City of Tracy

CC: Robert Armijo, City of Tracy
Paul Verma, City of Tracy
Al Gali, City of Tracy
Nanda Gottiparthy, SNG & Associates, Inc.



FROM: Nathaniel Homan, PE, RCE #89903
Jim Connell, PE, RCE #63052

REVIEWED BY: Amy Kwong, PE, RCE #73213

SUBJECT: Design Recommendations for Lammers Road Pipeline

In a technical memorandum (TM) prepared for the City of Tracy (City) titled *Hydraulic Evaluation of International Park of Commerce (IPC) Buildings 3, 4, and 12*, dated May 18, 2017 (May 2017 TM), West Yost Associates (West Yost) recommended that 3,440 lineal feet (lf) of 20-inch diameter Pressure Zone 2 (Zone 2) transmission main be constructed in Lammers Road between Valpico Road and Schulte Road in addition to the 3,025 lf of City-side Pressure Zone 3 (Zone 3) transmission main to be constructed in Lammers Road between the northwest corner of the Ellis Specific Plan development and Valpico Road. The purpose of this recommended Zone 2 pipeline improvement was to maintain the Zone 2 transmission main system after the existing 24-inch diameter Zone 2 transmission main in the above-mentioned section of Lammers Road is re-zoned to Zone 3. The key figures from the May 2017 TM are included for reference as Attachment 1.

This TM summarizes the findings and conclusions of West Yost's technical evaluation of four alternatives to the recommendations from the May 2017 TM:

- Alternative 1: Re-zone the existing 24-inch diameter Zone 2 transmission main in Lammers Road between Valpico Road and Schulte Road without any improvements. This alternative was previously evaluated in the May 2017 TM, but system conditions have changed with additional development. Therefore, this condition was re-evaluated to confirm if improvements are required.
- Alternative 2: Re-zone the existing 24-inch diameter Zone 2 transmission main in Lammers Road between Valpico Road and Schulte Road and construct a new Pressure Regulating Station (PRS) at the intersection of Lammers Road and Schulte Road to support Zone 2.

- Alternative 3: Construct a new Zone 3 transmission main in Lammers Road between Valpico Road and Schulte Road instead of re-zoning the existing transmission main.
- Alternative 4: Re-zone the existing 24-inch diameter Zone 2 transmission main in Lammers Road between Valpico Road and Schulte Road and construct a new Zone 2 transmission main in Lammers Road between Valpico Road and Schulte Road (similar to the recommendation from the May 2017 TM).

West Yost first performed hydraulic modeling[1] and reviewed plans and record drawings of the construction areas to determine which of the four alternatives are both hydraulically feasible and constructible. West Yost then compared the various alternatives and developed design recommendations for the preferred alternative. It should be noted that all evaluations performed for this TM assume that the improvements identified in the evaluation for Design Recommendations for Hood Way Pipeline have been completed.

This TM is submitted in accordance with West Yost's January 2019 Scope of Services. The following sections summarize our findings and conclusions:

- Alternative 1: No New Pipeline
- Alternative 2: New PRS (No New Pipeline)
- Alternative 3: New Zone 3 Pipeline
- Alternative 4: New Zone 2 Pipeline
- Comparison of Alternatives and Conclusions

ALTERNATIVE 1: NO NEW PIPELINE

In Alternative 1, no new infrastructure would be constructed in Lammers Road between Valpico Road and Schulte Road. The existing 24-inch diameter Zone 2 pipeline in Lammers Road south of Schulte Road would be re-zoned to Zone 3 by closing existing valves located at the intersection of Valpico Road and Lammers Road and at the intersection of Schulte Road and Lammers Road. A depiction of Alternative 1 is shown on Figure 1.

While Alternative 1 is much less expensive than constructing the additional pipeline recommended in the May 2017 TM, re-zoning the existing pipeline in Lammers Road without providing a new Zone 2 transmission line would significantly impact the ability of the Zone 2 system west of Corral Hollow Road to convey large quantities of water. Increased headloss in the water distribution

[1] Hydraulic modeling was performed using the City's developer hydraulic model, which includes all of the previously evaluated development projects that have been proposed and is separate from the 2012 Water System Master Plan model. It is assumed that the Cordes Tank and Booster Pump Station are operational and that the 16-inch diameter Zone 2 transmission main connection to Lammers Road is in service. Planning and modeling criteria used to evaluate the various alternatives are based on the system performance and operational criteria developed in the 2012 WSMP and are provided in Attachment 2 for reference.

pipelines due to the lack of a major transmission main would cause a decrease in pressure in this portion of the Zone 2 system. Additional consequences from Alternative 1 include the following:

1. PRS #6 would no longer provide supply to Zone 1 during a normal maximum day demand condition. This is because the Zone 2 pressure upstream of PRS #6 would fall below the pressure sustaining setting of 78 pounds per square inch (psi).
2. Zone 1 would not meet fire flow requirements at Kimball High School during a maximum day demand condition[2], as shown on Figure 2. This is because PRS #6 would no longer be available to support Zone 1 as discussed in Item 1 above.
3. Zone 2 would also not meet fire flow requirements in portions of the IPC during a maximum day demand condition, as shown on Figure 2. Some hydrants in the IPC are located at the highest elevations in Zone 2 and the decrease in Zone 2 pressure and reduced transmission capacity of the Zone 2 system would cause some locations in the IPC to be deficient in meeting fire flow requirements.
4. The existing 24-inch diameter pipeline in Valpico Road would become a dead-end and would experience a decrease in water quality.

Alternative 1 is not recommended because it results in fire flow deficiencies within Zone 1 and Zone 2 and water quality concerns in the existing 24-inch diameter pipeline in Valpico Road.

ALTERNATIVE 2: NEW PRS (NO NEW PIPELINE)

After evaluating Alternative 1, West Yost evaluated whether a new Zone 3 to Zone 2 PRS at the intersection of Lammers Road and Schulte Road would be a viable alternative to a new transmission pipeline (i.e. Alternatives 3 and 4) and alleviate the fire flow deficiencies in Zone 1 and Zone 2 that were observed in the Alternative 1 evaluation.

To resolve the fire flow deficiencies in Zone 1, the proposed Zone 3 to Zone 2 PRS would have to provide enough supply to sustain pressure in Zone 2 sufficiently to allow PRS #6 to open and support Zone 1. However, as stated above, the Zone 2 pressure upstream of PRS #6 would fall below the pressure sustaining setting of 78 psi during a normal maximum day demand condition if the Zone 2 transmission main in Lammers Road were re-zoned without constructing a new Zone 2 transmission main. Therefore, any PRS designed to alleviate the fire flow deficiencies in Zone 1 would have to provide sufficient flow from Zone 3 to Zone 2 continuously under normal operating conditions so that the pressure upstream of PRS #6 would remain above the pressure sustaining setting. However, operating the new Zone 3 to Zone 2 PRS in this manner would require at least 1,000 gallons per minute (gpm) of flow through the new PRS from Zone 3 to Zone 2 under a maximum day demand condition, which would significantly increase the demand on Zone 3 facilities that were not designed to accommodate this additional flow. Therefore, Alternative 2 is not recommended.

[2] Available fire flow simulations for the evaluated alternatives was performed during a maximum day demand condition while maintaining 30 psi residual system pressure.

ALTERNATIVE 3: NEW ZONE 3 PIPELINE

In Alternative 3, 3,240 lf of 24-inch diameter Zone 3 pipeline would be constructed in Lammers Road between Valpico Road and Schulte Road, while the existing 24-inch diameter Zone 2 pipeline in Lammers Road between Valpico Road and Schulte Road would continue to serve Zone 2. An existing valve at the intersection of Schulte Road and Lammers Road would be used to isolate the Zone 2 and Zone 3 transmission lines. The proposed Zone 3 pipeline south of Valpico Road would not connect to the existing pipelines at the intersection of Valpico Road and Lammers Road, but would instead connect to the recommended Zone 3 pipeline. Refer to Figure 3A for a depiction of Alternative 3. A detailed schematic of the connection to existing pipelines which would be required to construct Alternative 3 is shown on Figure 3B.

As part of Alternative 3, West Yost also evaluated the feasibility of constructing 830 lf of new 20-inch diameter Zone 2 pipeline to connect the existing 24-inch diameter Zone 2 pipeline at the intersection of Lammers Road and Schulte Road to the existing 20-inch diameter Zone 2 pipeline at the intersection of Lammers Road and Redbridge Road.

In the existing system, the 24-inch and 20-inch diameter transmission mains in Lammers Road are interrupted by 830 lf of 12-inch diameter pipeline through which large volumes of water must pass to reach PRS #6. Under a maximum day demand condition, the headloss in this 12-inch diameter pipeline exceeds 7 feet per 1,000 feet (ft/kft). While not critical to meeting existing fire flow requirements, the recommended 830 lf of 20-inch diameter pipeline would reduce the velocity and headloss and improve the Zone 2 backbone transmission system.

Refer to Figures 3C and 3D for detailed schematics of the connections to existing pipelines which would be required to construct Alternative 3 with the optional 830 lf of Zone 2 pipeline. It should be noted that surface features at the intersection of Lammers Road and Redbridge Road do not match those shown on the record drawings for that area as depicted on Figure 3D. The configuration of the existing pipelines in this area should be confirmed during design.

Zones 1 and 2 would meet fire flow requirements during a maximum day demand condition under Alternative 3, as shown on Figure 4. For the evaluation results shown on Figure 4, it was assumed that the optional 830 lf of Zone 2 pipeline would not be constructed for more conservative results. In summary, Alternative 3 is both hydraulically feasible and constructible.

ALTERNATIVE 4: NEW ZONE 2 PIPELINE

In Alternative 4, 3,240 lf of 24-inch diameter Zone 2 pipeline would be constructed in Lammers Road between Valpico Road and Schulte Road, while the existing 24-inch diameter Zone 2 pipeline in Lammers Road between Valpico Road and Schulte Road would be re-zoned to Zone 3. The proposed Zone 3 pipeline south of Valpico Road would connect to the existing pipelines at the intersection of Valpico Road and Lammers Road. An existing valve would be used to isolate the Zone 2 and Zone 3 transmission lines. Alternative 4 is similar to the recommendation presented in the May 2017 TM, and is shown on Figure 5A. Detailed schematics of the connections to existing pipelines which would be required to construct Alternative 4 are shown on Figures 5B and 5C.

As part of Alternative 4, West Yost also evaluated the feasibility of constructing 830 lf of new 20-inch diameter Zone 2 pipeline to connect the proposed 24-inch diameter Zone 2 pipeline to be constructed for Alternative 4 to the existing 20-inch diameter Zone 2 pipeline at the intersection of Lammers Road and Redbridge Road.

In the existing system, the 24-inch and 20-inch diameter transmission mains in Lammers Road are interrupted by 830 lf of 12-inch diameter pipeline through which large volumes of water must pass to reach PRS #6. Under a maximum day demand condition, the headloss in this 12-inch diameter pipeline exceeds 7 ft/kft. While not critical to meeting existing fire flow requirements, the recommended 830 lf of 20-inch diameter pipeline would reduce the velocity and headloss and improve the Zone 2 backbone transmission system.

Refer to Figures 5D and 5E for detailed schematics of the connections to existing pipelines which would be required to construct Alternative 4 with the optional 830 lf of Zone 2 pipeline. It should be noted that surface features at the intersection of Lammers Road and Redbridge Road do not match those shown on the record drawings for that area as depicted on Figure 5E. The configuration of the existing pipelines in this area should be confirmed during design.

As shown on Figure 6, Zones 1 and 2 would meet fire flow requirements during a maximum day demand condition under Alternative 4. For the evaluation results shown on Figure 6, it was assumed that the optional 830 lf of Zone 2 pipeline would not be constructed for more conservative results. In summary, Alternative 4 is both hydraulically feasible and constructible.

COMPARISON OF ALTERNATIVES AND CONCLUSIONS

Alternatives 1 and 2 do not meet the City's existing fire flow requirements and are therefore not hydraulically feasible. Therefore, West Yost does not recommend that the City proceed with either of these alternatives.

Alternatives 3 and 4, on the other hand, both meet existing fire flow requirements and are also constructible. Although Alternatives 3 and 4 are similar in many respects, West Yost recommends that the City construct Alternative 4 over Alternative 3 because it would avoid construction near the existing 8-inch diameter natural gas transmission main in the west side of Lammers Road. West Yost also recommends that the proposed 20-inch diameter Zone 2 pipeline between Schulte Road and Redbridge Road be constructed to improve Zone 2 transmission capacity.

It should be noted that the hydraulic analysis performed in this evaluation did not include buildout water system demands. In addition, the proposed alternative operations could potentially impact future developments such as Gateway and Westside Industrial, which are located in Zone 2, as they would no longer be able to connect directly to the existing 24-inch diameter pipeline in Schulte Road. The City's buildout water system hydraulic model is currently being updated by West Yost as part of the City's 2018 Water System Master Plan (WSMP). For the 2018 WSMP, West Yost will confirm whether Alternatives 3 and 4 are hydraulically feasible at buildout of the City's potable water system and also address any potential impacts to future developments. While it is likely that construction of either a new Zone 3 transmission pipeline (as in Alternative 3) or a new Zone 2 transmission pipeline (as in Alternative 4) will continue to be hydraulically feasible

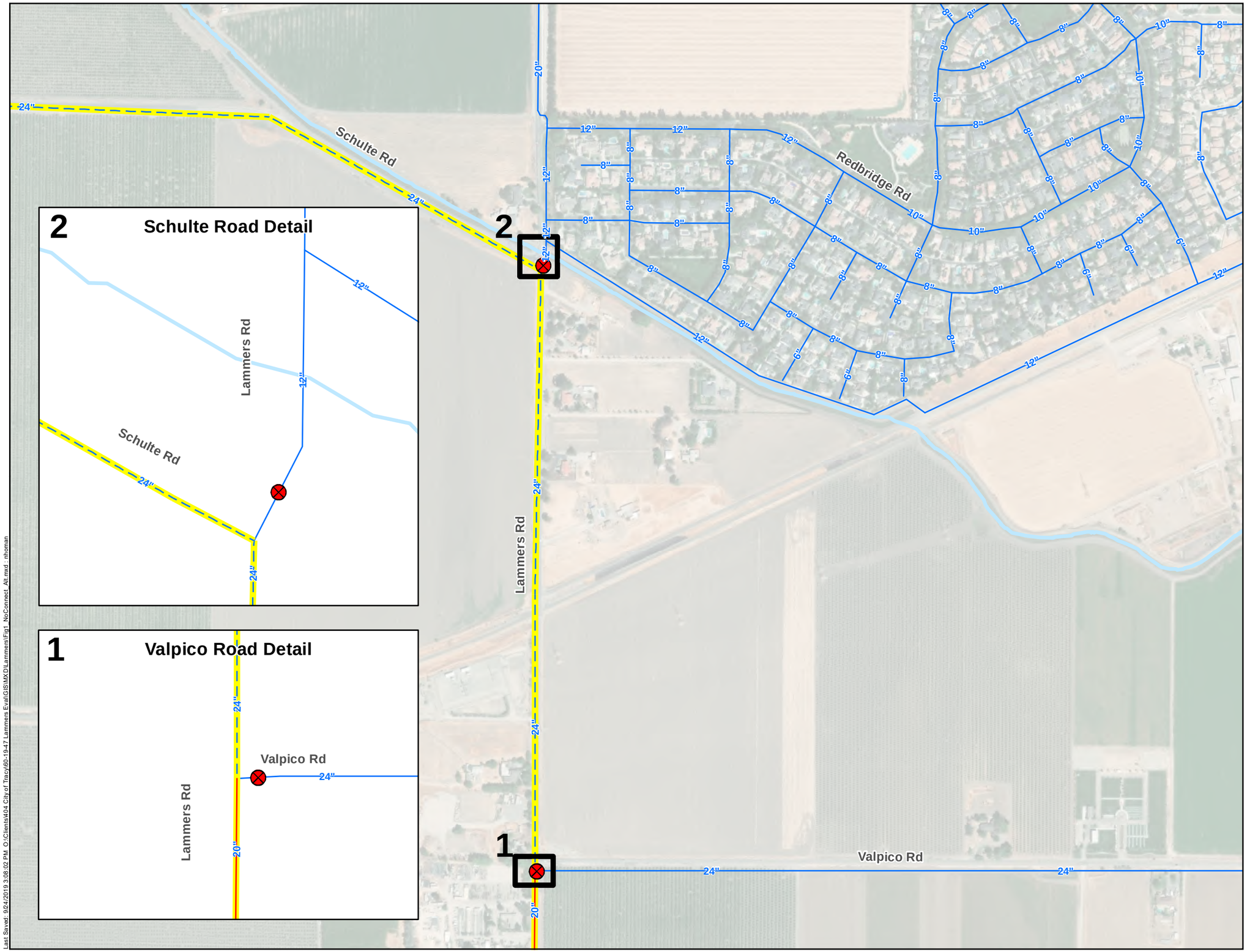
at buildout, the buildout analysis may determine that the new transmission pipeline should be of a larger diameter than is recommended in this evaluation.

In conclusion, West Yost currently recommends that the City construct the following infrastructure improvements in Lammers Road:

- 3,240 lf of new 24-inch diameter Zone 2 pipeline between Valpico Road and Schulte Road; and
- 830 lf of new 20-inch diameter Zone 2 pipeline from Schulte Road to Redbridge Road to improve existing deficiencies in the City's Zone 2 system. As noted above, the configuration of the existing pipelines in this area should be confirmed during design.

These recommendations should be confirmed using the buildout water system model as part of the 2018 WSMP.

No estimates of infrastructure costs were developed as part of this evaluation. The locations of existing pipelines and valves shown on the figures attached here-in should be confirmed prior to design. If existing pipelines or valves are not as shown on the reviewed plans and record drawings, additional evaluation of the feasibility of the recommended connections may be required.



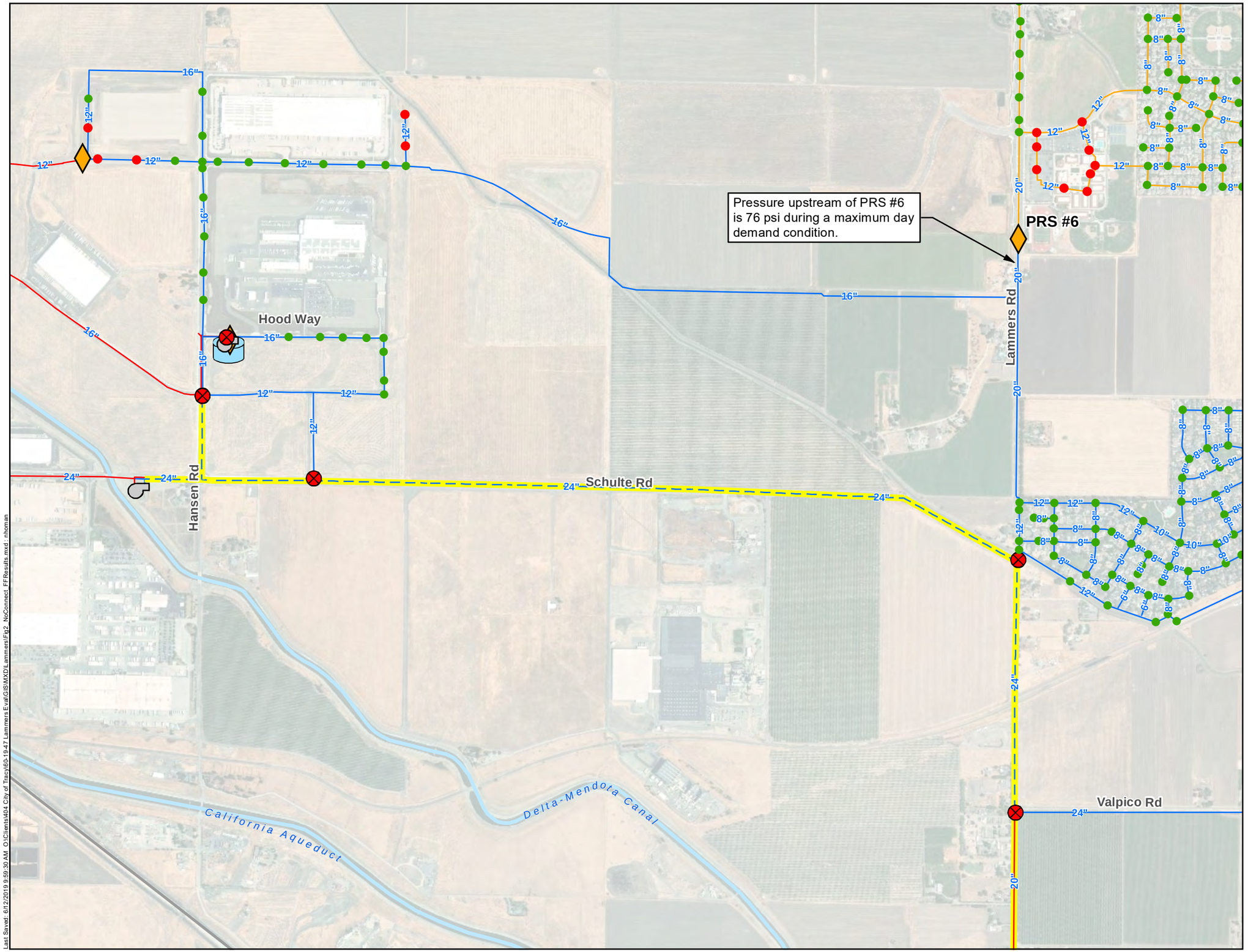
Notes:
1. Details are not to scale.

Figure 1

Alternative 1
No New Pipeline from Valpico Road to Schulte Road

City of Tracy
Design Recommendations for
Lammers Road Pipeline

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N

0 600 1,200

Scale in Feet

Available Fire Flow

- Does Not Meet Requirements
- Meets Requirements
- Closed Valve Due to Re-zoning
- Pressure Regulating Station
- Booster Pump Station
- Cordes Tank
- Proposed Zone 3 Pipeline
- Existing Pipeline to be Re-zoned to Zone 3

Existing Pipeline

- Zone 1
- Zone 2
- Zone 3

Notes:

1. Results assume that connections in Hood Way and Hansen Road are constructed as recommended in the Design Recommendations for Hood Way Pipeline annotated figures.
2. The available fire flow shown is the maximum flow available while maintaining 30 psi residual system pressure. Fire flow evaluation performed under maximum day demand conditions.

TRACY

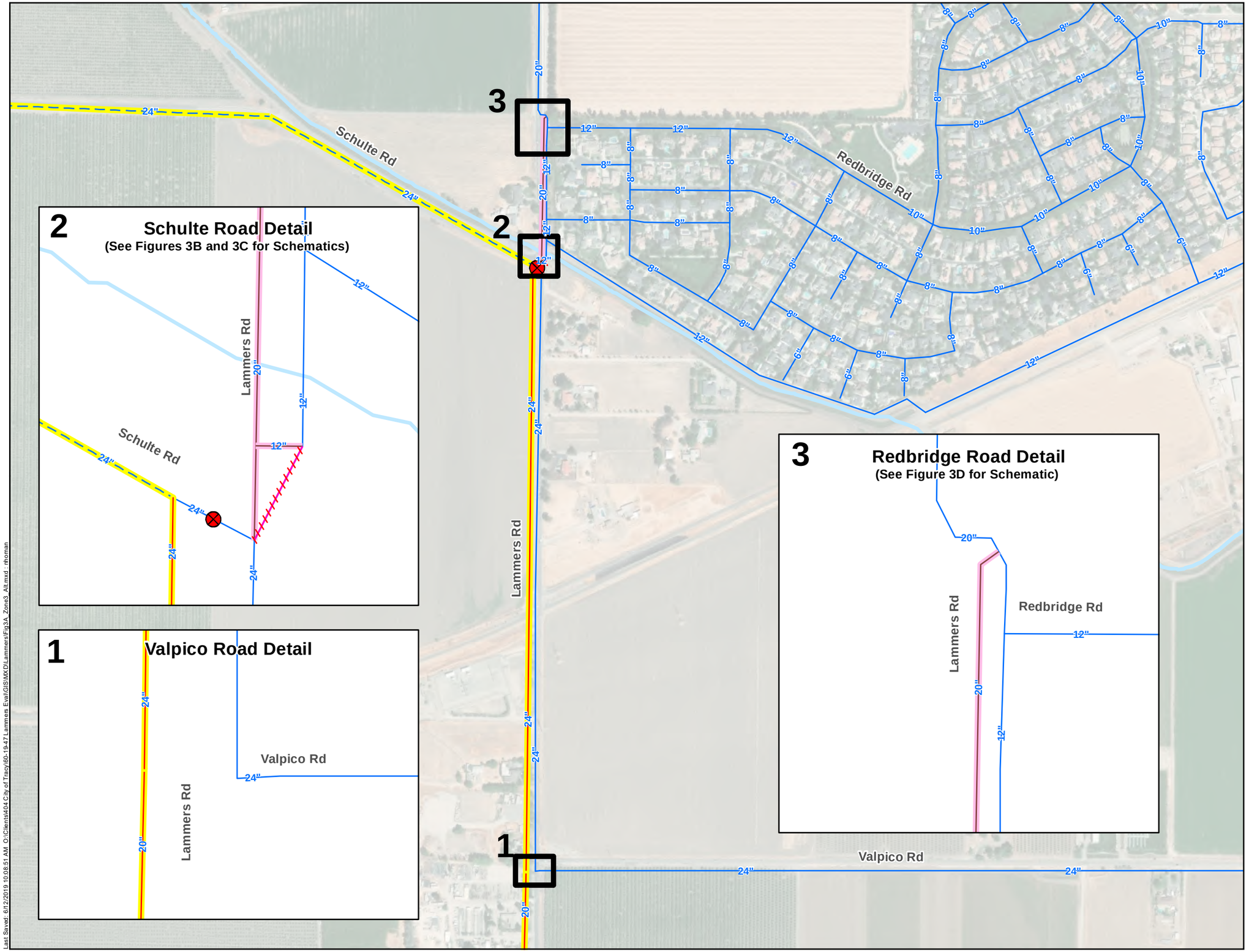
WEST YOST ASSOCIATES

Figure 2

Alternative 1
Available Fire Flow

City of Tracy
Design Recommendations for
Lammers Road Pipeline

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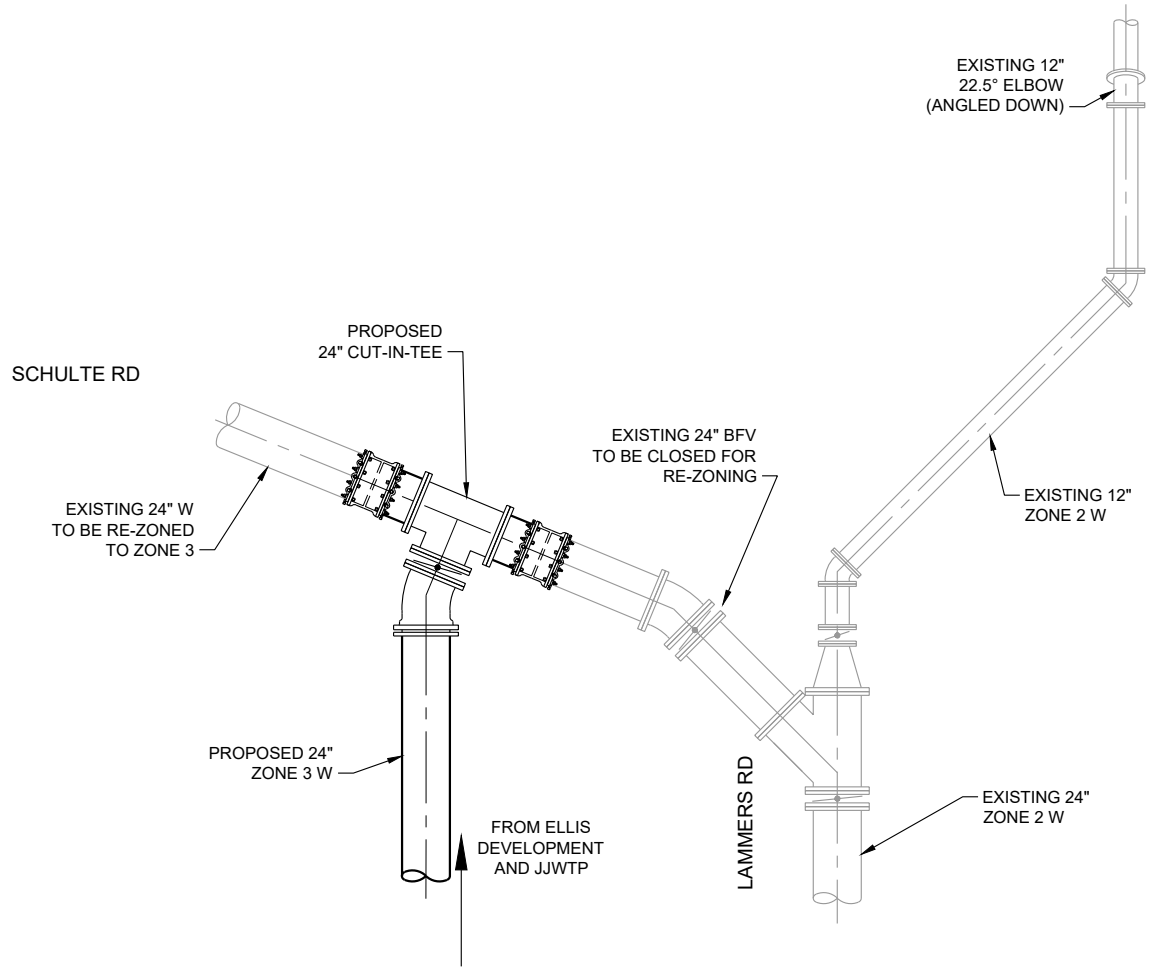
Notes:
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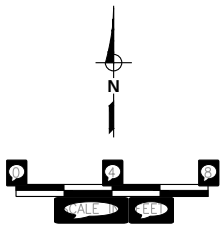
Figure 3A

Alternative 3
New Zone 3 Pipeline from Valpico Road to Schulte Road

City of Tracy
Design Recommendations for
Lammers Road Pipeline



Notes:
1. Schematic connection points are for illustrative purposes only for the conceptual understanding of the likely components involved in installing the recommended connections. These schematics are not to be used for construction purposes.



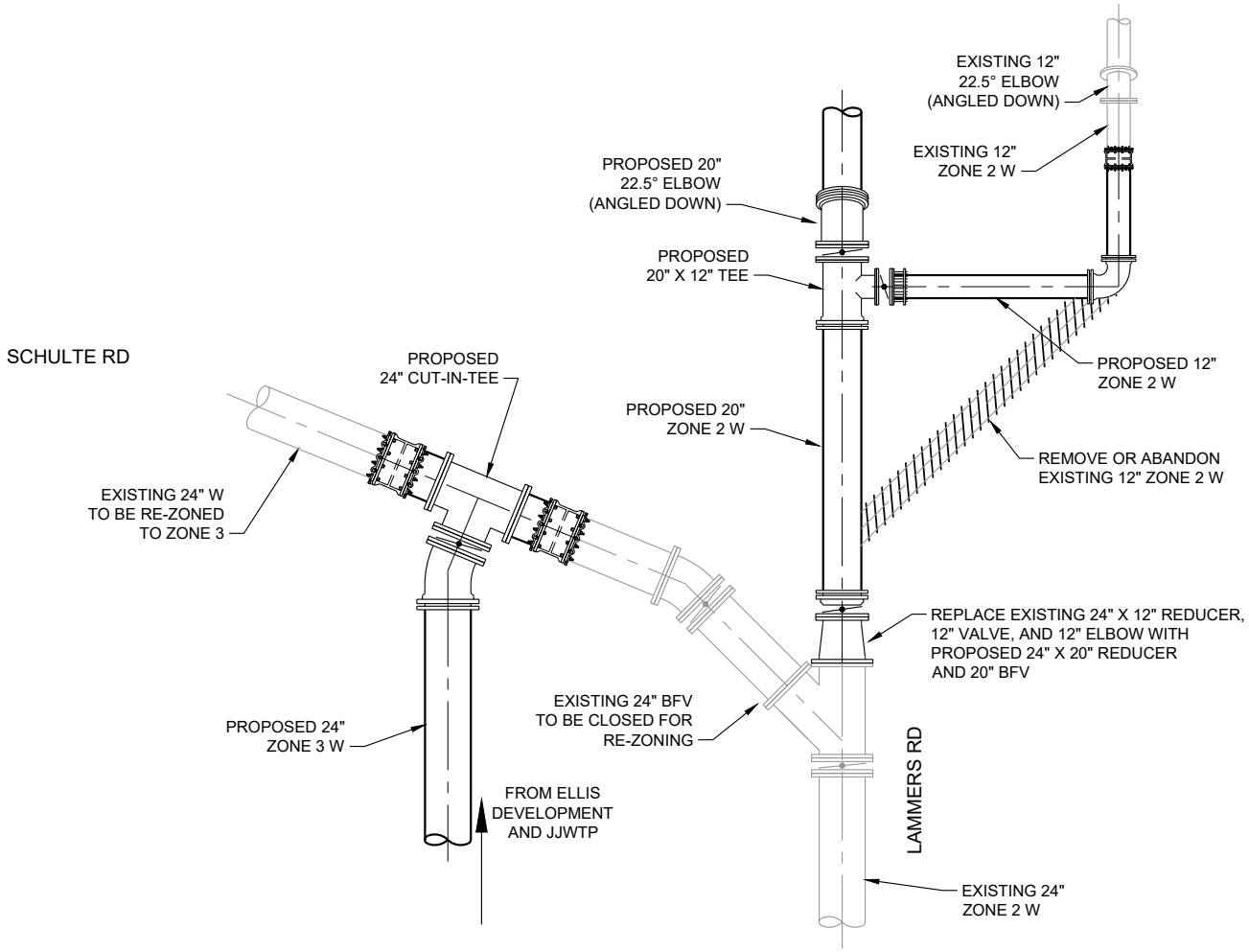
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WEST YOST ASSOCIATES

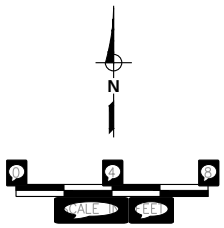
Figure 3B

Alternative 3
Schematic of Schulte Road and Lammers Road Connection

City of Tracy
Design Recommendations for
Lammers Road Pipeline



Notes:
1. Schematic connection points are for illustrative purposes only for the conceptual understanding of the likely components involved in installing the recommended connections. These schematics are not to be used for construction purposes.



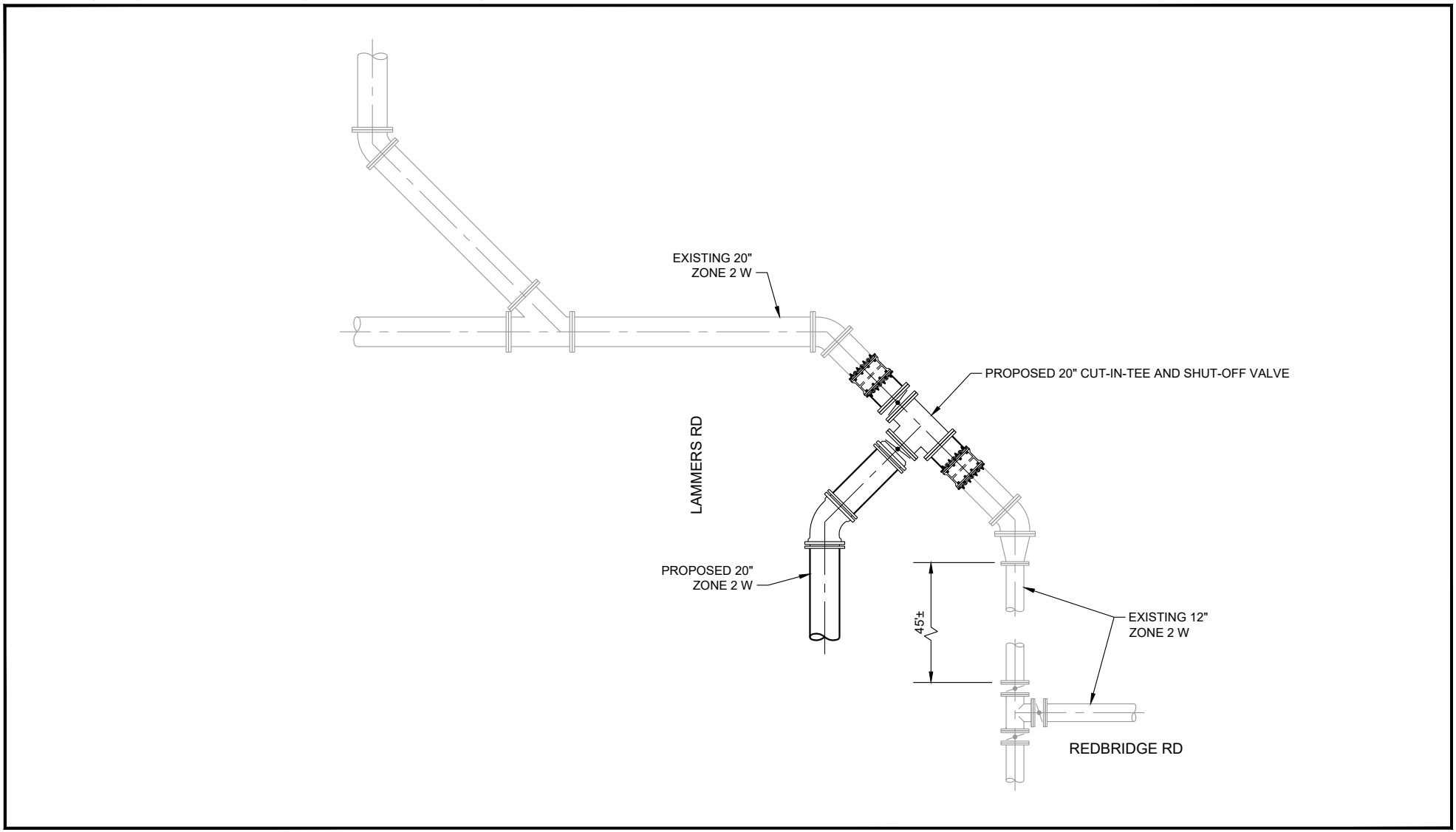
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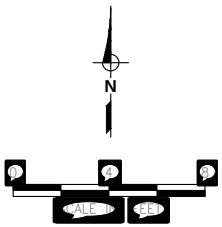
Figure 3C

Alternative 3
Schematic of Schulte Road and Lammers Road Connection with Optional Zone 2 Pipeline

City of Tracy
Design Recommendations for
Lammers Road Pipeline



Notes:
1. Schematic connection points are for illustrative purposes only for the conceptual understanding of the likely components involved in installing the recommended connections. These schematics are not to be used for construction purposes.
2. Existing pipelines presented in this schematic are based on available record drawings. Visible surface features near the intersection of Lammers Road and Redbridge Road do not match those shown on the record drawings. Configuration of existing pipelines in this area should be confirmed.



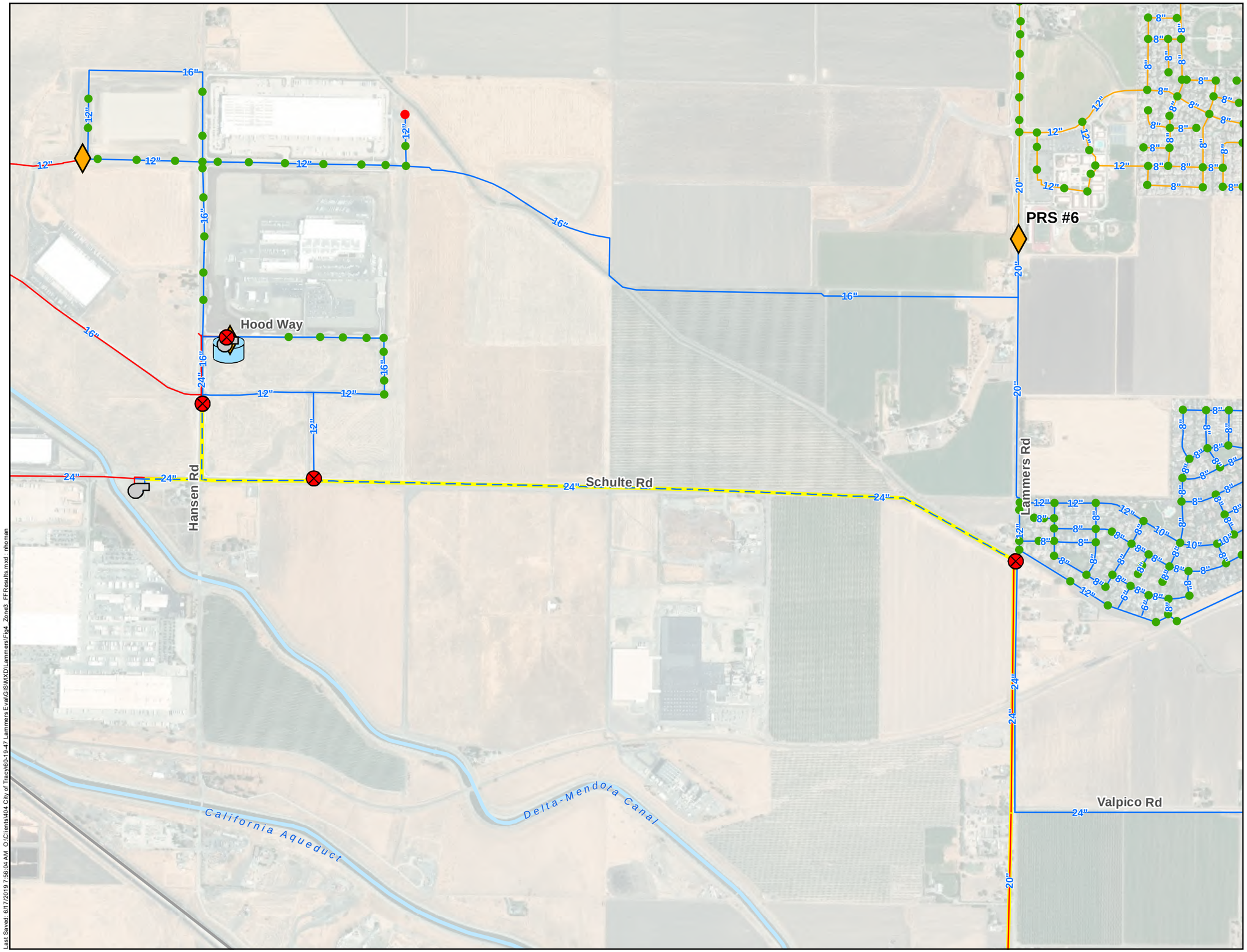
TRACY

WEST YOST ASSOCIATES

Figure 3D

Alternative 3
Schematic of Redbridge Road and Lammers Road Connection with Optional Zone 2 Pipeline

City of Tracy
Design Recommendations for
Lammers Road Pipeline



N

0 600 1,200

Scale in Feet

Available Fire Flow

- Does Not Meet Requirements
- Meets Requirements
- Closed Valve Due to Re-zoning
- Pressure Regulating Station
- Booster Pump Station
- Cordes Tank
- Proposed Zone 3 Pipeline
- Existing Pipeline to be Re-zoned to Zone 3

Existing Pipeline

- Zone 1
- Zone 2
- Zone 3

Notes:

1. Results assume that connections in Hood Way and Hansen Road are constructed as recommended in the Design Recommendations for Hood Way Pipeline annotated figures.
2. Results assume that optional Zone 2 pipeline will not be constructed (see Figure 5A).
3. The available fire flow shown is the maximum flow available while maintaining 30 psi residual system pressure. Fire flow evaluation performed under maximum day demand conditions.

TRACY

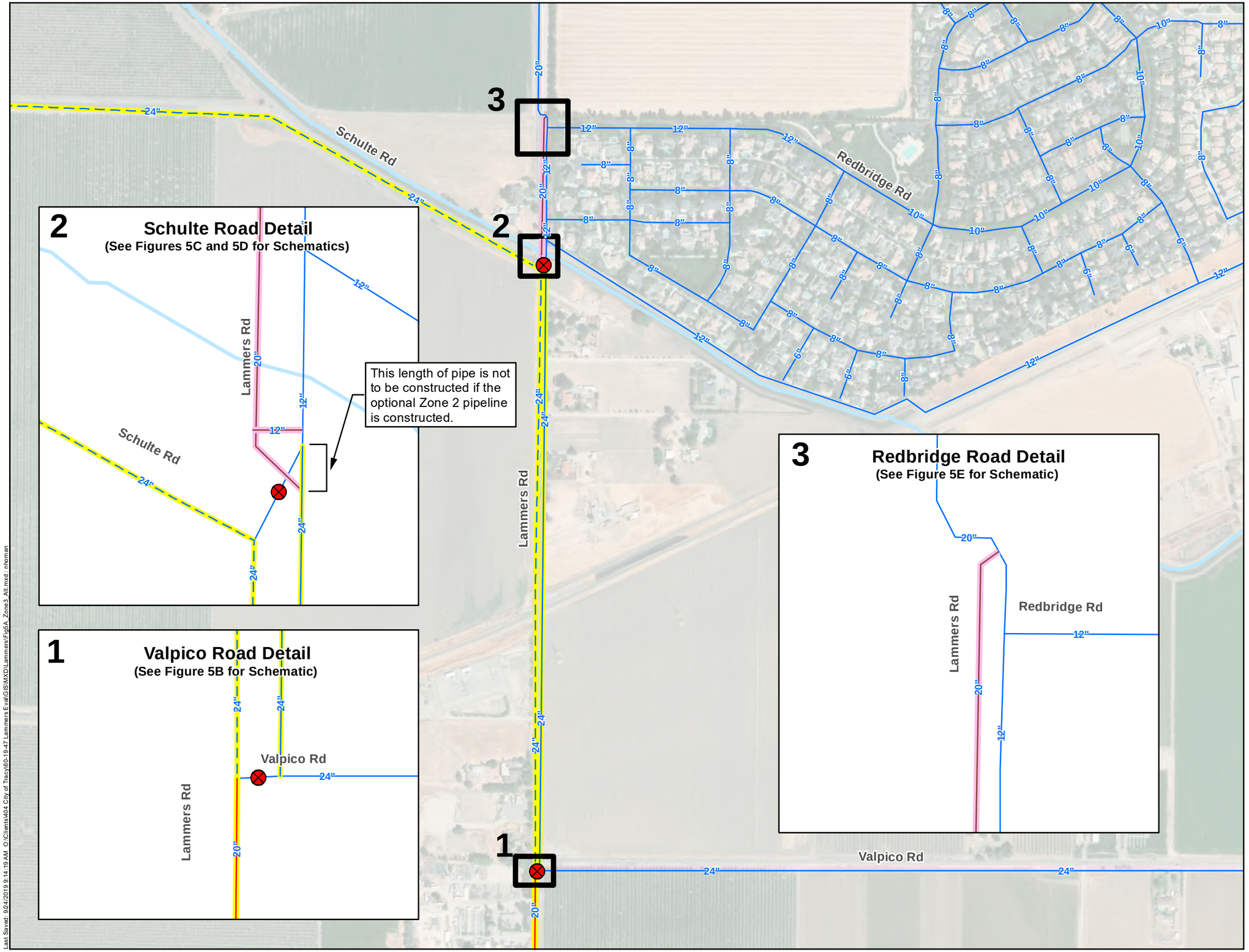
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Figure 4

Alternative 3
Available Fire Flow

City of Tracy
Design Recommendations for
Lammers Road Pipeline

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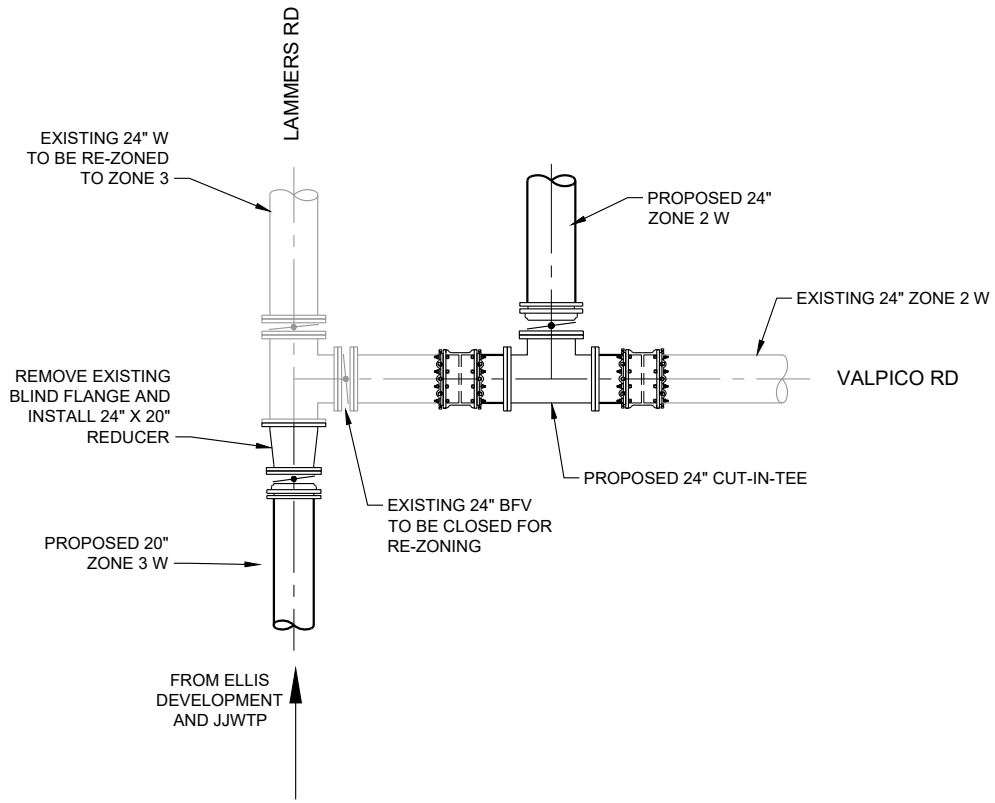
Notes:
1. Details are not to scale.

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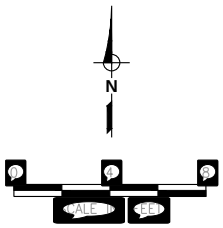
Figure 5A

Alternative 4
New Zone 2 Pipeline from Valpico Road to Schulte Road

City of Tracy
Design Recommendations for
Lammers Road Pipeline



Notes:
1. Schematic connection points are for illustrative purposes only for the conceptual understanding of the likely components involved in installing the recommended connections. These schematics are not to be used for construction purposes.



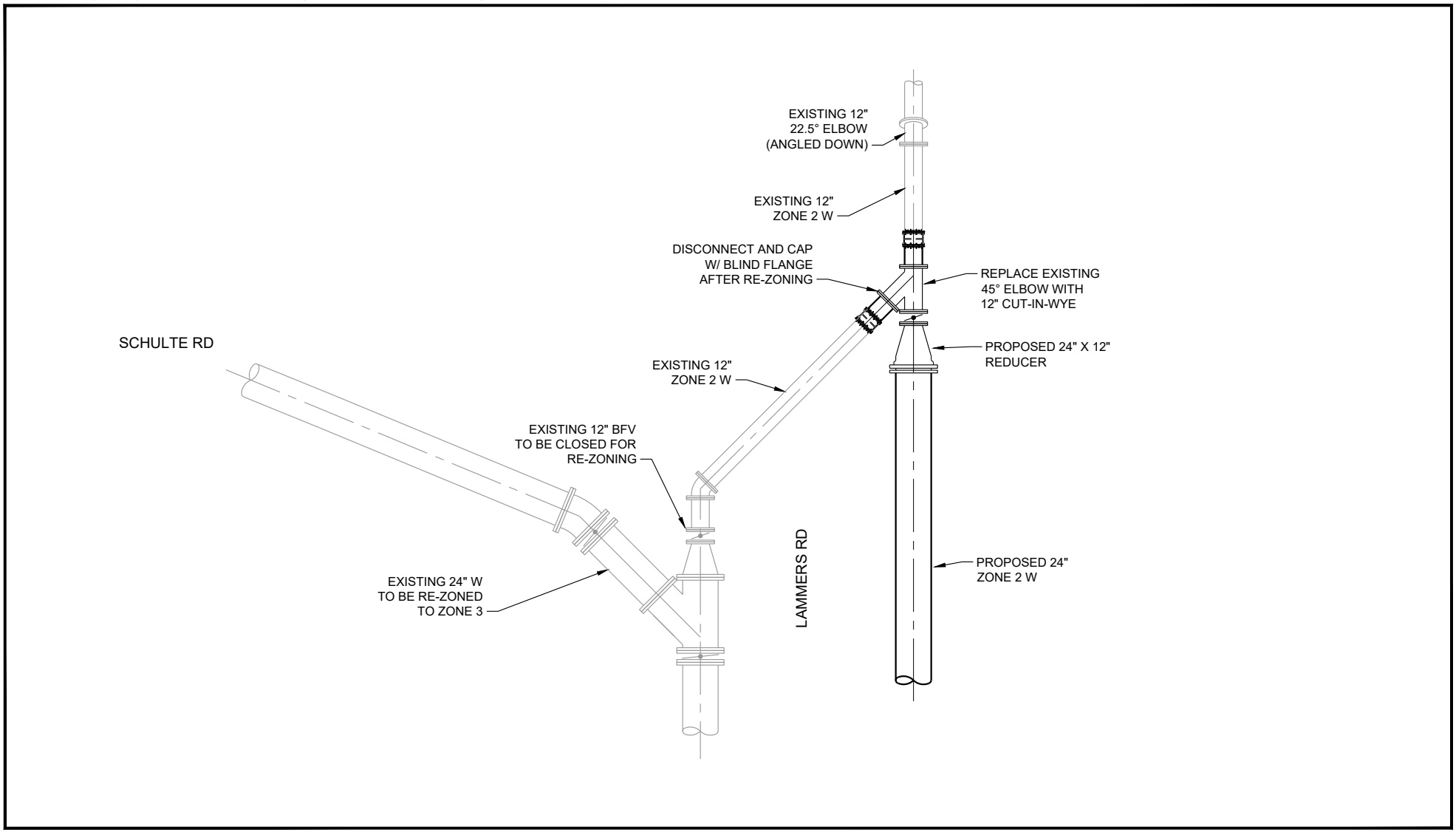
TRACY

WEST YOST ASSOCIATES

Figure 5B

Alternative 4
Schematic of Valpico Road and Lammers Road Connection

City of Tracy
Design Recommendations for
Lammers Road Pipeline



Notes:
1. Schematic connection points are for illustrative purposes only for the conceptual understanding of the likely components involved in installing the recommended connections. These schematics are not to be used for construction purposes.

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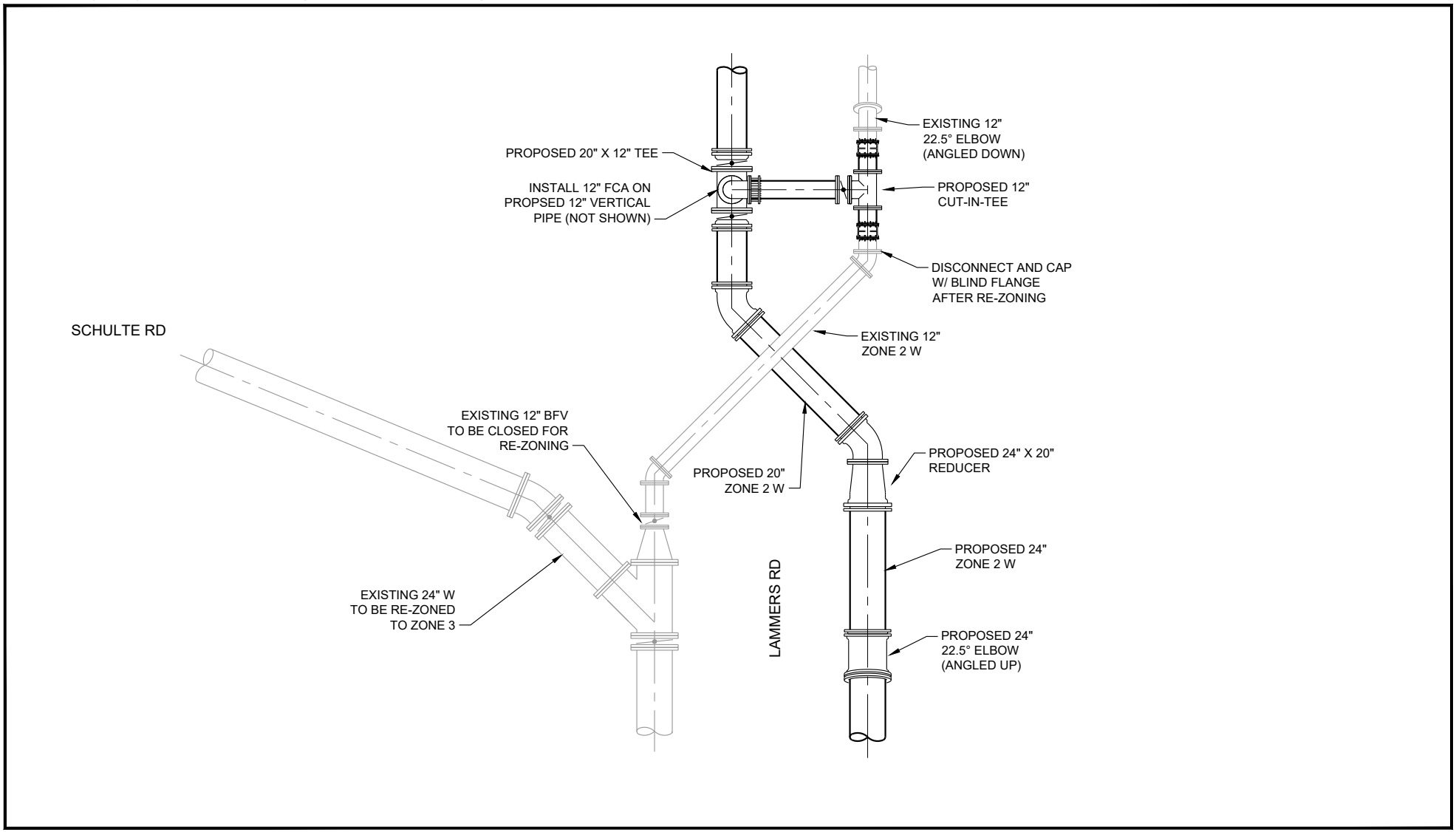
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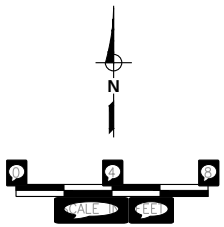
Figure 5C

Alternative 4
Schematic of Schulte Road and Lammers Road Connection

City of Tracy
Design Recommendations for
Lammers Road Pipeline



Notes:
1. Schematic connection points are for illustrative purposes only for the conceptual understanding of the likely components involved in installing the recommended connections. These schematics are not to be used for construction purposes.



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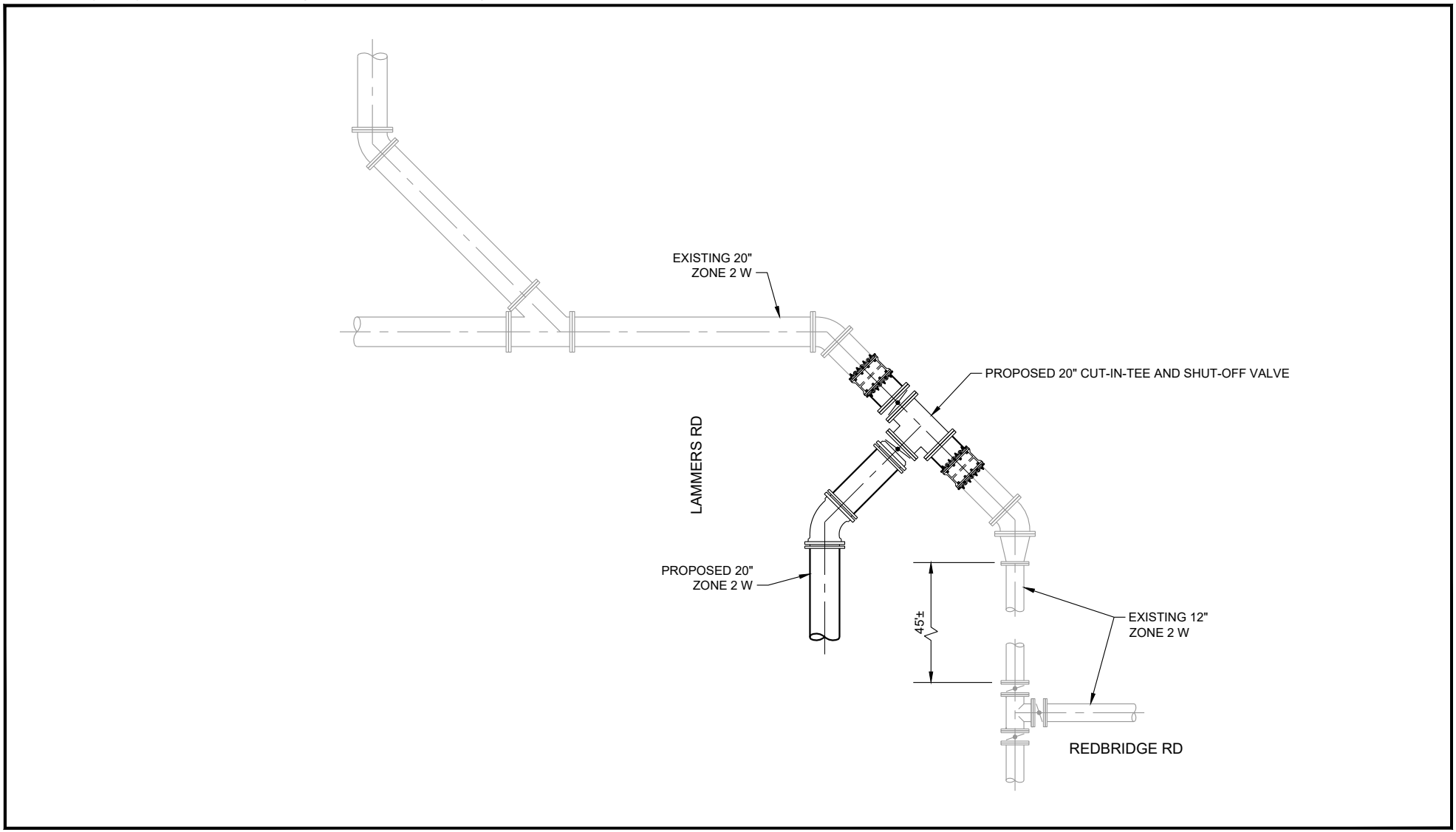
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Figure 5D

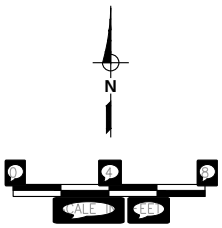
Alternative 4 Schematic of Schulte Road and Lammers Road Connection with Optional Zone 2 Pipeline

City of Tracy
Design Recommendations for
Lammers Road Pipeline

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Notes:
1. Schematic connection points are for illustrative purposes only for the conceptual understanding of the likely components involved in installing the recommended connections. These schematics are not to be used for construction purposes.
2. Existing pipelines presented in this schematic are based on available record drawings. Visible surface features near the intersection of Lammers Road and Redbridge Road do not match those shown on the record drawings. Configuration of existing pipelines in this area should be confirmed.



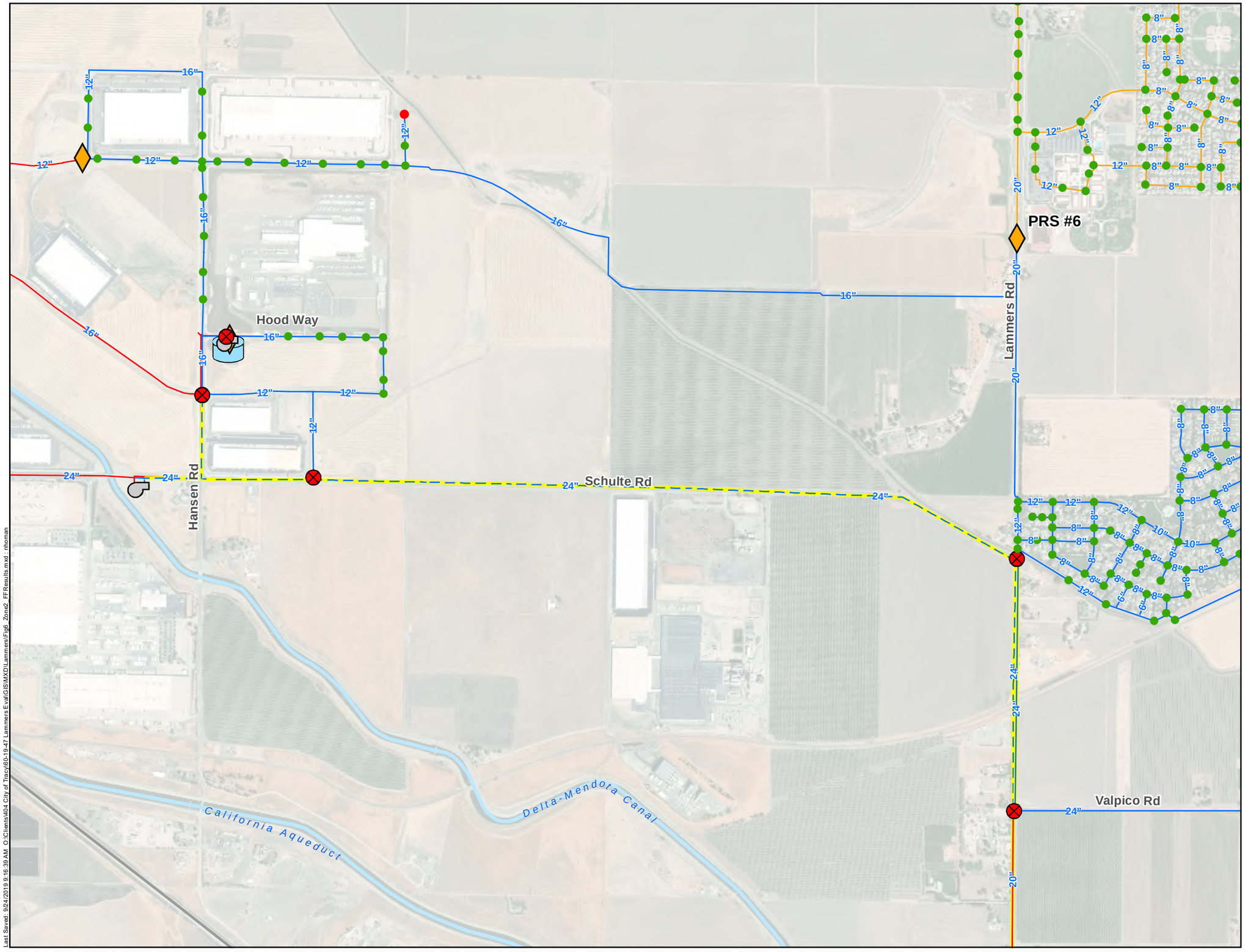
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WEST YOST ASSOCIATES

Figure 5E

Alternative 4
Schematic of Redbridge Road and Lammers Road Connection with Optional Zone 2 Pipeline

City of Tracy
Design Recommendations for
Lammers Road Pipeline



N

0 600 1,200

Scale in Feet

Available Fire Flow

- Does Not Meet Requirements
- Meets Requirements
- Closed Valve Due to Re-zoning
- Pressure Regulating Station
- Booster Pump Station
- Cordes Tank
- Proposed Zone 3 Pipeline
- Proposed Zone 2 Pipeline
- Existing Pipeline to be Re-zoned to Zone 3

Existing Pipeline

- Zone 1
- Zone 2
- Zone 3

Notes:

1. Results assume that connections in Hood Way and Hansen Road are constructed as recommended in the Design Recommendations for Hood Way Pipeline annotated figures.
2. Results assume that optional Zone 2 pipeline will not be constructed (see Figure 5A).
3. The available fire flow shown is the maximum flow available while maintaining 30 psi residual system pressure. Fire flow evaluation performed under maximum day demand conditions.

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Figure 6

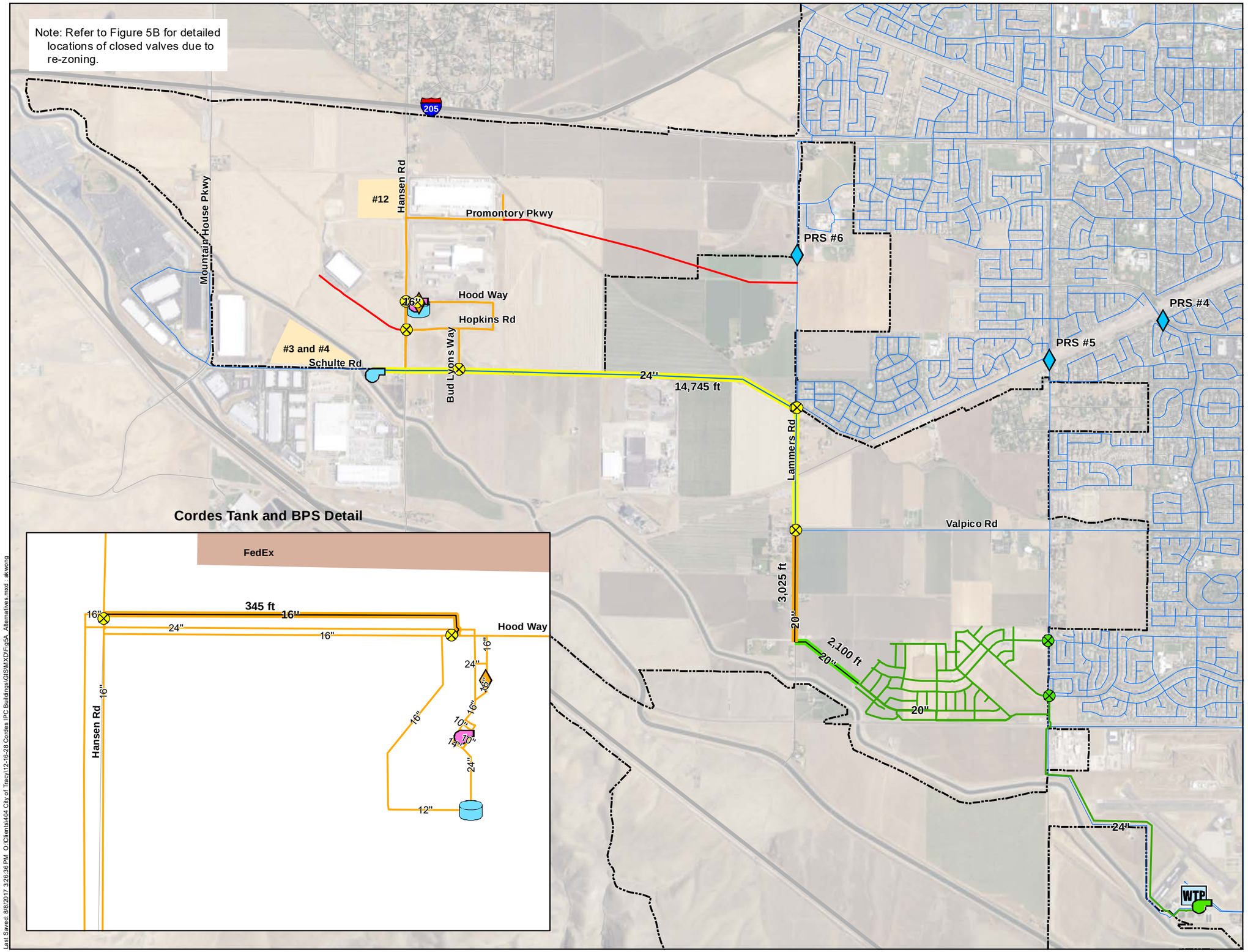
Alternative 4
Available Fire Flow

City of Tracy
Design Recommendations for
Lammers Road Pipeline

ATTACHMENT 1

Key Figures from Hydraulic Evaluation of
IPC Buildings 3, 4, and 12 TM, May 18, 2017

Note: Refer to Figure 5B for detailed locations of closed valves due to re-zoning.



Cordes Tank and BPS Detail

Symbology

- Closed Valve Due to Re-zoning
- Previously Proposed Check Valve
- Pressure Regulating Station #9
- Existing Pressure Regulating Station
- Cordes Booster Pump Station
- Existing Patterson Pass Booster Pump Station
- Previously Proposed Interim Booster Pump and Pressure Regulating Station
- Cordes Tank
- WTP — John Jones Water Treatment Plant
- Pipeline Required for Alternative Operations (Ellis)
- Proposed Pipeline Required for Alternative Operations (IPC)
- Existing Pipeline to be Re-zoned
- Existing Pipeline
- Ellis Pipeline
- Cordes Phases 1 and 2 Pipeline
- Smuckers Pipeline
- Proposed Project
- City Limit

TRACY

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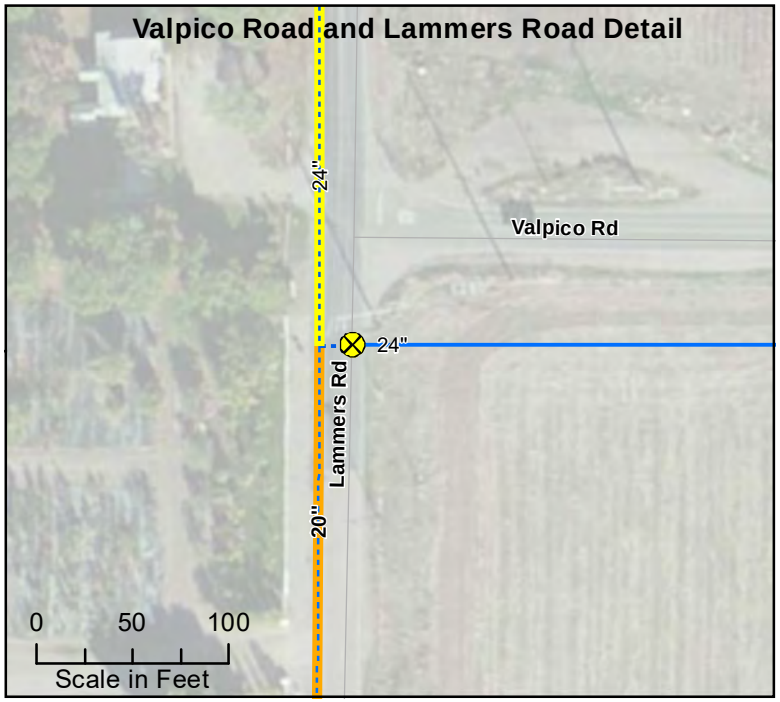
Figure 5A

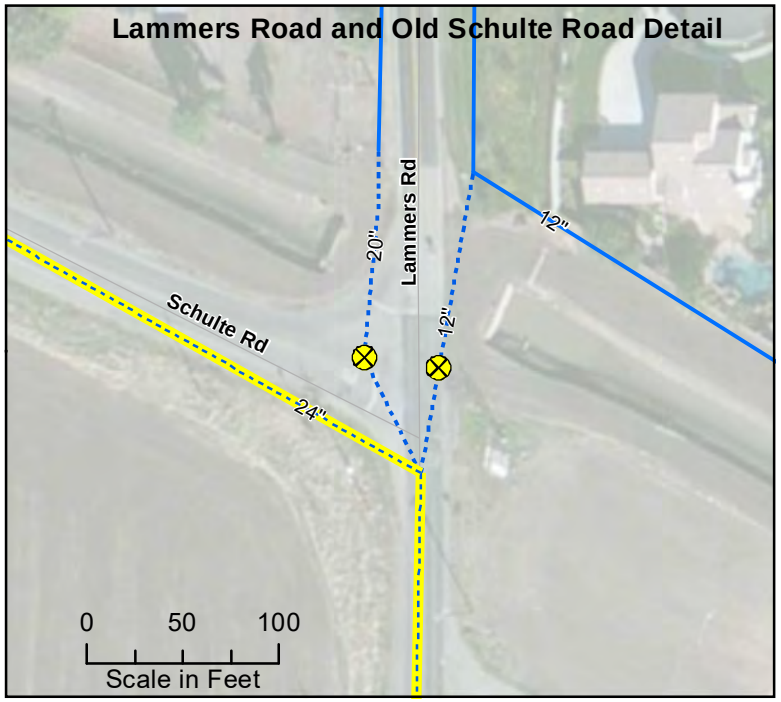
Proposed Alternative Operations

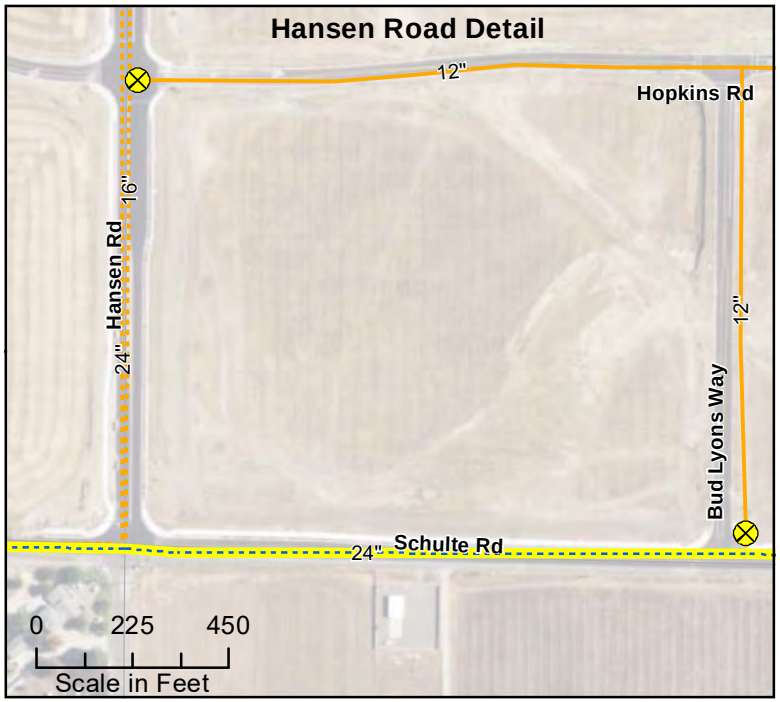
City of Tracy
Hydraulic Evaluation of
IPC Buildings 3, 4, and 12

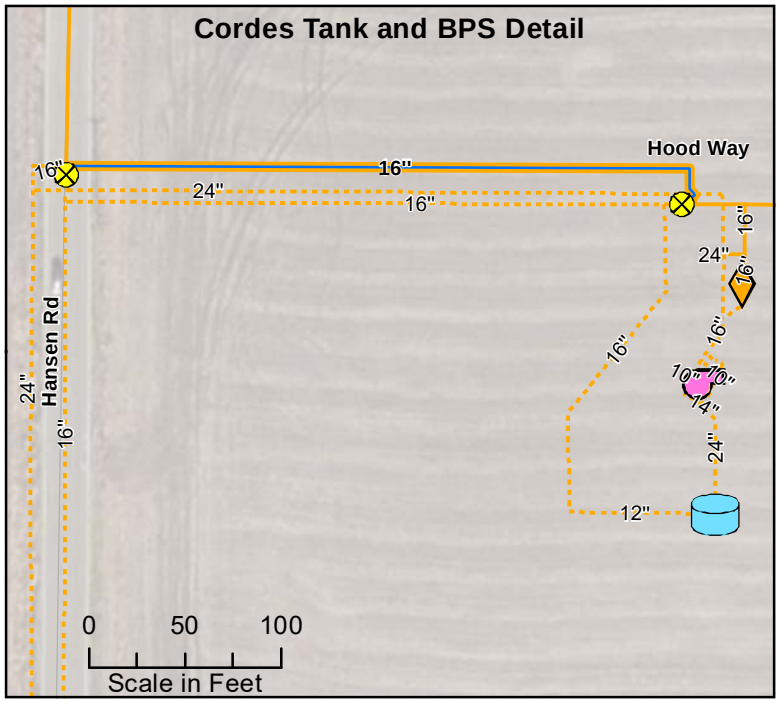
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N

Symbology

- Closed Valve Due to Re-zoning
- Pressure Regulating Station #9
- Cordes Booster Pump Station
- Existing Patterson Pass Booster Pump Station
- Cordes Tank
- Existing Pipeline to be Re-zoned
- Proposed Zone 3 Pipeline Required for Alternative Operations (IPC)
- Proposed Zone 2 Pipeline Required for Alternative Operations (IPC)

Existing Pipeline

- Zone 2
- Zone 3

Cordes Phases 1 and 2 Pipeline

- Zone 2
- Zone 3

TRACY

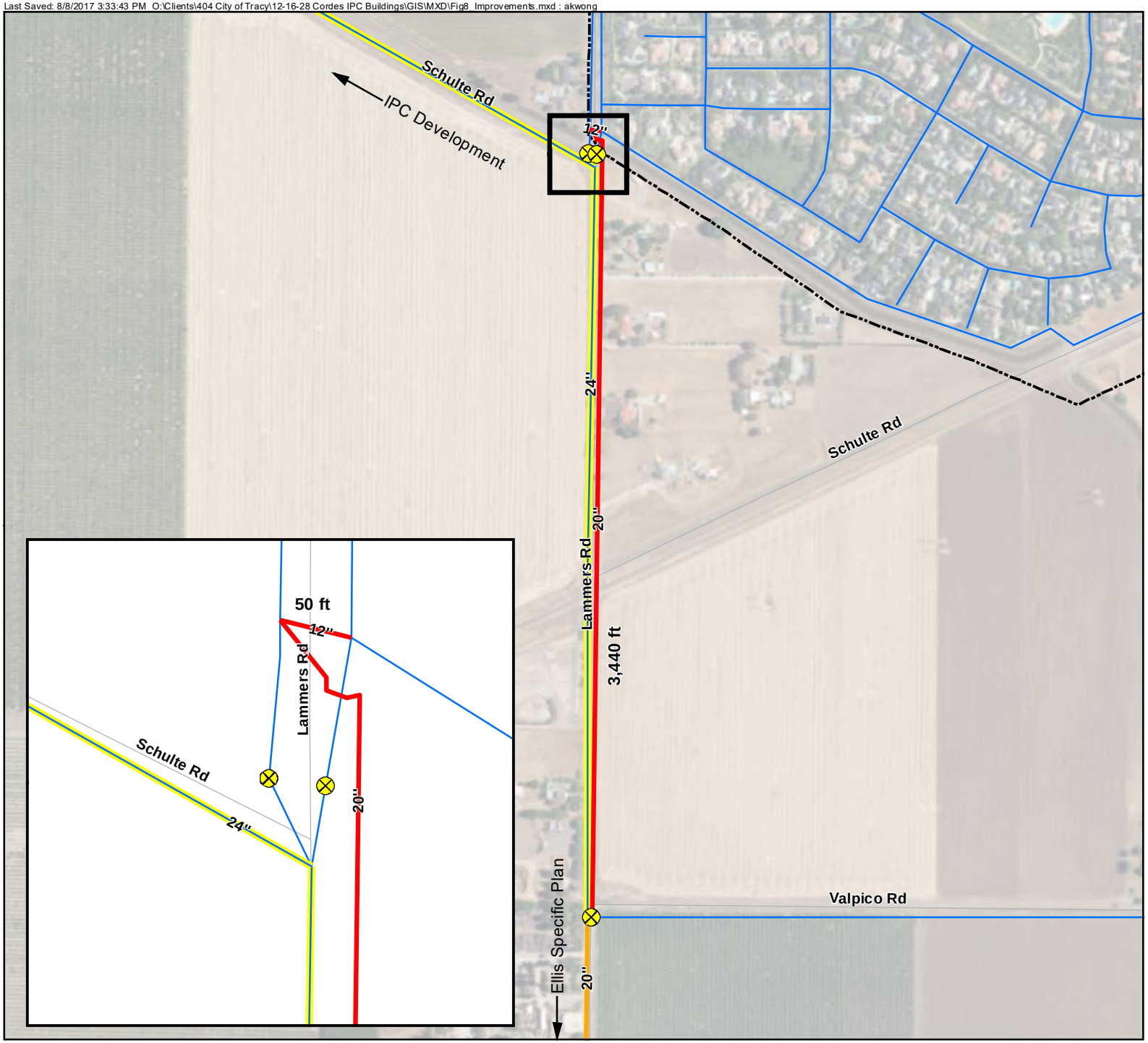
WEST YOST ASSOCIATES

Figure 5B

Proposed Alternative Operations: Details for Closed Valves

City of Tracy
Hydraulic Evaluation of
IPC Buildings 3, 4, and 12

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0 300 600

Scale in Feet

Symbology

- Closed Valve Due to Re-zoning
- Recommended Pipeline
- Existing Pipeline to be Re-zoned
- Proposed Pipeline Required for Alternative Operatons (IPC)
- Existing Pipeline
- City Limit

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Figure 8

Recommended Improvements for Proposed Alternative Operations

City of Tracy
Hydraulic Evaluation of
IPC Buildings 3, 4, and 12

ATTACHMENT 2

Planning and Modeling Criteria
(2012 Citywide Water System Master Plan)

Planning and modeling criteria used to evaluate the various alternatives are based on the system performance and operational criteria developed in the 2012 Citywide Water System Master Plan. The criteria used to evaluate the existing water system and the proposed pipelines for the various alternatives are listed as follows:

- Residual pressure at the flowing hydrant (during an assumed maximum day demand plus fire flow condition) and throughout the water system must be equal to or greater than 30 pounds per square inch (psi) during the simulated fire condition.
- Minimum allowable service pressure is 40 psi during all other non-fire demand conditions.
- Maximum allowable service pressure is 80 psi. A pressure reducing valve (PRV) will be required on all water services with a static pressure greater than 80 psi and should conform with the requirements from the Uniform Plumbing Code.
- Maximum allowable distribution pipeline velocity is 12 feet per second (fps) during the simulated fire flow demand condition.
- Maximum allowable transmission and distribution pipeline velocity is 6 fps and 8 fps, respectively, during a non-fire demand condition.
- Maximum allowable head loss rate is 10 feet per 1,000 feet (ft/kft) during the simulated fire demand condition.
- Maximum head losses in distribution system pipelines should be limited to 7 ft/kft during a non-fire demand condition.
- New and required pipelines will be modeled with a roughness coefficient (C-factor) of 130.
- Available fire flow demand must meet a minimum flow of 1,500 gallons per minute (gpm), 2,500 gpm, 3,500 gpm, or 4,500 gpm depending on land use during a maximum day demand condition. These required fire flow demands assume that buildings are sprinklered.
- The 2012 Master Plan hydraulic model of the City's water distribution system was used as the basis for evaluation.[1] However, the hydraulic model was updated to include the following major existing system improvements:
  - Improvements that have been recently constructed on South Lammers Road (20-inch diameter pipeline and pressure regulating station (PRS #6)); and
  - Proposed improvements on South MacArthur Drive (24-inch diameter pipeline).

[1] This hydraulic model was updated to include projected water demands from new developments such as Valpico and MacDonald Apartments, Sierra Hills (Aspire I) Apartments, Tiburon Village, Middlefield Drive Apartments and Self-Storage Facility, I-205 Parcels M1 and M2 and Infill Parcels 7 and 13, Grant Line Road Apartments, South Lammers Road Development, Aspire II Development, Pescadero IPT Development, first three buildings at Cordes Ranch, Ellis Specific Plan Phase 1A and Phase 1A Extension, Marriott TownePlace Suites, Larch Clover Interim Annexation, Ellis Specific Plan Phase 2 - The Gardens, IPC Buildings 3, 4, and 12, IPC Building 25, IPC Buildings 22, 23, and Thermo Fisher, Tracy Village Specific Plan, Avenues Specific Plan, IPC Buildings 9, 10, and 14, NEI Specific Plan, and Tracy Hills Phases 1A, 1B, and 1C. City staff also requested West Yost to incorporate the following developments, which were evaluated by Black Water Consulting Engineers, Inc. into the City's hydraulic model: Barcelona Infill, Berg Road Properties, Harvest Apartments, 321 E. Grant Line Apartments, Project Hawk/IPC, and Home 2 Suites.

WEST YOST ASSOCIATES

TECHNICAL MEMORANDUM

DATE: November 11, 2019

Project No.: 404-60-19-47
SENT VIA: EMAIL

TO: Zabih Zaca, City of Tracy

CC: Robert Armijo, City of Tracy
Paul Verma, City of Tracy
Al Gali, City of Tracy
Nanda Gottiparthy, SNG & Associates, Inc.



FROM: Nathaniel Homan, PE, RCE #89903
Jim Connell, PE, RCE #63052

REVIEWED BY: Amy Kwong, PE, RCE #73213

SUBJECT: Design Recommendations for Hood Way Pipeline

In a technical memorandum (TM) prepared for the City of Tracy (City) titled *Hydraulic Evaluation of International Park of Commerce (IPC) Buildings 3, 4, and 12*, dated May 18, 2017, West Yost Associates (West Yost) recommended that 345 lineal feet (lf) of 16-inch diameter City-side Pressure Zone 2 (Zone 2) transmission main be constructed in Hood Way. The purpose of this recommended pipeline improvement was to provide pipeline network looping for Zone 2 pipelines located in Hood Way and Hansen Road after portions of the existing Zone 2 transmission main system are re-zoned to City-side Pressure Zone 3 (Zone 3).

This TM summarizes the findings and conclusions of West Yost's technical evaluation of the feasibility of constructing two shorter 16-inch diameter connections in Hood Way and Hansen Road, in place of the previously recommended pipeline. The locations of the proposed connections are shown on Figure 1.

The proposed connection in Hood Way would consist of approximately 36 lf of 16-inch diameter pipeline connecting the existing 16-inch diameter Zone 2 Cordes Tank fill line with the existing 24-inch diameter Zone 3 Cordes Pump Station discharge line. A detailed schematic of this connection is shown on Figure 2. An existing 16-inch butterfly valve would be permanently closed to re-zone the Cordes Tank fill line to Zone 3.

The proposed connection in Hansen Road would consist of approximately 20 lf of 16-inch diameter pipeline connecting the existing 16-inch diameter Zone 2 pipeline and the existing 24-inch diameter Zone 3 pipeline in Hansen Road. A detailed schematic of this connection is shown on Figure 3. This connection would be placed approximately 135 ft south of the intersection of Hopkins Road and Hansen Road to take advantage of the existing butterfly valve on the 24-inch diameter pipeline. This existing butterfly valve would be used to isolate the 24-inch diameter

pipeline between Schulte Road and Hopkins Road so that the pipeline in Hopkins Road west of Hansen Road could continue to serve Zone 3 during construction. The existing butterfly valve would be re-opened after construction is completed. The proposed new butterfly valve, to be installed north of the proposed cut-in-tee on the 16-inch diameter pipeline, would be permanently closed to re-zone the 16-inch diameter pipeline south of the proposed connection to Zone 3.

These proposed connections have two advantages over the previously recommended pipeline:

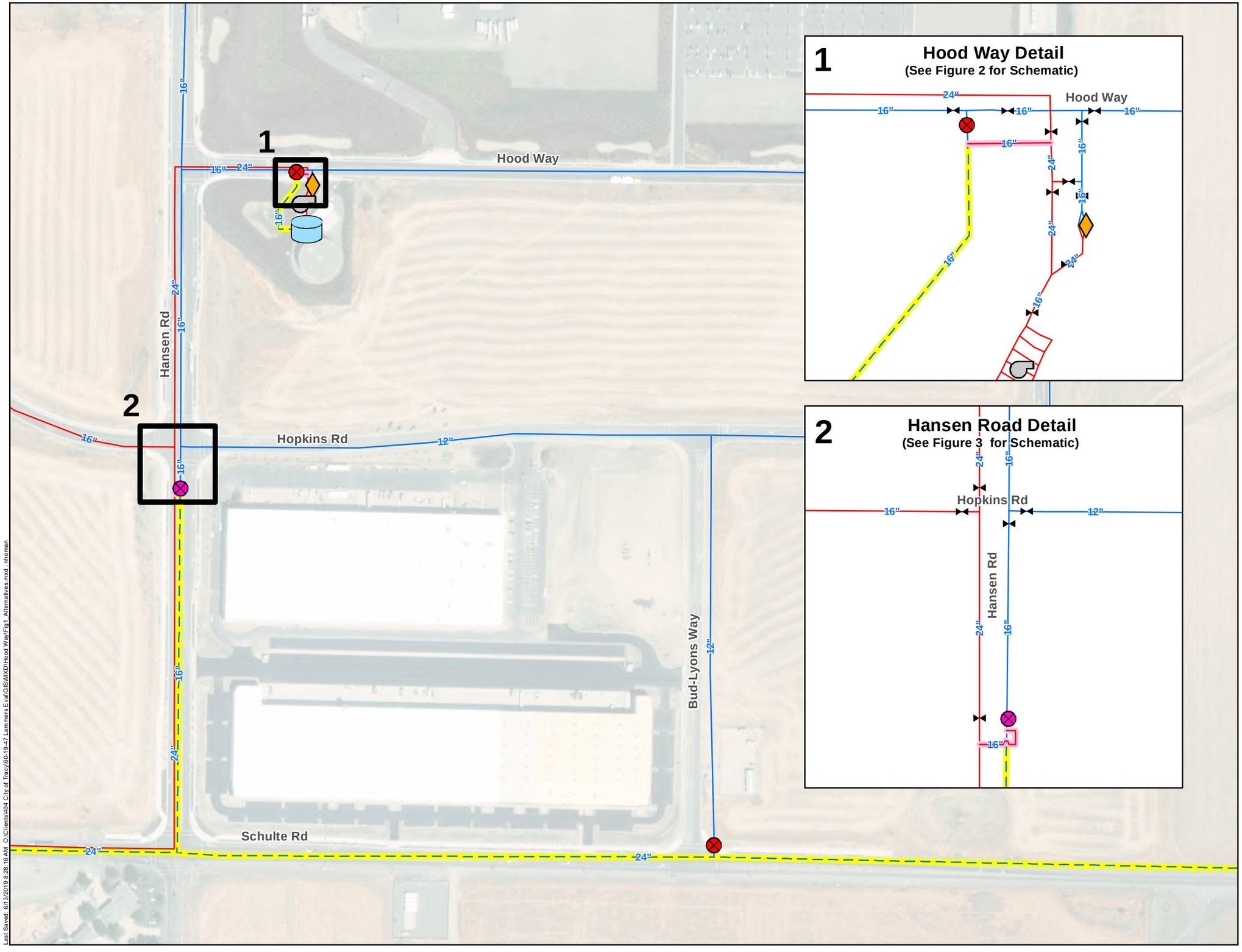
1. The total length of new pipeline required is 289 ft shorter than the previously recommended pipeline, making this alternative less expensive.
2. The proposed connections preserve the existing Zone 2 pipeline loop in Hansen Road, Hood Way, and Hopkins Road, unlike the alternative recommended in the May 2017 TM, which would break this loop by re-zoning the existing 16-inch diameter Zone 2 pipeline in Hansen Road between Hood Way and Hopkins Way to Zone 3.

After reviewing available plans and record drawings of the proposed construction areas, West Yost determined that the proposed connections are constructible. West Yost recommends the City construct the proposed connections instead of constructing the pipeline recommended in the May 2017 TM.

It should be noted that the re-zoning will close the valve at the southern end of the 12-inch diameter pipeline in Bud Lyons Way. This will create a long stretch of dead-end pipe and could potentially lead to water quality issues. Solutions to address these issues include:

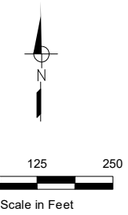
1. Placing the water service lateral for the future building located east of Bud-Lyons Way as close as possible to the southern end of Bud Lyons Way. The demands from the building would keep water flowing through the pipeline and prevent stagnant water from forming.
2. Abandoning the pipeline in Bud Lyons Way. This option is only feasible if this pipeline is not needed for future water service connections.
3. Implementing a program to regularly flush the pipeline using a hydrant or blow off valve near the southern end of Bud Lyons Way.

This TM is submitted in accordance with West Yost's January 2019 Scope of Services. No estimates of infrastructure costs were developed as part of this evaluation. The locations of existing pipelines and valves shown on the figures attached here-in should be confirmed prior to design. If existing pipelines or valves are not as shown on the reviewed plans and record drawings, additional evaluation of the feasibility of the recommended connections may be required.



1 Hood Way Detail
(See Figure 2 for Schematic)

2 Hansen Road Detail
(See Figure 3 for Schematic)



Closed Valve Due to Re-zoning

- Existing
- Proposed
- Other Existing Valve
- Cordes PRS #9
- Cordes Pump Station
- Cordes Tank
- Proposed Connection
- Existing Pipeline to be Re-zoned to Zone 3

Existing Pipeline

- Zone 2
- Zone 3

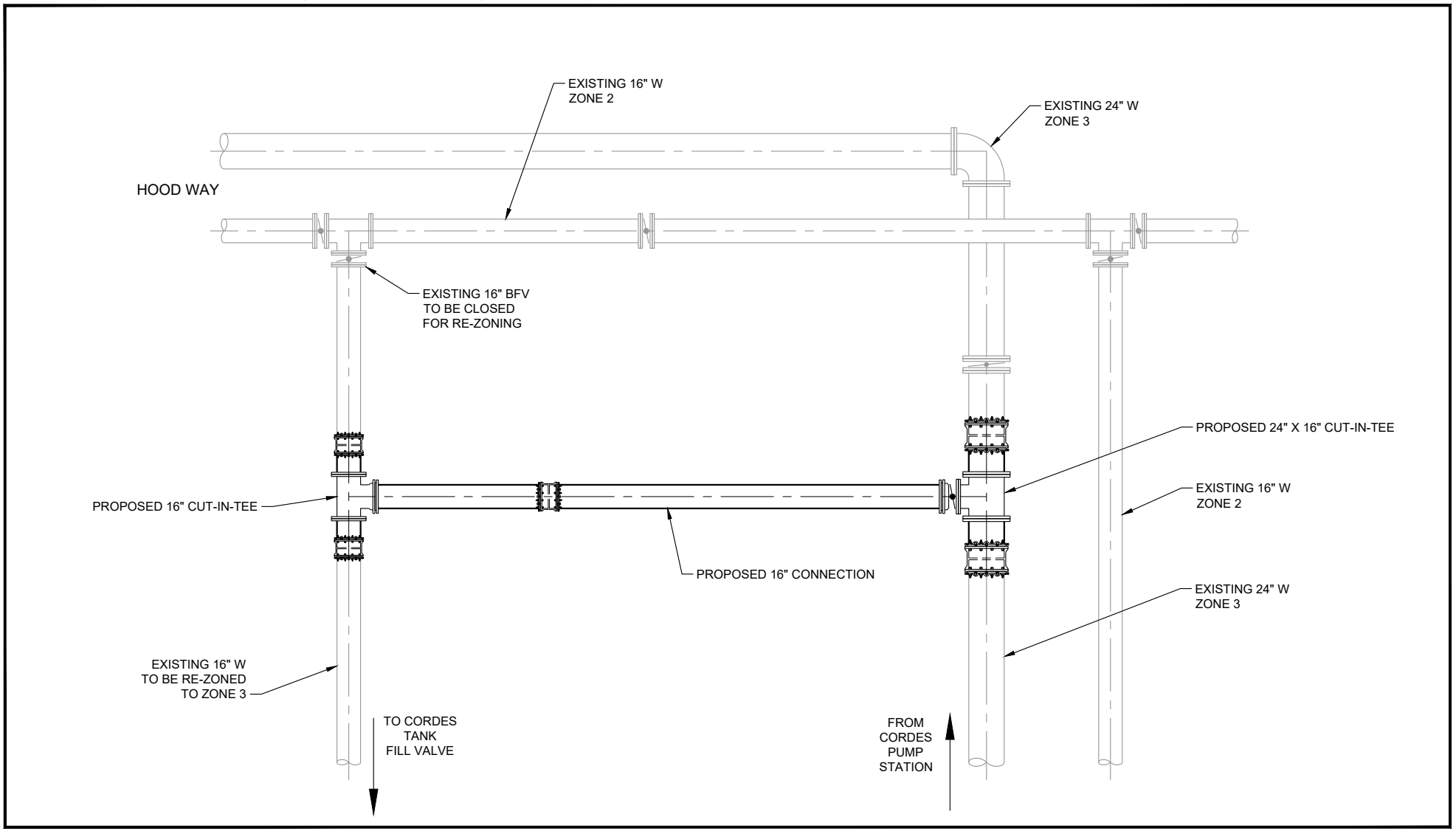
Notes:
1. Details are not to scale.

Figure 1

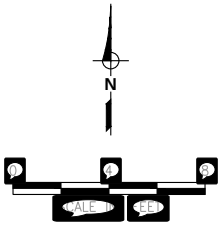
Recommended Connections for Re-Zoning at Hood Way and Hansen Road

City of Tracy
Design Recommendations for
Hood Way Pipeline

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Notes:
1. Schematic connection points are for illustrative purposes only for the conceptual understanding of the likely components involved in installing the recommended connections. These schematics are not to be used for construction purposes.



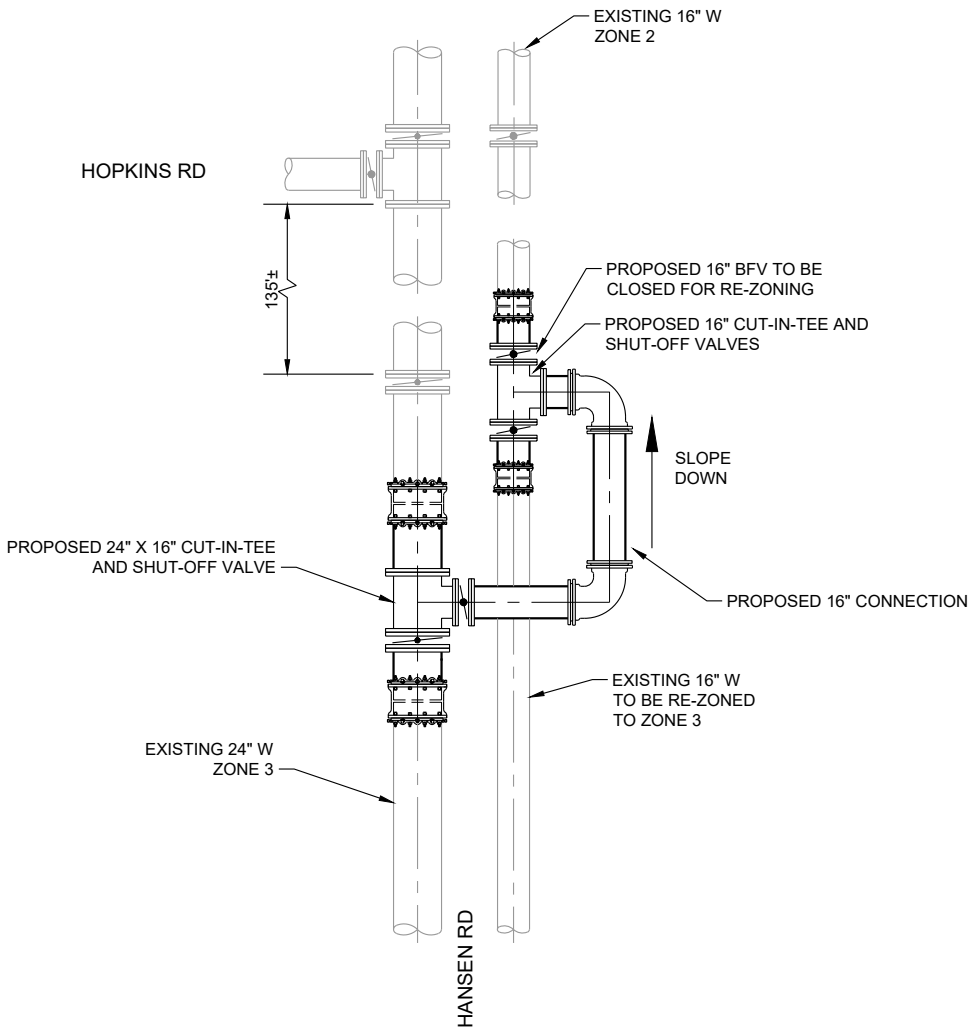
TRACY

WEST YOST ASSOCIATES

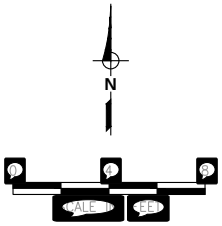
Figure 2

Schematic
Hood Way Connection

City of Tracy
Design Recommendations for
Hood Way Pipeline



Notes:
1. Schematic connection points are for illustrative purposes only for the conceptual understanding of the likely components involved in installing the recommended connections. These schematics are not to be used for construction purposes.



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Figure 3

Schematic
Hansen Road Connection

City of Tracy
Design Recommendations for
Hood Way Pipeline

APPENDIX E
Cost Estimating Assumptions

This appendix details West Yost's assumptions for estimating probable construction costs for the recommended potable and recycled water system facilities. Construction costs were developed based on a combination of data supplied by manufacturers, published industry standard cost data and curves, construction costs for similar facilities built by the City and/or other public agencies, and construction costs previously estimated by West Yost for similar facilities with similar construction cost indexes.

The costs presented in this appendix are for construction only and do not include estimating or construction uncertainties (e.g., variations in final quantities) or cost estimates for engineering, legal services, environmental review, inspections, and/or contract administration. Some of these items are referred to as contingency costs or mark-ups and are addressed in the last section of this appendix. It should also be noted that the construction costs presented in this appendix represent capital infrastructure costs and do not include costs for purchase of additional surface water supplies, supply reliability, or operation and maintenance.

All estimated construction costs have been adjusted to reflect 2020 dollars and should be used for conceptual cost estimates only and be updated regularly. Construction costs presented in this appendix are not intended to represent the lowest prices in the industry for each type of construction; rather they are representative of average or typical construction costs. These planning-level construction cost estimates have been prepared for guidance in evaluating various facility improvement options and are intended only for budgetary purposes within the context of this master planning effort.

The following sections of this appendix describe the assumptions used to estimate the probable construction costs for the planning and design of recommended water system facilities for the City's potable and recycled water systems:

- Land Acquisition Costs
- Potable Water System Construction Costs
- Recycled Water System Construction Costs
- Contingency Costs or Mark-ups

E.1 LAND ACQUISITION COSTS

It is assumed that land for buildout potable and recycled water facilities will be acquired at $190,000 per acre. Costs for land acquisition will only be added to major facilities such as tank sites where a large parcel is required. Consequently, land acquisition costs do not include right-of-way acquisition costs for transmission and distribution mains.

E.2 POTABLE WATER SYSTEM CONSTRUCTION COSTS

The following sections present the construction cost estimates used to project probable construction costs for recommended water system facilities in the City's potable water system and are categorized by improvement project type.

E.2.1 Treated Water Storage Reservoirs

Table 1 summarizes the estimated construction costs for treated water storage reservoirs between the size range of 0.5 to 6.0 MG. These costs generally include the installation of the storage tank, site piping, earthwork, paving, instrumentation, and related sitework. These costs are representative of construction conducted under normal excavation and foundation conditions and would be significantly higher for special or difficult foundation requirements.

It is recommended that new potable water storage reservoirs be partially buried prestressed concrete tanks to minimize impacts to developable land. These reservoirs could be located beneath City parks, allowing other uses of the land above the proposed reservoirs.

Table 1. Construction Costs for Treated Water Storage Reservoirs[a]

Capacity, MG	Estimated Construction Cost, million dollars[b] Partially Buried Prestressed Concrete
0.5	2.5
1.0	3.0
2.0	4.0
3.0	4.9
4.0	5.9
5.0	6.9
6.0	7.8

(a) Based on 2020 dollars.
(b) Estimated construction costs do not reflect an adjustment to account for the current economic bidding climate.

E.2.2 Aquifer Storage and Recovery Production Wells

Aquifer Storage and Recovery (ASR) well construction consists of pilot hole drilling, water quality/soil sampling, pilot hole reaming, well construction, well development and providing the necessary housing, pump, motor, automatic control equipment (SCADA), discharge piping, and disinfection equipment. All new groundwater wells will be designed to allow for both injection and extraction of water supplies in conjunction with the City's proposed ASR Well Program.

Construction costs for new groundwater wells are estimated to be approximately $3,900,000 per well (assuming a well capacity of 2,500 gpm). For wells with a capacity of 1,000 gpm, estimated construction costs are approximately $2,500,000 per well. These estimates are based on recent bids for similarly sized wells and representative of construction conducted under normal drilling conditions. Costs would be significantly higher for special or difficult locations.

E.2.3 Treated Water Booster Pump Stations

Booster pump stations will be required at ground-level and below-grade reservoirs to lift water to the appropriate pressure zones. Estimated average construction costs for distribution pumping stations, as shown in Table 2, are based on enclosed stations with architectural and landscaping treatment suitable for residential areas. Booster pump station costs can vary considerably, depending on architectural design, pumping head, and pumping capacity. Therefore, these costs

presented below are representative of construction conducted under common or normal conditions and would be significantly higher for special or difficult conditions.

Booster pump station cost estimates include the installation of the booster pumps, site piping, earthwork, paving, a chemical feed system (hypochlorite), on-site backup/standby power generator, SCADA, and related sitework. Station designs will be based on the City's typical booster pump station configurations, which include 2 to 4 variable speed booster pumps installed in parallel to accommodate varying water demand conditions.

Table 2. Construction Costs for Treated Water Booster Pump Stations[a]

Firm Capacity[b], mgd	Estimated Construction Cost, million dollars[c]
0.5	1.3
1	1.4
2	1.5
3	1.7
5	2.0
10	2.8

(a) Based on 2020 dollars.
(b) Equal to the total pumping capacity with the largest pump out of service or on standby.
(c) Estimated construction costs do not reflect an adjustment to account for the current economic bidding climate.

E.2.4 Pipelines

Unit construction costs for potable water pipelines 8 through 36 inches in diameter are provided in Table 3. These unit costs are categorized by typical pipeline construction either in developed (e.g., in urban or suburban roads) or undeveloped (e.g., across open fields or in rural roads) areas and are representative of pipeline construction conducted under common or normal conditions. Special or difficult conditions would increase costs significantly.

The unit construction costs presented below generally include pipeline materials, trenching, placing and jointing pipe, valves, fittings, hydrants, service connections, placing imported pipe bedding, native backfill material, and partial asphalt pavement replacement, if required. However, the costs presented in Table 3 do not include jacking and boring pipe or constructing boring and receiving pits. It is assumed the total cost to construct one boring pit and one receiving pit is $40,000. Pipeline jack and bore costs are shown in Table 4 and should be added where required.

Table 3. Unit Construction Costs for Pipelines[a,b]		
Pipeline Diameter, inches	Unit Construction Cost, dollars/linear foot[c]	
	Developed Areas	Undeveloped Areas
8	190	160
10	220	185
12	260	225
14	300	255
16	335	285
18	370	315
20	400	340
24	465	395
30	565	480
36	660	560

(a) Based on 2020 dollars.
(b) Costs based on ductile iron cement-lined pipe.
(c) Estimated construction costs do not reflect an adjustment to account for the current economic bidding climate.

Table 4. Unit Construction Costs for Jack and Bore[a]	
Pipeline Size	Unit Construction Cost, dollars/linear foot[b,c]
8-inch pipe (16-inch casing)	520
12-inch pipe (21-inch casing)	595
16-inch pipe (24-inch casing)	690
20-inch pipe (30-inch casing)	845
24-inch pipe (36-inch casing)	995
30-inch pipe (42-inch casing)	1,115
54-inch pipe (66-inch casing)	1,700
Tunnel	3,540

(a) Based on 2020 dollars.
(b) Conductor pipe is not included in cost.
(c) Estimated construction costs do not reflect an adjustment to account for the current economic bidding climate.

E.2.5 Pressure Regulating Stations and Pressure Reducing Valves

Interconnections (i.e., pressure regulating station or pressure reducing valve) are required to provide water supply between pressure zones during peak demands and/or emergency conditions. The estimated construction cost for a pressure regulating station is $250,000, while construction of a pressure reducing valve is estimated at $125,000. These costs are representative of construction conducted under normal conditions and would be significantly higher for special or difficult conditions.

Construction cost estimates for a pressure regulating station include the installation of a 12-inch diameter control valve, a concrete utility vault, access hatches, site piping, earthwork, paving,

SCADA, and related sitework. Construction cost estimates for a pressure reducing valve include the same items as a pressure regulating station; however, since a pressure reducing valve is typically used for emergency conditions, it requires a less complicated control valve and does not include SCADA installation.

E.2.6 Backup Power Generators

On-site backup power generators are recommended so pumps can continue delivering water to the distribution system in the event of a power outage. These generators should be sized to meet the power demands of the pumps. The construction cost for a new on-site backup power generator is estimated to be approximately $250,000. This cost is representative of construction conducted under normal conditions and would be significantly higher for special or difficult conditions.

E.2.7 SCADA System Improvements

SCADA system improvements are recommended to provide operators with real-time system data and flexibility in system operations. The construction cost for the installation of SCADA monitoring is estimated to be $125,000. This cost is representative of construction conducted under normal conditions and would be significantly higher for special or difficult conditions. Any discrepancies or inaccurate data tags should also be corrected to provide accurate real-time system flow and pressure monitoring.

E.3 RECYCLED WATER SYSTEM CONSTRUCTION COSTS

The following sections present the construction cost estimates used to project probable construction costs for recommended recycled water system facilities and are categorized by improvement project type.

The construction cost estimates of the recycled water system are based on similar assumptions to the construction cost estimates of the potable water system.

E.3.1 Recycled Water Storage Reservoirs

For partially buried prestressed concrete tanks, estimated storage reservoir costs are the same for recycled water and potable water and are repeated in Table 5 for reference. Table 5 also includes estimated costs for above ground, welded steel storage reservoirs. Costs for both concrete and welded steel tanks generally include the installation of the storage tank, site piping, earthwork, paving, instrumentation, and related sitework. Estimates are representative of construction conducted under normal excavation and foundation conditions and would be significantly higher for special or difficult foundation requirements. It is assumed that the recommended Zone A Tank (refer to Chapter 9) will be an above ground welded steel storage reservoir, while the remaining recommended storage reservoir(s) for the recycled water system will be partially buried prestressed concrete tanks.

Table 5. Construction Costs for Recycled Water Storage Reservoirs[a]		
Capacity, MG	Estimated Construction Cost, million dollars[b]	
	Partially Buried Prestressed Concrete	Welded Steel
0.5	2.5	1.7
1.0	3.0	2.1
2.0	4.0	2.9
3.0	4.9	3.7
4.0	5.9	4.5
5.0	6.9	5.3
6.0	7.8	6.0

(a) Based on 2020 dollars.
(b) Estimated construction costs do not reflect an adjustment to account for the current economic bidding climate.

E.3.2 Recycled Water Booster Pump Stations

Additional recycled water booster pump stations will be required at the Holly Drive WWTP and other locations to lift recycled water to the appropriate pressure zones. Estimated average construction costs for distribution pumping stations, as shown in Table 6, are based on enclosed stations with architectural and landscaping treatment suitable for residential areas. Booster pump station costs can vary considerably, depending on factors such as architectural design, pumping head, and pumping capacity. Therefore, these costs presented below are representative of construction conducted under common or normal conditions and would be significantly higher for special or difficult conditions.

Costs presented in Table 6 are discounted 10 percent from the potable water booster pump station costs presented in Table 2. This is because: (1) recycled water booster pump stations do not need to deliver design flows using firm capacity, so one fewer pump is required; and (2) they do not require backup generators.

Recycled water booster pump station cost estimates include the installation of the booster pumps, site piping, earthwork, paving, SCADA, and related sitework. Station designs will be based on the City's typical booster pump station configurations, which include 2 to 4 variable speed booster pumps installed in parallel to accommodate varying water demand conditions.

Table 6. Construction Costs for Recycled Water Booster Pump Stations[a]	
Total Capacity, mgd	Estimated Construction Cost, million dollars[b]
0.5	1.2
1	1.2
2	1.4
3	1.5
5	1.8
10	2.6

(a) Based on 2020 dollars.
(b) Estimated construction costs do not reflect an adjustment to account for the current economic bidding climate.

E.3.3 Recycled Water Pipelines

Unit construction costs for recycled water pipelines 8 inches and 12 inches in diameter are slightly less than for potable water pipelines, because the 8-inch and 12-inch diameter recycled water pipeline material is assumed to be PVC instead of ductile iron. For recycled water pipelines 16 inches through 36 inches in diameter, the material is assumed to be ductile iron, so the unit construction costs for these larger diameter recycled water pipelines are the same as for the corresponding potable water pipelines. Estimated pipeline unit costs are provided in Table 7 and are categorized by typical pipeline construction either in developed (e.g., in urban or suburban roads) or undeveloped (e.g., across open fields or in rural roads) areas. These costs are representative of pipeline construction conducted under common or normal conditions and would be significantly higher for special or difficult conditions.

The unit construction costs presented below generally include pipeline materials, trenching, placing and jointing pipe, valves, fittings, hydrants, service connections, placing imported pipe bedding, native backfill material, and partial asphalt pavement replacement, if required. However, the costs presented in Table 7 do not include jacking and boring pipe or constructing boring and receiving pits. It is assumed the total cost to construct one boring pit and one receiving pit is $40,000. Pipeline jack and bore costs are shown in Table 8 and should be added where required.

Table 7. Unit Construction Costs for Recycled Water Pipelines[a,b]

Pipeline Diameter, inches	Unit Construction Cost, dollars/linear foot[c]	
	Developed Areas	Undeveloped Areas
8	175	150
12	255	220
16	335	285
24	465	395
36	660	560

(a) Based on 2020 dollars.
(b) Costs based on PVC pipe for 8-inch and 12-inch diameter and ductile iron cement-lined pipe for 16-inch diameter and larger.
(c) Estimated construction costs do not reflect an adjustment to account for the current economic bidding climate.

Table 8. Unit Construction Costs for Jack and Bore[a]	
Pipeline Size	Unit Construction Cost, dollars/linear foot[b,c]
8-inch pipe (16-inch casing)	520
12-inch pipe (21-inch casing)	595
16-inch pipe (24-inch casing)	690
20-inch pipe (30-inch casing)	845
24-inch pipe (36-inch casing)	995
30-inch pipe (42-inch casing)	1,115
54-inch pipe (66-inch casing)	1,700
Tunnel	3,540

(a) Based on 2020 dollars.
(b) Conductor pipe is not included in cost.
(c) Estimated construction costs do not reflect an adjustment to account for the current economic bidding climate.

E.4 CONTINGENCY COSTS OR MARK-UPS

Contingency costs or mark-ups must be reviewed on a case-by-case basis, because they will vary considerably with each construction project. However, to assist City staff with budgeting for these recommended water system facility improvements, standard mark-ups have been added to the planning budget as percentages of the estimated base construction cost.

Standard mark-ups are divided into four subcategories, totaling 40 percent:

- General Contingency: The construction costs presented above are representative of the construction of water system facilities under normal construction conditions and schedules; consequently, it is appropriate to allow for estimating and construction uncertainties unavoidably associated with conceptual project planning. Unexpected construction conditions, the need for unforeseen mechanical items, and variations in final quantities are only a few of the items that can increase project costs. An allowance of 15 percent of the base construction cost will be included to cover such project-related general contingencies.
- Design and Planning: Design and planning services associated with new facilities include preliminary investigations and reports, right-of-way acquisition, foundation explorations, preparation of drawings and specifications for construction, surveying and staking, sampling of testing material, and start-up services. The cost of these items may vary, but for the purpose of this study, it is assumed that engineering design and planning costs will equal 10 percent of the base construction cost.
- Construction Management: Construction management covers items such as contract management and inspection during construction. The cost of these items may vary, but for the purpose of this study, it is assumed that construction management costs will equal 10 percent of the base construction cost.

- Program Administration: Program administration covers items such as legal fees, environmental/CEQA compliance requirements, financing expenses, and interest during construction. The cost of these items may vary, but for the purpose of this study, it is assumed that program administration costs will equal 5 percent of the base construction cost.

An example application of these standard mark-ups to a project with an assumed base construction cost of $1.0 million is shown in Table 9. As shown, the total cost of all project construction contingencies (general contingency, design and planning, construction management, and program administration costs) is 40 percent of the base construction cost for each construction project.

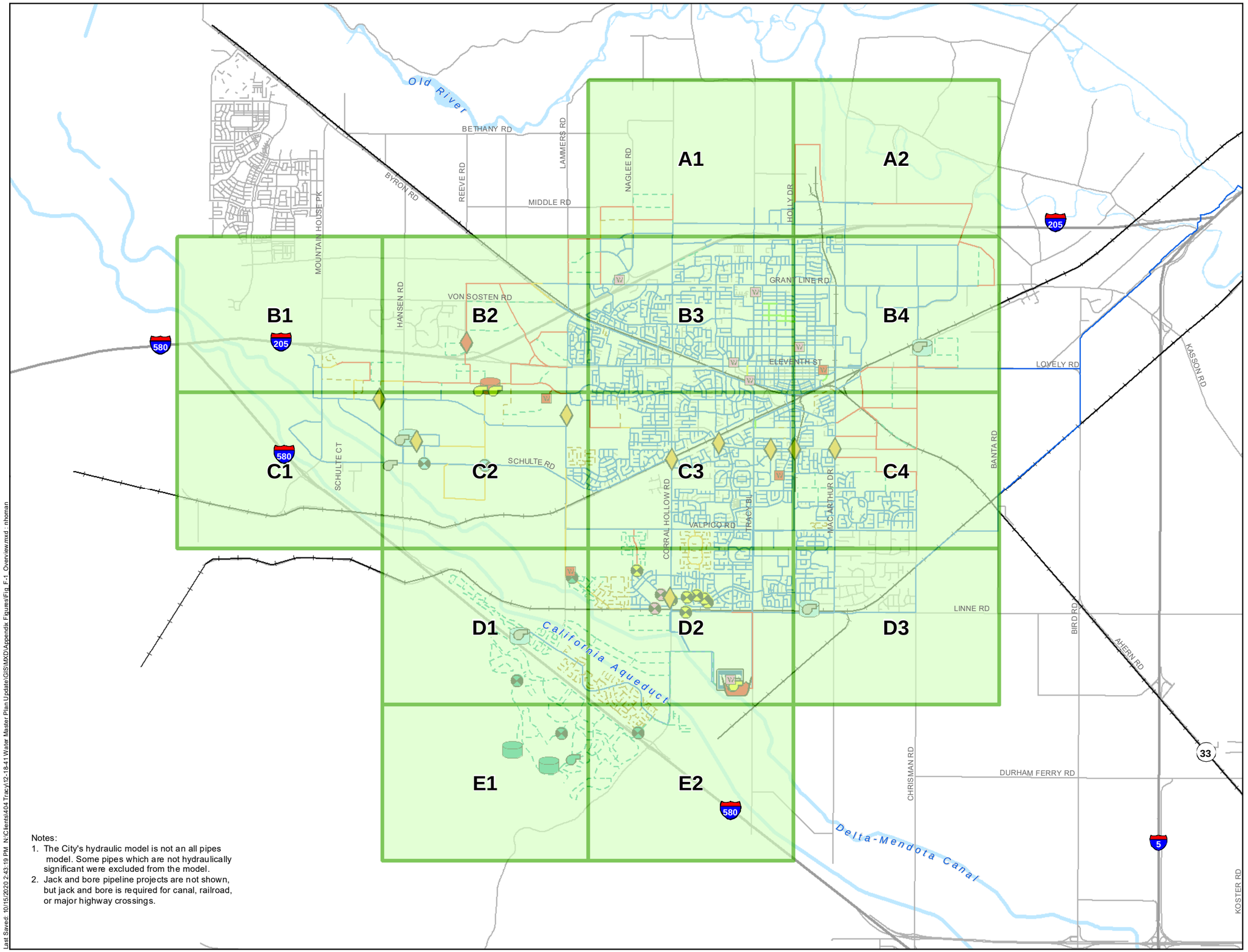
Table 9. Example Application of Mark-ups

Cost Component	Percent	Cost, dollars
Estimated Base Construction Cost before Mark-ups[(a)]		1,000,000
Mark-ups:		
General Contingency	15	150,000
Design and Planning	10	100,000
Construction Management	10	100,000
Program Administration	5	50,000
Estimated Total Project Cost		**$1,400,000**

(a) Assumed cost of an example project.

APPENDIX F

Proposed Future Potable Water System Facility Improvements



Notes:
1. The City's hydraulic model is not an all pipes model. Some pipes which are not hydraulically significant were excluded from the model.
2. Jack and bore pipeline projects are not shown, but jack and bore is required for canal, railroad, or major highway crossings.

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N

0 3,000 6,000

Scale in Feet

Symbology

Proposed Buildout Program Facilities

- Buildout Pressure Regulating Station
- Buildout Pressure Reducing Valve
- Buildout Booster Pump Station
- Buildout Groundwater Well
- Buildout Storage Tank
- Proposed Buildout Clearwell
- Buildout System Pipeline

Proposed Buildout Non-Program (NP) Facilities

- Buildout NP Pressure Reducing Valve
- Buildout NP Booster Pump Station
- Buildout NP Storage Tank
- Buildout NP Pipeline

Proposed 2025 Program Facilities

- 2025 Pressure Reducing Valve
- 2025 System Pipeline
- 2025 Pipeline CIP

Proposed 2025 Non-Program Facilities

- 2025 Non-Program Pipeline

Existing System Facilities

- Existing Pressure Regulating Station
- Existing Pressure Reducing Valve
- Existing Booster Pump Station
- Existing Groundwater Well
- Existing Storage Tank
- John Jones Water Treatment Plant
- Existing System Pipeline
- Proposed Existing System Pipeline CIP

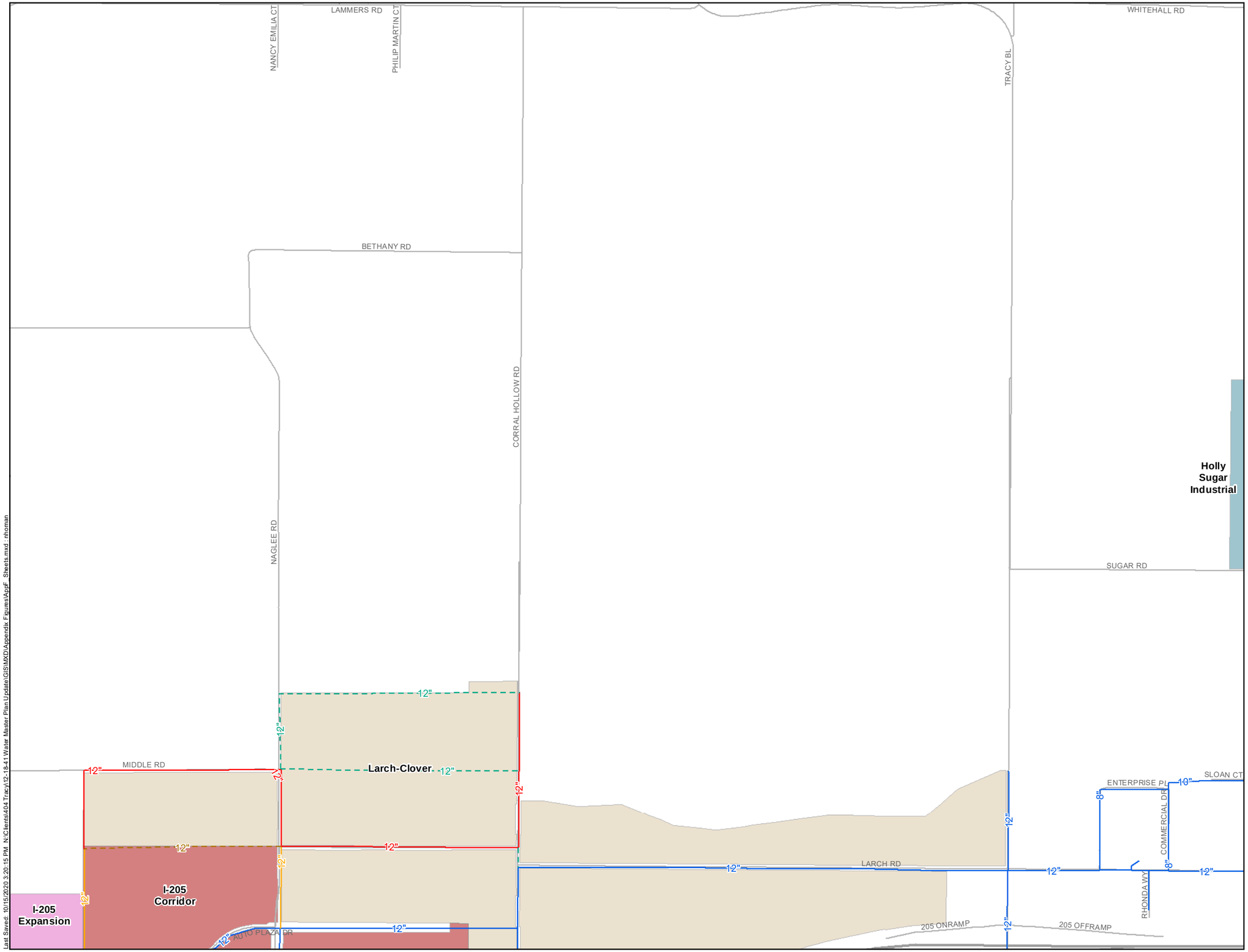
TRACY

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Figure F-1

Proposed Future Potable Water System Facility Improvements

City of Tracy
Water System Master Plan Update

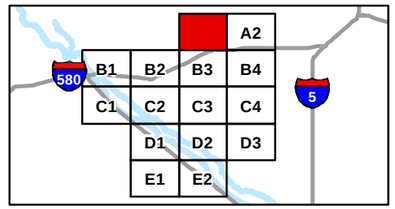


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N

0 500 1,000

Scale in Feet



Proposed Buildout Program Facilities

- Buildout Pressure Regulating Station
- Buildout Pressure Reducing Valve
- Buildout Booster Pump Station
- Buildout Groundwater Well
- Buildout Storage Tank
- Proposed Buildout Clearwell
- Buildout System Pipeline

Proposed Buildout Non-Program (NP) Facilities

- Buildout NP Pressure Reducing Valve
- Buildout NP Booster Pump Station
- Buildout NP Storage Tank
- Buildout NP Pipeline

Proposed 2025 Program Facilities

- 2025 Pressure Reducing Valve
- 2025 System Pipeline
- 2025 Pipeline CIP

Proposed 2025 Non-Program Facilities

- 2025 Non-Program Pipeline

Existing System Facilities

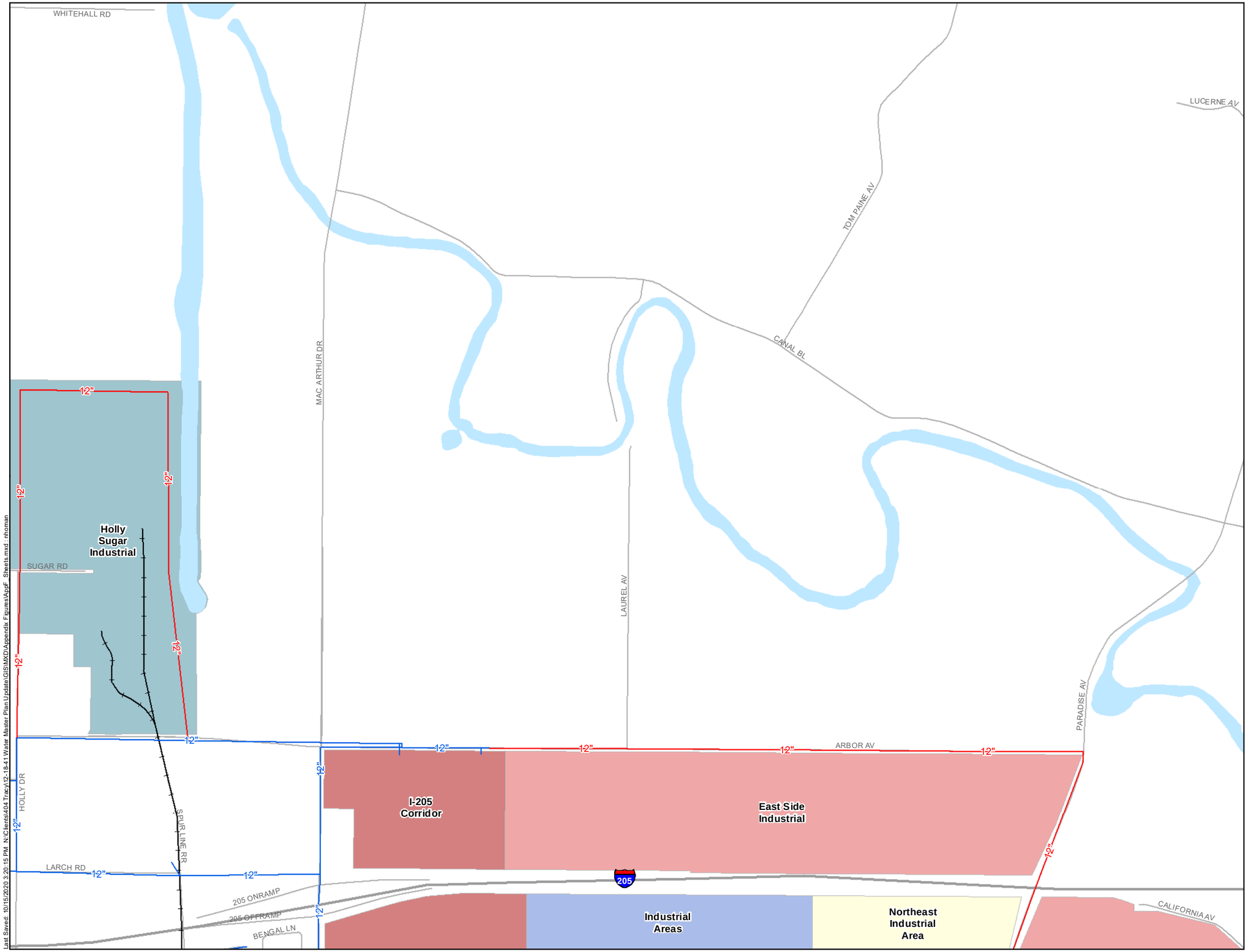
- Existing Pressure Regulating Station
- Existing Pressure Reducing Valve
- Existing Booster Pump Station
- Existing Groundwater Well
- Existing Storage Tank
- Existing System Pipeline
- Proposed Existing System Pipeline CIP

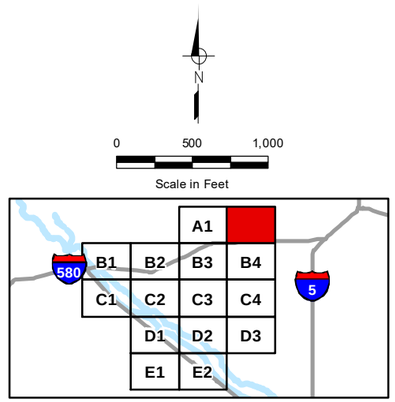
TRACY

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Figure F-A1

City of Tracy
Water System Master Plan Update





Proposed Buildout Program Facilities

- Buildout Pressure Regulating Station
- Buildout Pressure Reducing Valve
- Buildout Booster Pump Station
- Buildout Groundwater Well
- Buildout Storage Tank
- Proposed Buildout Clearwell
- Buildout System Pipeline

Proposed Buildout Non-Program (NP) Facilities

- Buildout NP Pressure Reducing Valve
- Buildout NP Booster Pump Station
- Buildout NP Storage Tank
- Buildout NP Pipeline

Proposed 2025 Program Facilities

- 2025 Pressure Reducing Valve
- 2025 System Pipeline
- 2025 Pipeline CIP

Proposed 2025 Non-Program Facilities

- 2025 Non-Program Pipeline

Existing System Facilities

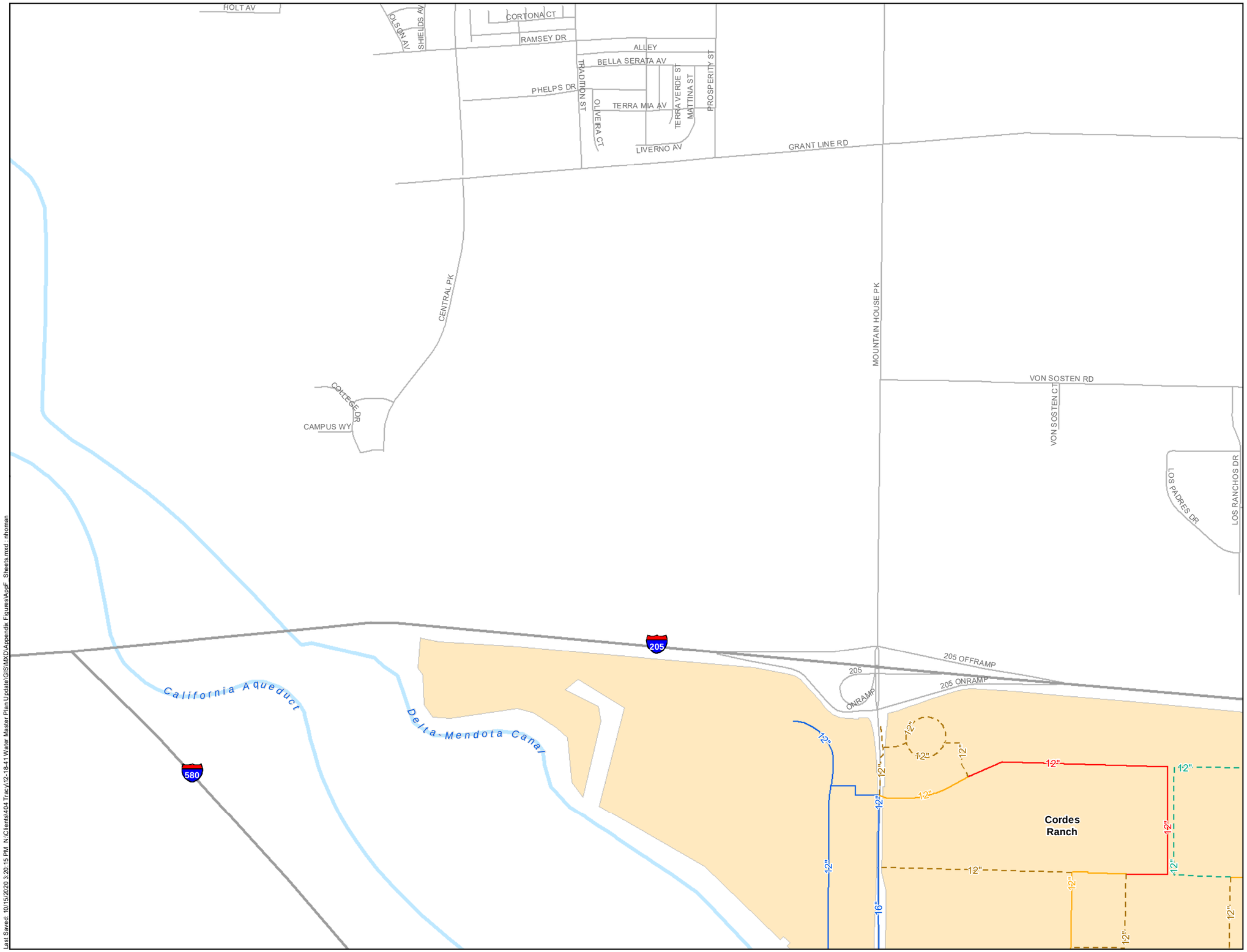
- Existing Pressure Regulating Station
- Existing Pressure Reducing Valve
- Existing Booster Pump Station
- Existing Groundwater Well
- Existing Storage Tank
- Existing System Pipeline
- Proposed Existing System Pipeline CIP

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Figure F-A2

City of Tracy
Water System Master Plan Update



Proposed Buildout Program Facilities

- Buildout Pressure Regulating Station
- Buildout Pressure Reducing Valve
- Buildout Booster Pump Station
- Buildout Groundwater Well
- Buildout Storage Tank
- Proposed Buildout Clearwell
- Buildout System Pipeline

Proposed Buildout Non-Program (NP) Facilities

- Buildout NP Pressure Reducing Valve
- Buildout NP Booster Pump Station
- Buildout NP Storage Tank
- Buildout NP Pipeline

Proposed 2025 Program Facilities

- 2025 Pressure Reducing Valve
- 2025 System Pipeline
- 2025 Pipeline CIP

Proposed 2025 Non-Program Facilities

- 2025 Non-Program Pipeline

Existing System Facilities

- Existing Pressure Regulating Station
- Existing Pressure Reducing Valve
- Existing Booster Pump Station
- Existing Groundwater Well
- Existing Storage Tank
- Existing System Pipeline
- Proposed Existing System Pipeline CIP

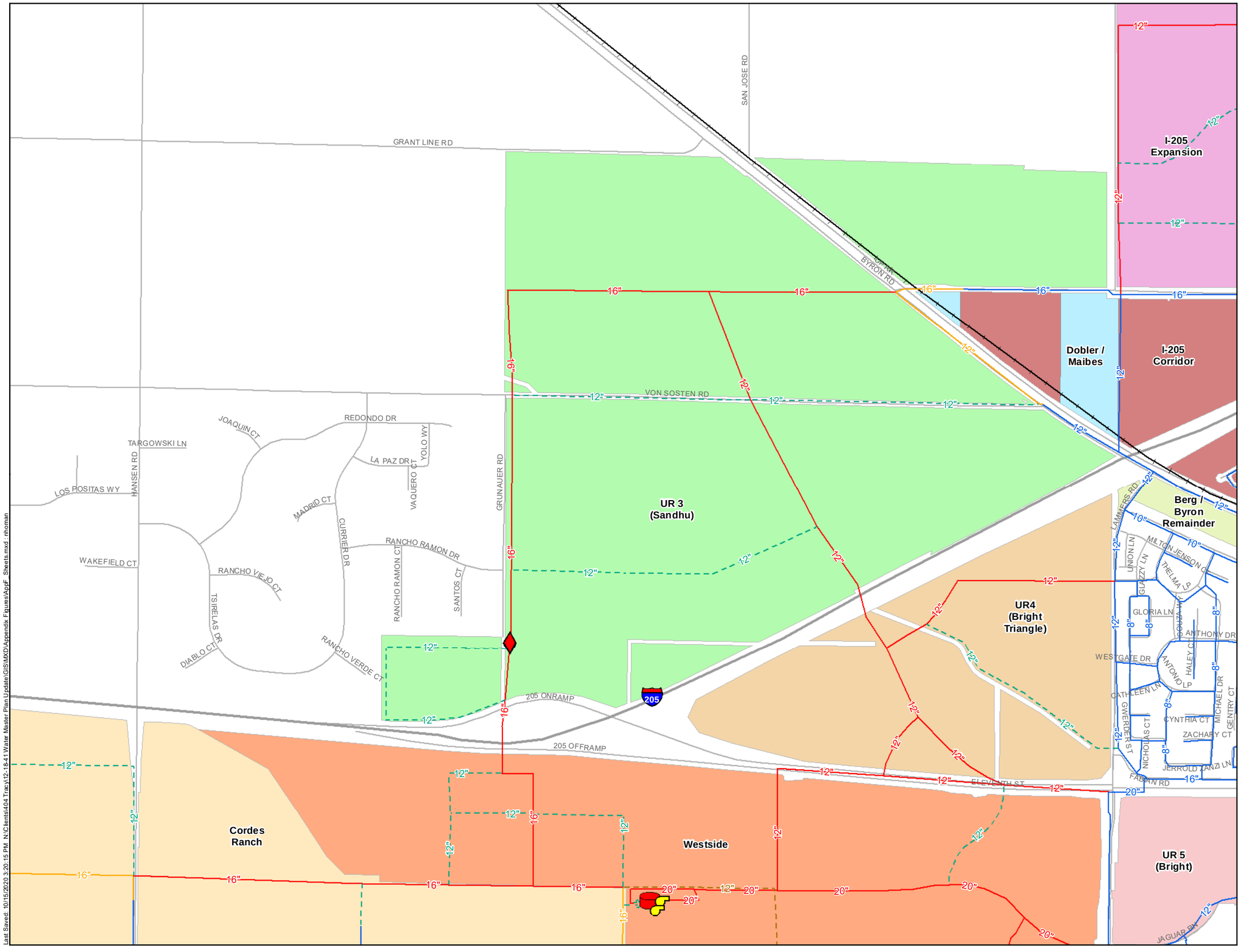
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Figure F-B1

City of Tracy
Water System Master Plan Update

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Proposed Buildout Program Facilities

- Buildout Pressure Regulating Station
- Buildout Pressure Reducing Valve
- Buildout Booster Pump Station
- Buildout Groundwater Well
- Buildout Storage Tank
- Proposed Buildout Clearwell
- Buildout System Pipeline

Proposed Buildout Non-Program (NP) Facilities

- Buildout NP Pressure Reducing Valve
- Buildout NP Booster Pump Station
- Buildout NP Storage Tank
- Buildout NP Pipeline

Proposed 2025 Program Facilities

- 2025 Pressure Reducing Valve
- 2025 System Pipeline
- 2025 Pipeline CIP

Proposed 2025 Non-Program Facilities

- 2025 Non-Program Pipeline

Existing System Facilities

- Existing Pressure Regulating Station
- Existing Pressure Reducing Valve
- Existing Booster Pump Station
- Existing Groundwater Well
- Existing Storage Tank
- Existing System Pipeline
- Proposed Existing System Pipeline CIP

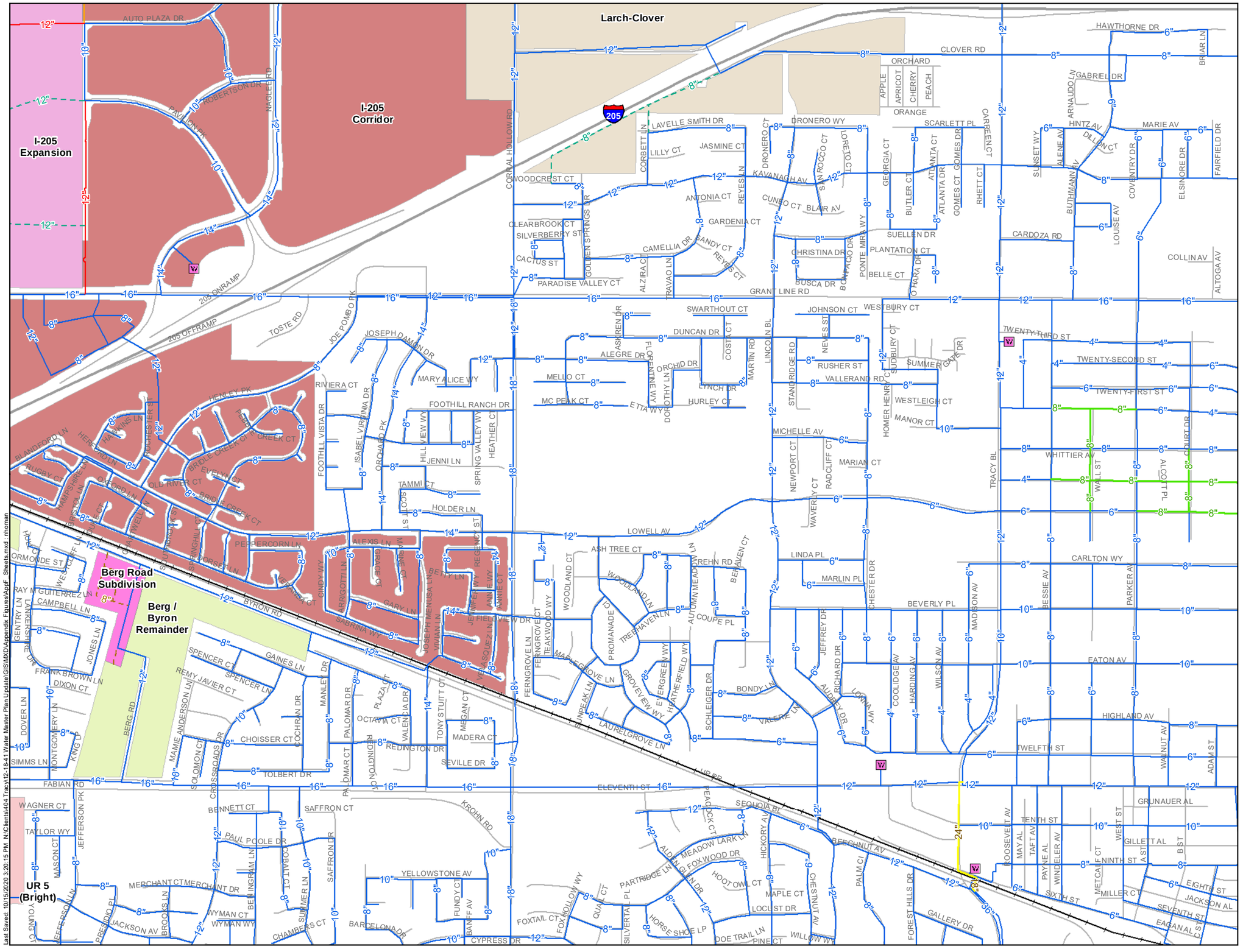
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Figure F-B2

City of Tracy
Water System Master Plan Update

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Proposed Buildout Program Facilities

- Buildout Pressure Regulating Station
- Buildout Pressure Reducing Valve
- Buildout Booster Pump Station
- Buildout Groundwater Well
- Buildout Storage Tank
- Proposed Buildout Clearwell
- Buildout System Pipeline

Proposed Buildout Non-Program (NP) Facilities

- Buildout NP Pressure Reducing Valve
- Buildout NP Booster Pump Station
- Buildout NP Storage Tank
- Buildout NP Pipeline

Proposed 2025 Program Facilities

- 2025 Pressure Reducing Valve
- 2025 System Pipeline
- 2025 Pipeline CIP

Proposed 2025 Non-Program Facilities

- 2025 Non-Program Pipeline

Existing System Facilities

- Existing Pressure Regulating Station
- Existing Pressure Reducing Valve
- Existing Booster Pump Station
- Existing Groundwater Well
- Existing Storage Tank
- Existing System Pipeline
- Proposed Existing System Pipeline CIP

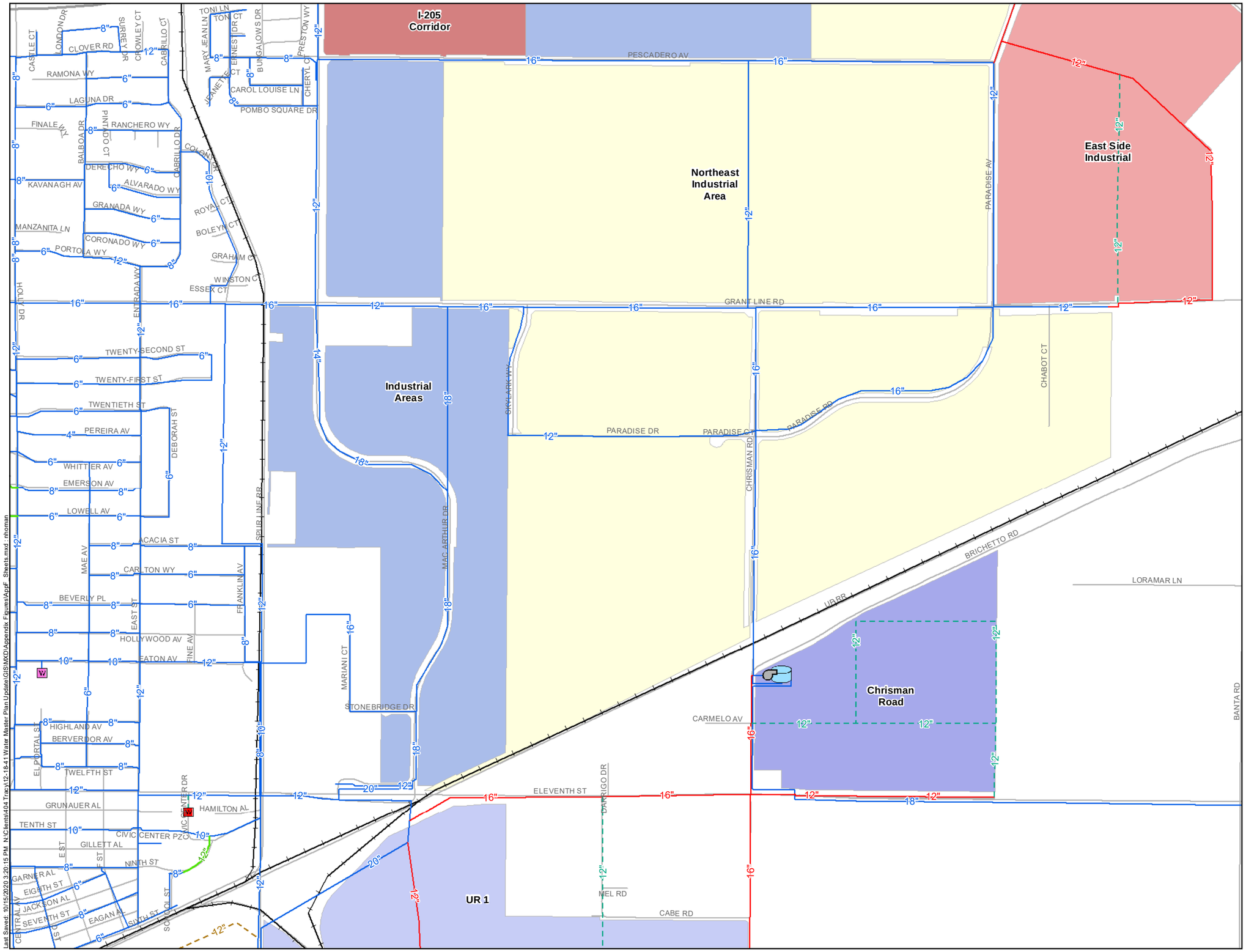
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Figure F-B3

City of Tracy
Water System Master Plan Update

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Proposed Buildout Program Facilities

- Buildout Pressure Regulating Station
- Buildout Pressure Reducing Valve
- Buildout Booster Pump Station
- Buildout Groundwater Well
- Buildout Storage Tank
- Proposed Buildout Clearwell
- Buildout System Pipeline

Proposed Buildout Non-Program (NP) Facilities

- Buildout NP Pressure Reducing Valve
- Buildout NP Booster Pump Station
- Buildout NP Storage Tank
- Buildout NP Pipeline

Proposed 2025 Program Facilities

- 2025 Pressure Reducing Valve
- 2025 System Pipeline
- 2025 Pipeline CIP

Proposed 2025 Non-Program Facilities

- 2025 Non-Program Pipeline

Existing System Facilities

- Existing Pressure Regulating Station
- Existing Pressure Reducing Valve
- Existing Booster Pump Station
- Existing Groundwater Well
- Existing Storage Tank
- Existing System Pipeline
- Proposed Existing System Pipeline CIP

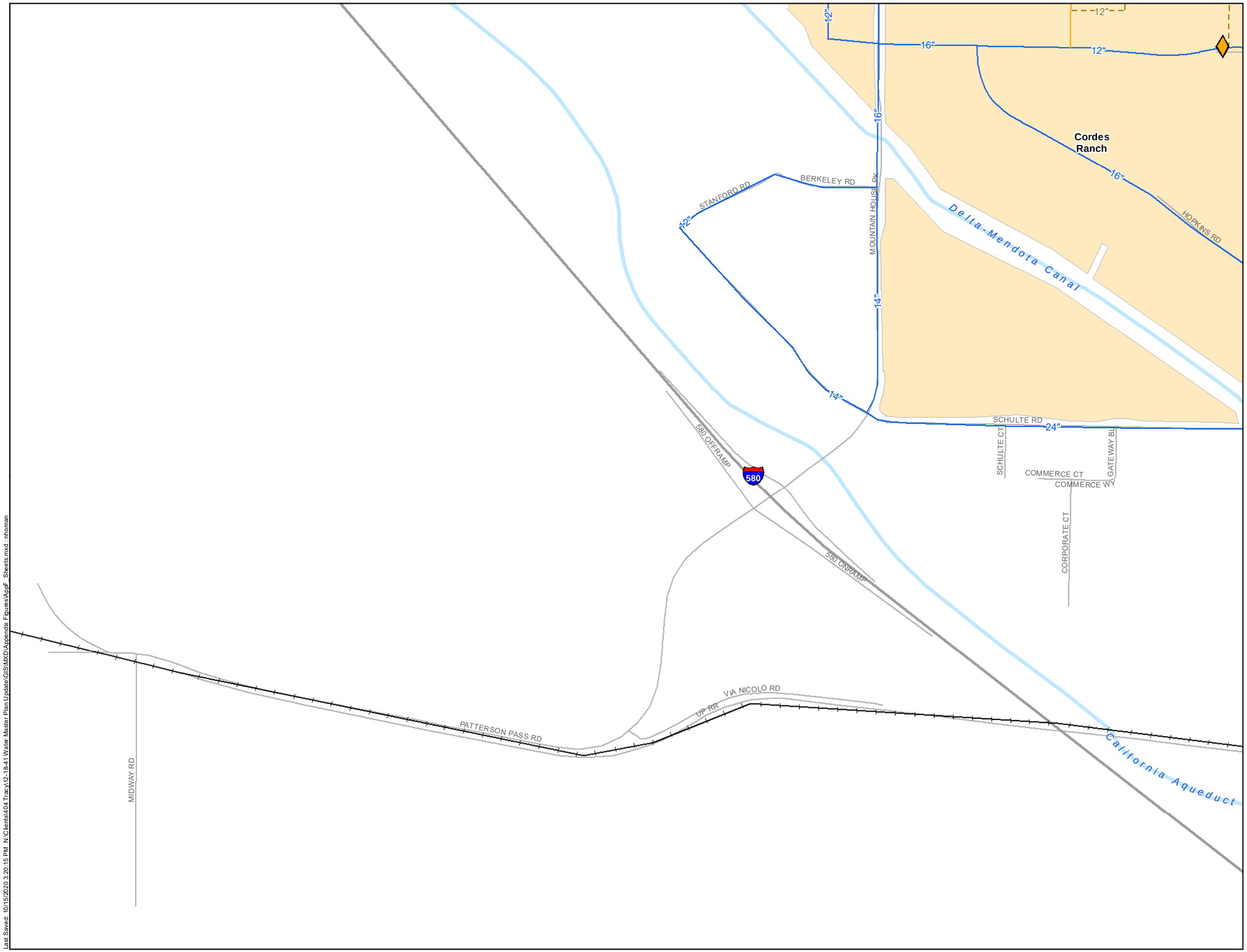
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Figure F-B4

City of Tracy
Water System Master Plan Update

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Proposed Buildout Program Facilities

- Buildout Pressure Regulating Station
- Buildout Pressure Reducing Valve
- Buildout Booster Pump Station
- Buildout Groundwater Well
- Buildout Storage Tank
- Proposed Buildout Clearwell
- Buildout System Pipeline

Proposed Buildout Non-Program (NP) Facilities

- Buildout NP Pressure Reducing Valve
- Buildout NP Booster Pump Station
- Buildout NP Storage Tank
- Buildout NP Pipeline

Proposed 2025 Program Facilities

- 2025 Pressure Reducing Valve
- 2025 System Pipeline
- 2025 Pipeline CIP

Proposed 2025 Non-Program Facilities

- 2025 Non-Program Pipeline

Existing System Facilities

- Existing Pressure Regulating Station
- Existing Pressure Reducing Valve
- Existing Booster Pump Station
- Existing Groundwater Well
- Existing Storage Tank
- Existing System Pipeline
- Proposed Existing System Pipeline CIP

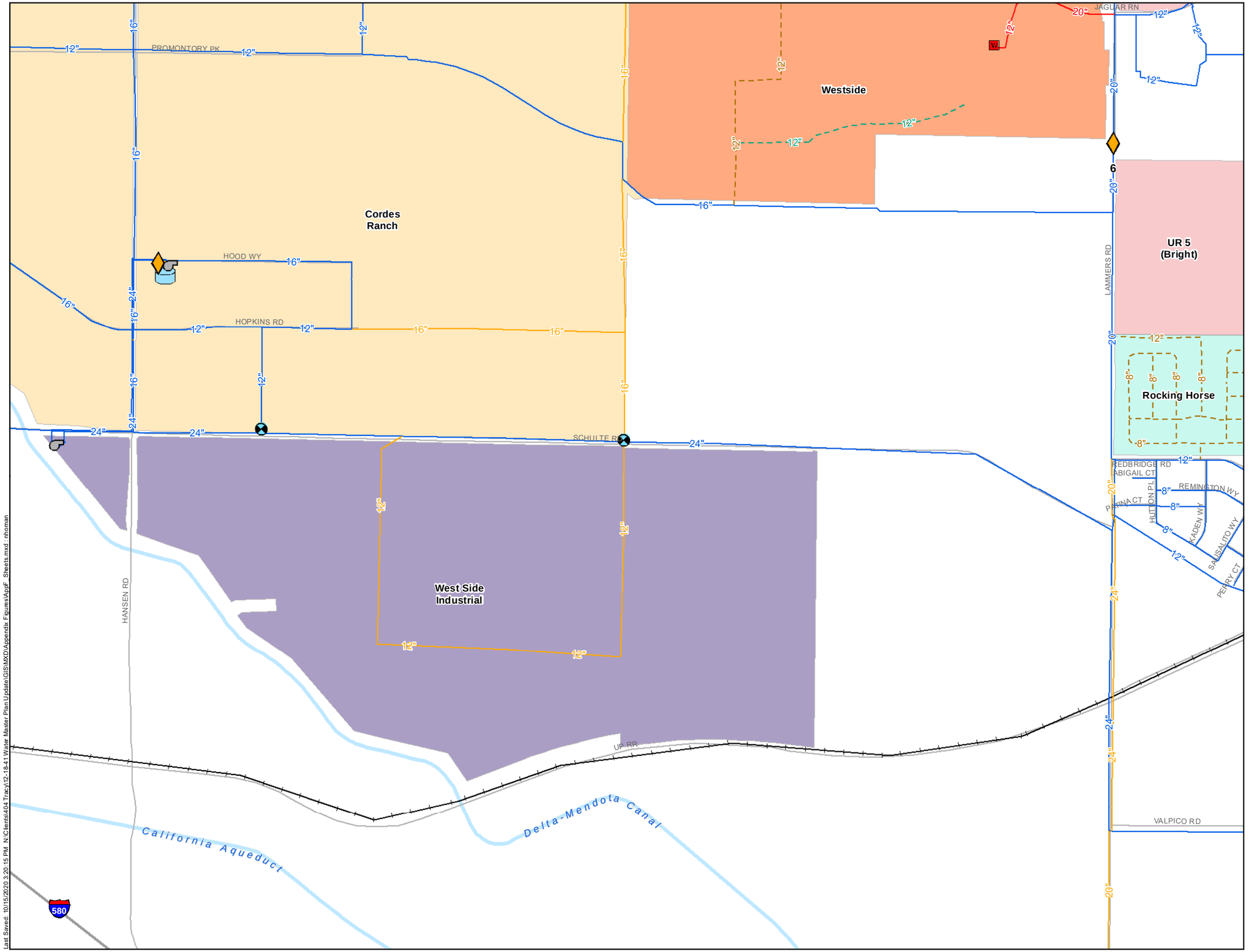
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Figure F-C1

City of Tracy
Water System Master Plan Update

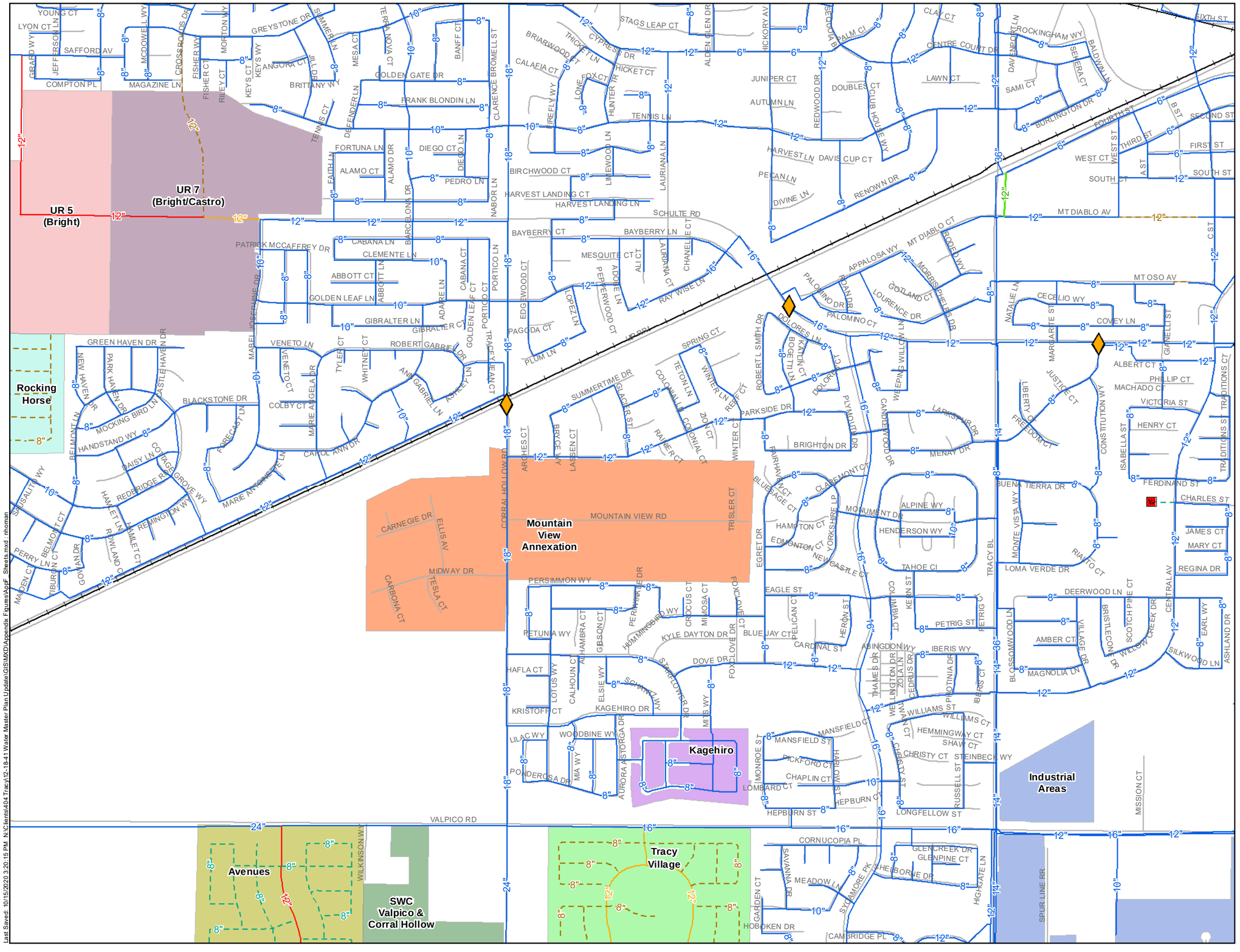
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Figure F-C2

City of Tracy
Water System Master Plan Update


UR 5
(Bright)
UR 7
(Bright/Castro)
Rocking Horse
Mountain View Annexation
Kagehiro
Industrial Areas
Avenues
SWC Valpico & Corral Hollow
Tracy Village
YOUNG CT
LYON CT
SAFFORD AV
COMPTON PL
MAGAZINE LN
GREYSTONE DR
BRITTANY WY
GOLDEN GATE DR
FRANK BLONDIN LN
FORTUNA LN
ALAMO CT
DIEGO CT
PEDRO LN
BIRCHWOOD CT
HARVEST LANDING CT
HARVEST LANDING LN
SCHULTE RD
BAYBERRY CT
BAYBERRY LN
PATRICK MCCAFFREY DR
CABANA LN
CLEMENTE LN
ABBOTT CT
GOLDEN LEAF LN
GIBRALTER LN
GIBRALTER CT
GREEN HAVEN DR
VENETO LN
ROBERT GABRIEL DR
BLACKSTONE DR
COLBY CT
MARIE ANGELA DR
CAROL ANN DR
MOCKING BIRD LN
HANDSTAND WY
DAISY LN
COTTAGEGROVE WY
REDBRIDGE RD
REMINGTON WY
HAMLET LN
ROWLAND CT
PERRY LN
MAIDEN CT
TIBURON CT
GOWAN DR
SAUSALITO WY
BELMONT LN
CASTLE HAVEN DR
NEW HAVEN DR
PARK HAVEN DR
FORECAST LN
MARIE ANTOINETTE LN
CARNEGIE DR
ELLIS AV
MIDWAY DR
TESLA CT
CARBONA CT
CORRAL HOLLOW RD
TRISLER CT
MOUNTAIN VIEW RD
PERSIMMON WY
HUMMINGBIRD WY
PERIWINKLE DR
CROCUS CT
MIMOSA CT
FOXGLOVE CT
PETUNIA WY
ALHAMBRA CT
GIBSON CT
KYLE DAYTON DR
BLUE JAY CT
CARDINAL ST
DOVE DR
HAFLA CT
LOTUS WY
CALHOUN CT
ELSIE WY
SCHAWLY WY
KRISTOFF CT
KAGEHIRO DR
LILAC WY
WOODBINE WY
MIA WY
PONDEROSA DR
AURORA ASTORGA DR
MITS WY
VALPICO RD
WILKINSON WY
CORNUCOPIA PL
SAVANNA DR
MEADOW LN
SYCAMORE PK
GARDEN CT
HOBOKEN DR
CAMBRIDGE PL
SPUR LINE RR
HIGHGATE LN
GLENCREEK DR
GLENPINE CT
HEIBORNE DR
MENAY DR
BRIGHTON DR
PARKSIDE DR
LARKSPUR DR
CANDLEWOOD DR
PLYMOUTH DR
ROBERT L SMITH DR
DOLORES LN
DOLORES CT
WEEPING WILLOW LN
KATHLEEN CT
SPRING CT
SUMMERTIME DR
GLACIER ST
TETON LN
WINTER LN
REEF CT
COLONIAL LN
COLONIAL CT
RAINIER CT
ZION CT
ARCHES CT
BRYCE WAY
LASSEN CT
WINTER CT
FAIRHAVEN CT
BLUESAGE CT
CLAREMONT CT
EDMONTON CT
YORKSHIRE LP
NEWCASTLE CT
EGRET DR
ALPINE WY
HENDERSON WY
MONUMENT DR
HAMPTON CT
TAHOE CT
EAGLE ST
PELICAN CT
HERON ST
COLUMBIA CT
KERN ST
PETRIG ST
ABINGDON WY
IBERIS WY
THAMES DR
WELLINGTON DR
ZOLA LN
CEDRUS DR
PROTINIA DR
IBERIS CT
WILLIAMS ST
WILLIAMS CT
HEMMINGWAY CT
SHAW CT
CHRISTY CT
STEINBECK WY
MANSFIELD CT
MANSFIELD ST
PICKFORD CT
CHAPLIN CT
LOMBARD CT
HEPBURN CT
HEPBURN ST
LONGFELLOW ST
MONROE ST
HARLOW ST
CURTIS ST
RUSSELL ST
MISSION CT
STAGS LEAP CT
CYPRESS DR
THICKET LN
THICKET CT
CALAFIA CT
BRIARWOOD CT
FIREFLY WY
LONE FOX CT
FOX CT
HUNTER TR
ALDEN GLEN DR
HICKORY AV
JUNIPER CT
AUTUMN LN
REDWOOD DR
DOUBLES CT
DOUBLE HOUSE WY
LAWN CT
CLAY CT
CENTRE COURT DR
SAMI CT
DAVENPORT LN
ROCKINGHAM WY
SEMERA CT
BALDWIN LN
BURLINGTON DR
HARVEST LN
DAVIS CUP CT
PECAN LN
DIVINE LN
RENOWN DR
LAURIANA LN
LIMEWOOD LN
TENNIS LN
TENNIS CT
DEFENDER LN
FAITH LN
ALAMO DR
DIEGO LN
BARCELONA DR
NABOR LN
CLARENCE BROMELL ST
BANFF CT
NOVA CT
TERRA CT
SUMMER LN
MESA CT
ANGORA CT
KEYS CT
KEYS WY
MORTON WY
FISHER CT
FISHER WY
RILEY CT
CROSS ROADS DR
MCDOWELL WY
JEFFERSON LN
GIRARD WY
MESQUITE CT
ALI CT
ADOBE LN
PEPPERWOOD CT
LOPEZ LN
PAGODA CT
PLUM LN
EDGEWOOD CT
PORTICO CT
PORTICO LN
CHANELLE CT
ADAMS LN
CABANA CT
GOLDEN LEAF CT
ABBOTT LN
ADARE LN
TYLER CT
WHITNEY CT
VENETO CT
ANN GABRIEL LN
ASHLEY LN
TRACEY CT
MARELL JOSEPH DR
RAY WISE LN
MT DIABLO AV
MT DIABLO CT
RODELL WY
APPALOSA WY
PALOMINO DR
PALOMINO CT
GOTLAND CT
LOURENCE DR
MORRIS PHELPS DR
MT OSO AV
CECILIO WY
COVEY LN
NATALIE LN
MARGARITE ST
GIANELLI ST
ALBERT CT
PHILLIP CT
MACHADO CT
VICTORIA ST
HENRY CT
FERDINAND ST
CHARLES ST
JAMES CT
MARY CT
REGINA DR
CENTRAL AV
EARL WY
ASHLAND DR
SILKWOOD LN
MAGNOLIA LN
AMBER CT
DEERWOOD LN
BLOSSOMWOOD LN
VILLAGE DR
BRISTLECONE DR
SCOTCH PINE CT
WILLOW CREEK DR
LOMA VERDE DR
RIALTO CT
TRACY BL
MONTE VISTA WY
BUENA TIERRA DR
FREEDOM CT
LIBERTY CT
JUSTICE CT
CONSTITUTION WY
ISABELLA ST
TRADITIONS CT
TRADITIONS ST
WEST CT
SOUTH CT
SOUTH ST
FIRST ST
SECOND ST
THIRD ST
FOURTH ST
SIXTH ST
WEST ST
A ST
B ST
C ST
0
500
1,000
Scale in Feet
A1
A2
B1
B2
B3
B4
C1
C2
C4
D1
D2
D3
E1
E2
580
5
Proposed Buildout Program Facilities
Buildout Pressure Regulating Station
Buildout Pressure Reducing Valve
Buildout Booster Pump Station
Buildout Groundwater Well
Buildout Storage Tank
Proposed Buildout Clearwell
Buildout System Pipeline
Proposed Buildout Non-Program (NP) Facilities
Buildout NP Pressure Reducing Valve
Buildout NP Booster Pump Station
Buildout NP Storage Tank
Buildout NP Pipeline
Proposed 2025 Program Facilities
2025 Pressure Reducing Valve
2025 System Pipeline
2025 Pipeline CIP
Proposed 2025 Non-Program Facilities
2025 Non-Program Pipeline
Existing System Facilities
Existing Pressure Regulating Station
Existing Pressure Reducing Valve
Existing Booster Pump Station
Existing Groundwater Well
Existing Storage Tank
Existing System Pipeline
Proposed Existing System Pipeline CIP
TRACY
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Figure F-C3
City of Tracy
Water System Master Plan Update
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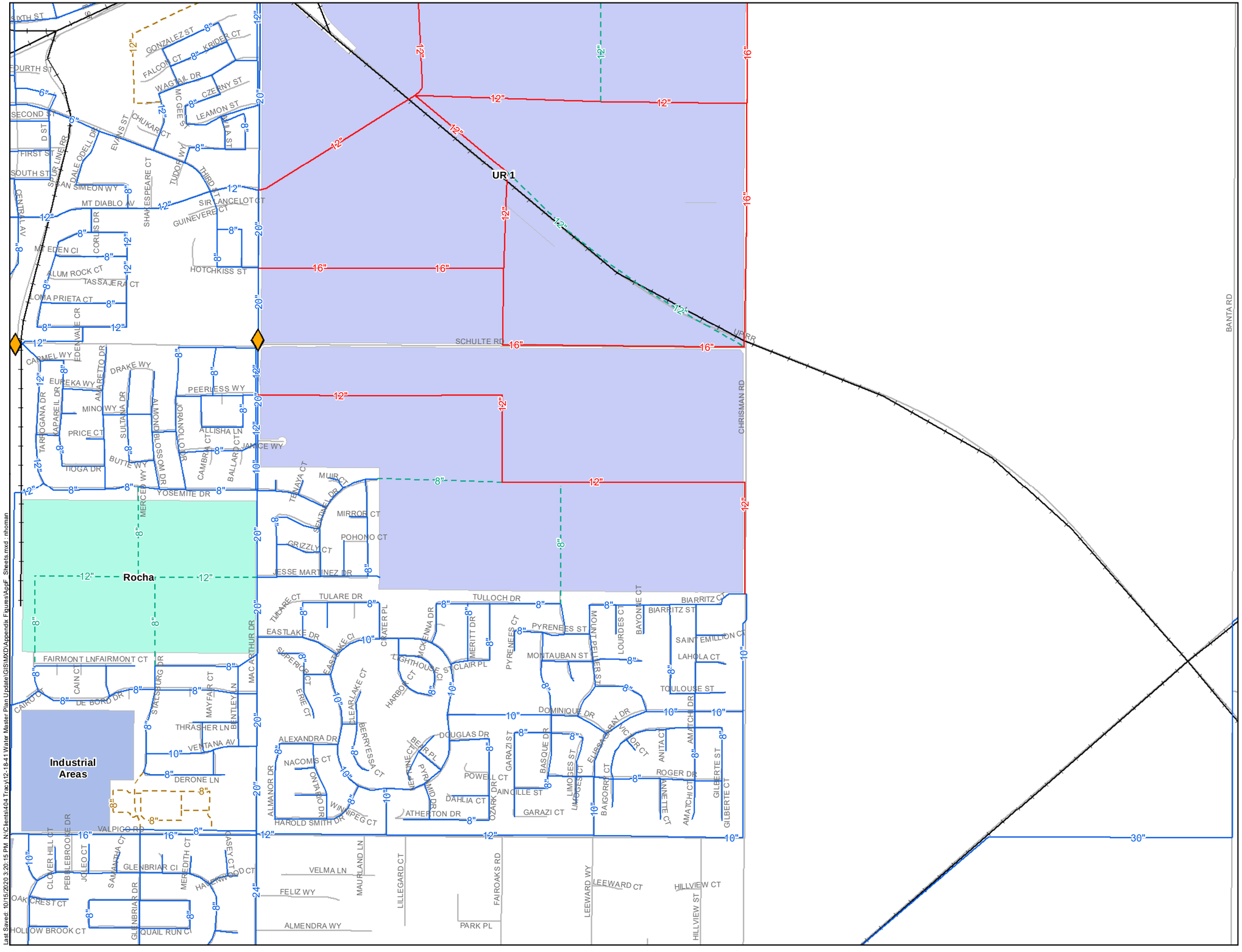
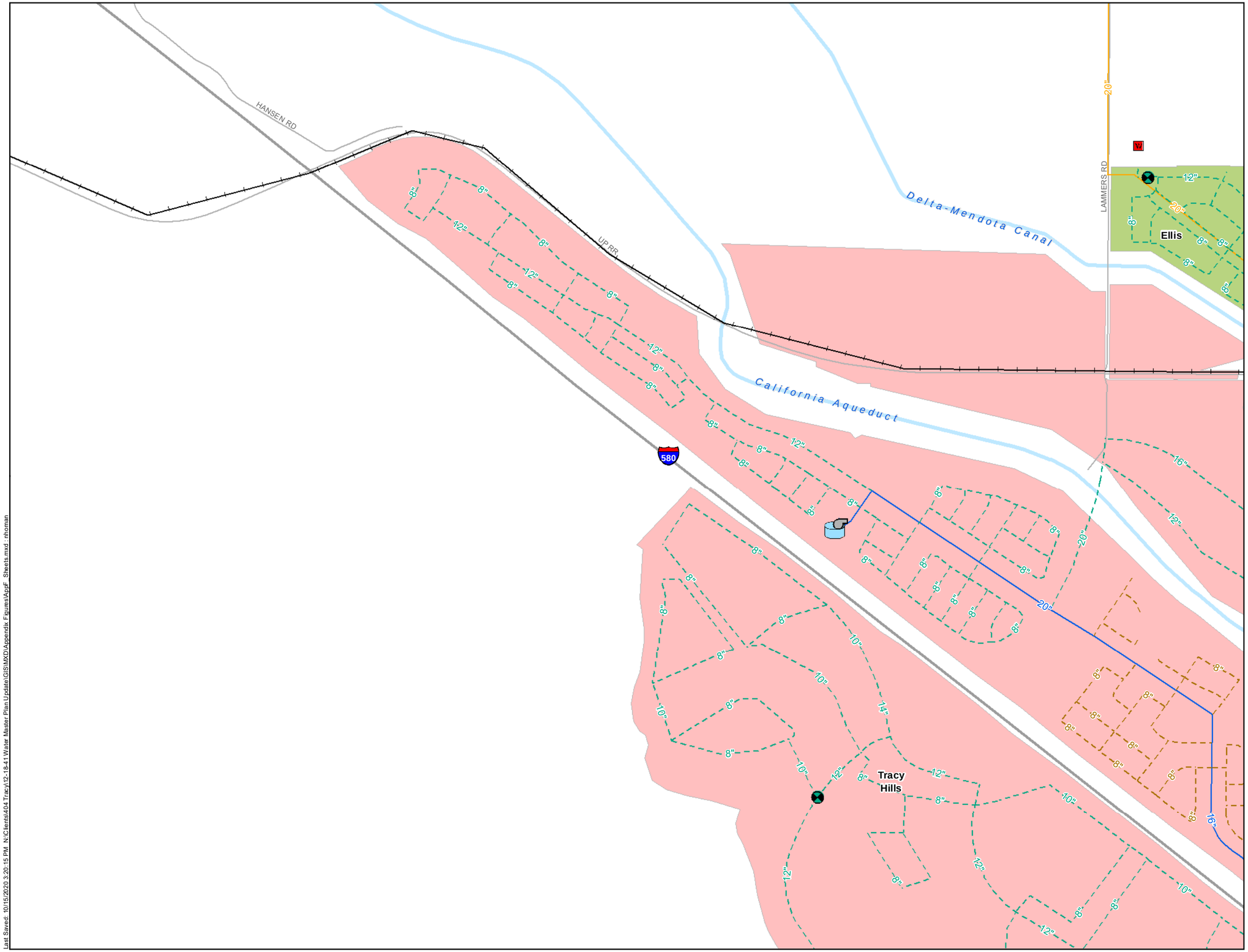


Figure F-C4

City of Tracy
Water System Master Plan Update

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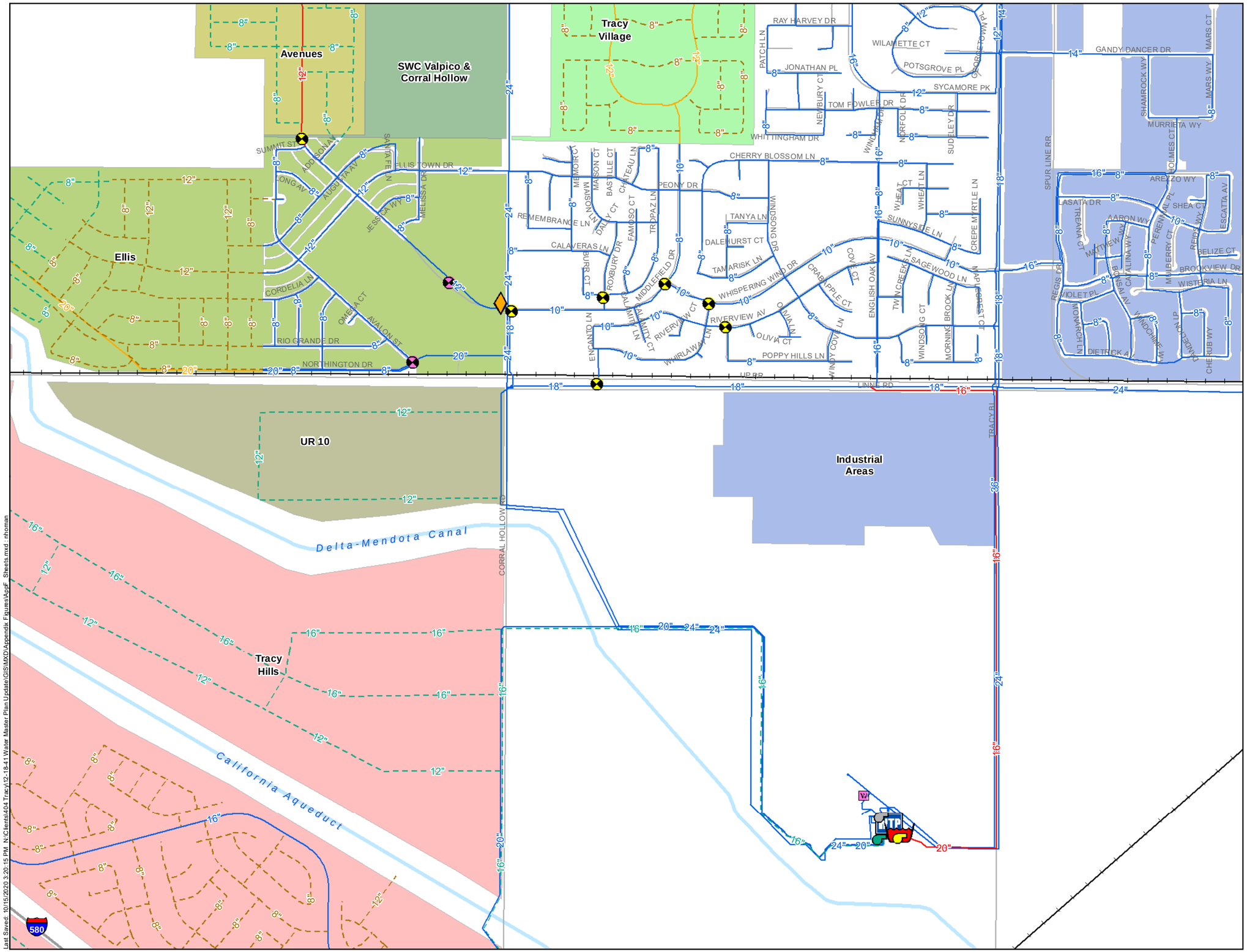
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TRACY

WEST YOST ASSOCIATES

Figure F-D1

City of Tracy
Water System Master Plan Update



Proposed Buildout Program Facilities

- Buildout Pressure Regulating Station
- Buildout Pressure Reducing Valve
- Buildout Booster Pump Station
- Buildout Groundwater Well
- Buildout Storage Tank
- Proposed Buildout Clearwell
- Buildout System Pipeline

Proposed Buildout Non-Program (NP) Facilities

- Buildout NP Pressure Reducing Valve
- Buildout NP Booster Pump Station
- Buildout NP Storage Tank
- Buildout NP Pipeline

Proposed 2025 Program Facilities

- 2025 Pressure Reducing Valve
- 2025 System Pipeline
- 2025 Pipeline CIP

Proposed 2025 Non-Program Facilities

- 2025 Non-Program Pipeline

Existing System Facilities

- Existing Pressure Regulating Station
- Existing Pressure Reducing Valve
- Existing Booster Pump Station
- Existing Groundwater Well
- Existing Storage Tank
- Existing System Pipeline
- Proposed Existing System Pipeline CIP

TRACY

WEST YOST ASSOCIATES

Figure F-D2

City of Tracy
Water System Master Plan Update

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Proposed Buildout Program Facilities

- Buildout Pressure Regulating Station
- Buildout Pressure Reducing Valve
- Buildout Booster Pump Station
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- Buildout Storage Tank
- Proposed Buildout Clearwell
- Buildout System Pipeline

Proposed Buildout Non-Program (NP) Facilities

- Buildout NP Pressure Reducing Valve
- Buildout NP Booster Pump Station
- Buildout NP Storage Tank
- Buildout NP Pipeline

Proposed 2025 Program Facilities

- 2025 Pressure Reducing Valve
- 2025 System Pipeline
- 2025 Pipeline CIP

Proposed 2025 Non-Program Facilities

- 2025 Non-Program Pipeline

Existing System Facilities

- Existing Pressure Regulating Station
- Existing Pressure Reducing Valve
- Existing Booster Pump Station
- Existing Groundwater Well
- Existing Storage Tank
- Existing System Pipeline
- Proposed Existing System Pipeline CIP

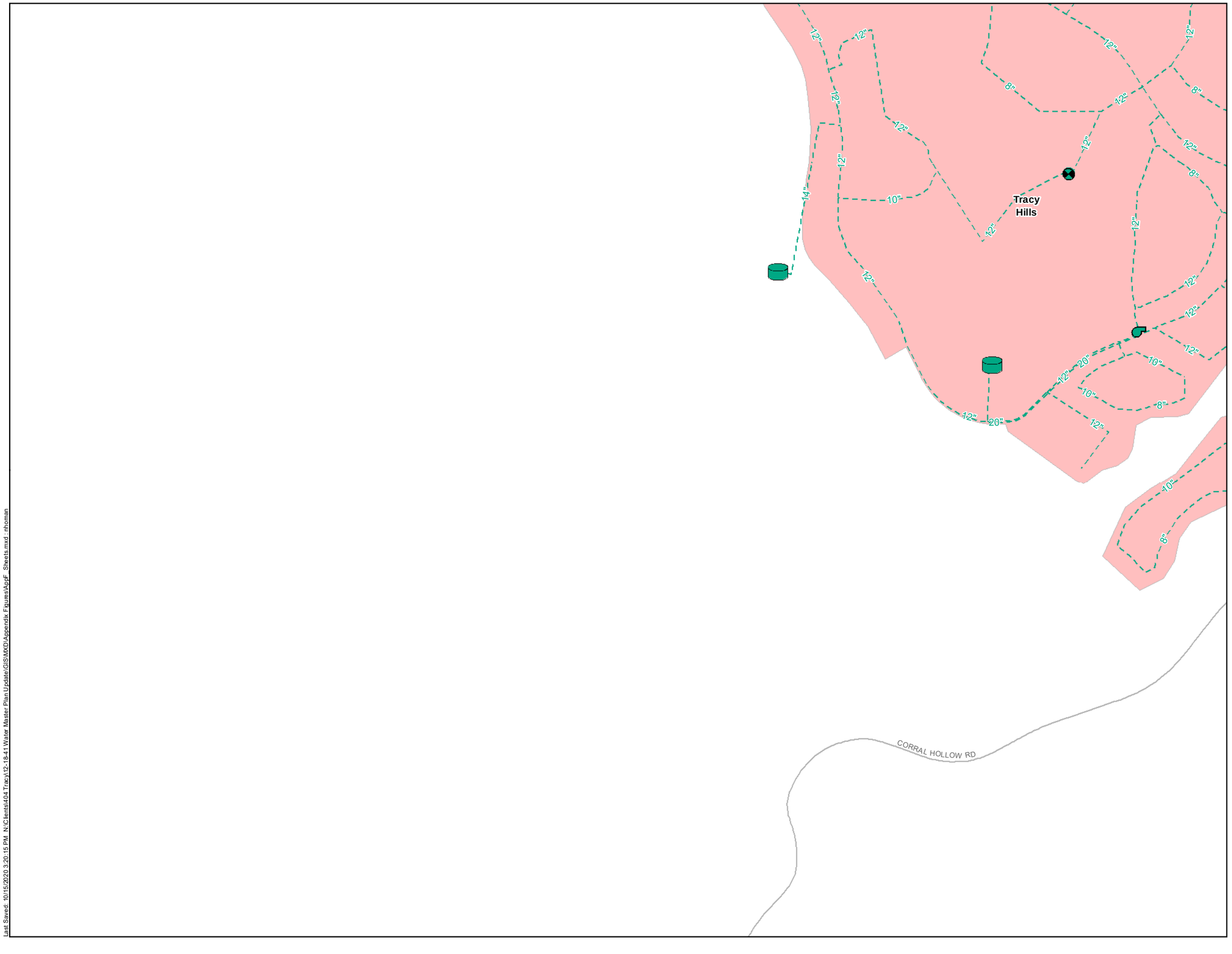
TRACY

WEST YOST ASSOCIATES

Figure F-D3

City of Tracy
Water System Master Plan Update

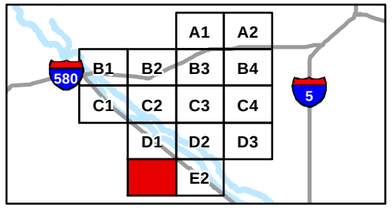
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N

0 500 1,000

Scale in Feet



Proposed Buildout Program Facilities

- Buildout Pressure Regulating Station
- Buildout Pressure Reducing Valve
- Buildout Booster Pump Station
- Buildout Groundwater Well
- Buildout Storage Tank
- Proposed Buildout Clearwell
- Buildout System Pipeline

Proposed Buildout Non-Program (NP) Facilities

- Buildout NP Pressure Reducing Valve
- Buildout NP Booster Pump Station
- Buildout NP Storage Tank
- Buildout NP Pipeline

Proposed 2025 Program Facilities

- 2025 Pressure Reducing Valve
- 2025 System Pipeline
- 2025 Pipeline CIP

Proposed 2025 Non-Program Facilities

- 2025 Non-Program Pipeline

Existing System Facilities

- Existing Pressure Regulating Station
- Existing Pressure Reducing Valve
- Existing Booster Pump Station
- Existing Groundwater Well
- Existing Storage Tank
- Existing System Pipeline
- Proposed Existing System Pipeline CIP

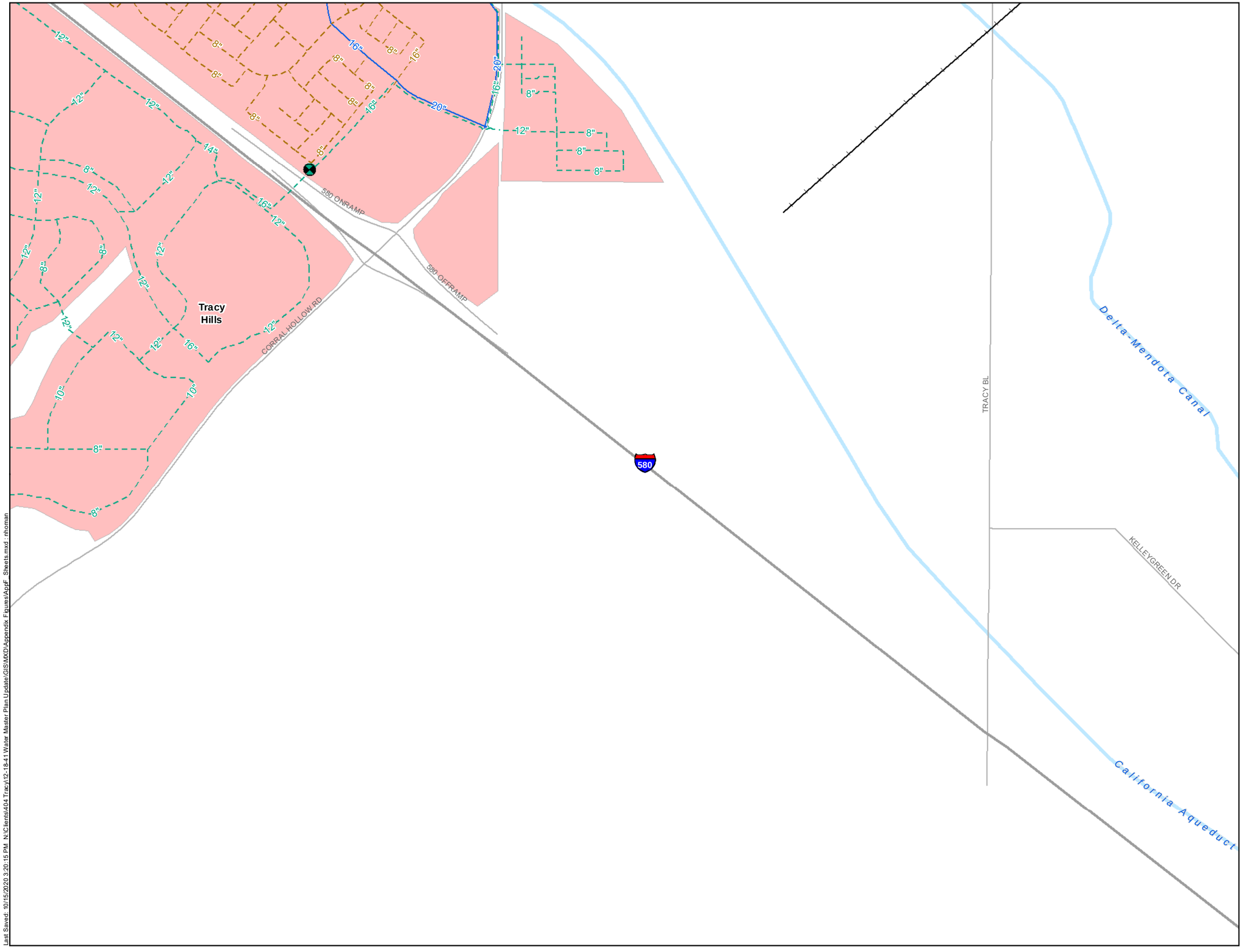
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Figure F-E1

City of Tracy
Water System Master Plan Update

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Proposed Buildout Program Facilities

- Buildout Pressure Regulating Station
- Buildout Pressure Reducing Valve
- Buildout Booster Pump Station
- Buildout Groundwater Well
- Buildout Storage Tank
- Proposed Buildout Clearwell
- Buildout System Pipeline

Proposed Buildout Non-Program (NP) Facilities

- Buildout NP Pressure Reducing Valve
- Buildout NP Booster Pump Station
- Buildout NP Storage Tank
- Buildout NP Pipeline

Proposed 2025 Program Facilities

- 2025 Pressure Reducing Valve
- 2025 System Pipeline
- 2025 Pipeline CIP

Proposed 2025 Non-Program Facilities

- 2025 Non-Program Pipeline

Existing System Facilities

- Existing Pressure Regulating Station
- Existing Pressure Reducing Valve
- Existing Booster Pump Station
- Existing Groundwater Well
- Existing Storage Tank
- Existing System Pipeline
- Proposed Existing System Pipeline CIP

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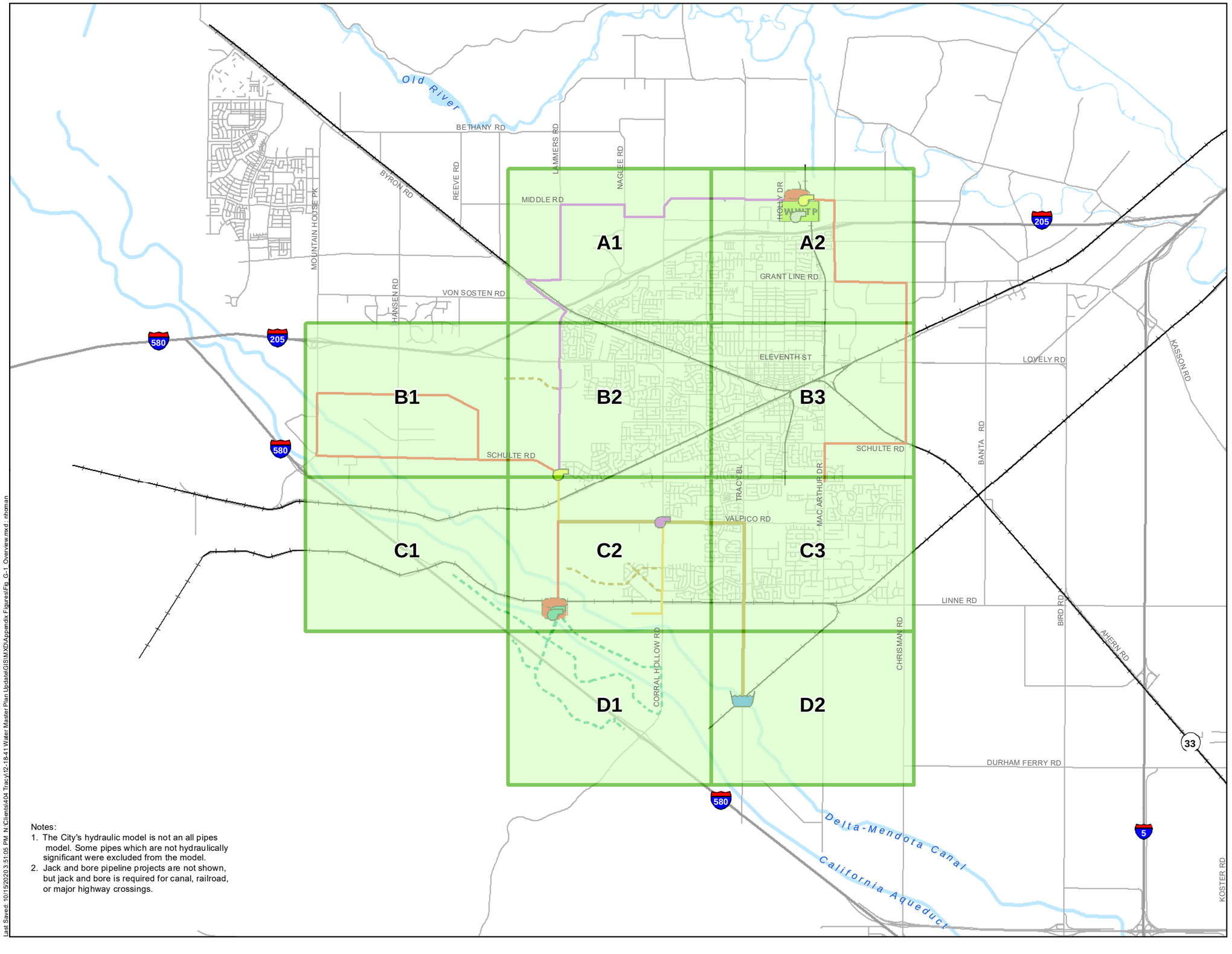
Figure F-E2

City of Tracy
Water System Master Plan Update

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APPENDIX G

Proposed Future Recycled Water System Facility Improvements



Notes:
1. The City's hydraulic model is not an all pipes model. Some pipes which are not hydraulically significant were excluded from the model.
2. Jack and bore pipeline projects are not shown, but jack and bore is required for canal, railroad, or major highway crossings.

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N

0 3,000 6,000

Scale in Feet

Symbology

Proposed Buildout Program Facilities

- Buildout Booster Pump Station
- Buildout Storage Tank
- Buildout System Pipeline

Proposed Buildout Non-Program (NP) Facilities

- Buildout NP Booster Pump Station
- Buildout NP Pipeline

Proposed 2025 Program Facilities

- 2025 Booster Pump Station
- 2025 System Pipeline
- Delta-Mendota Canal Pipeline
- Delta-Mendota Canal Discharge Point

Proposed 2025 Non-Program Facilities

- 2025 Non-Program Pipeline

Existing System Facilities

- Existing Booster Pump Station
- WWTP Wastewater Treatment Plant
- Existing System Pipeline

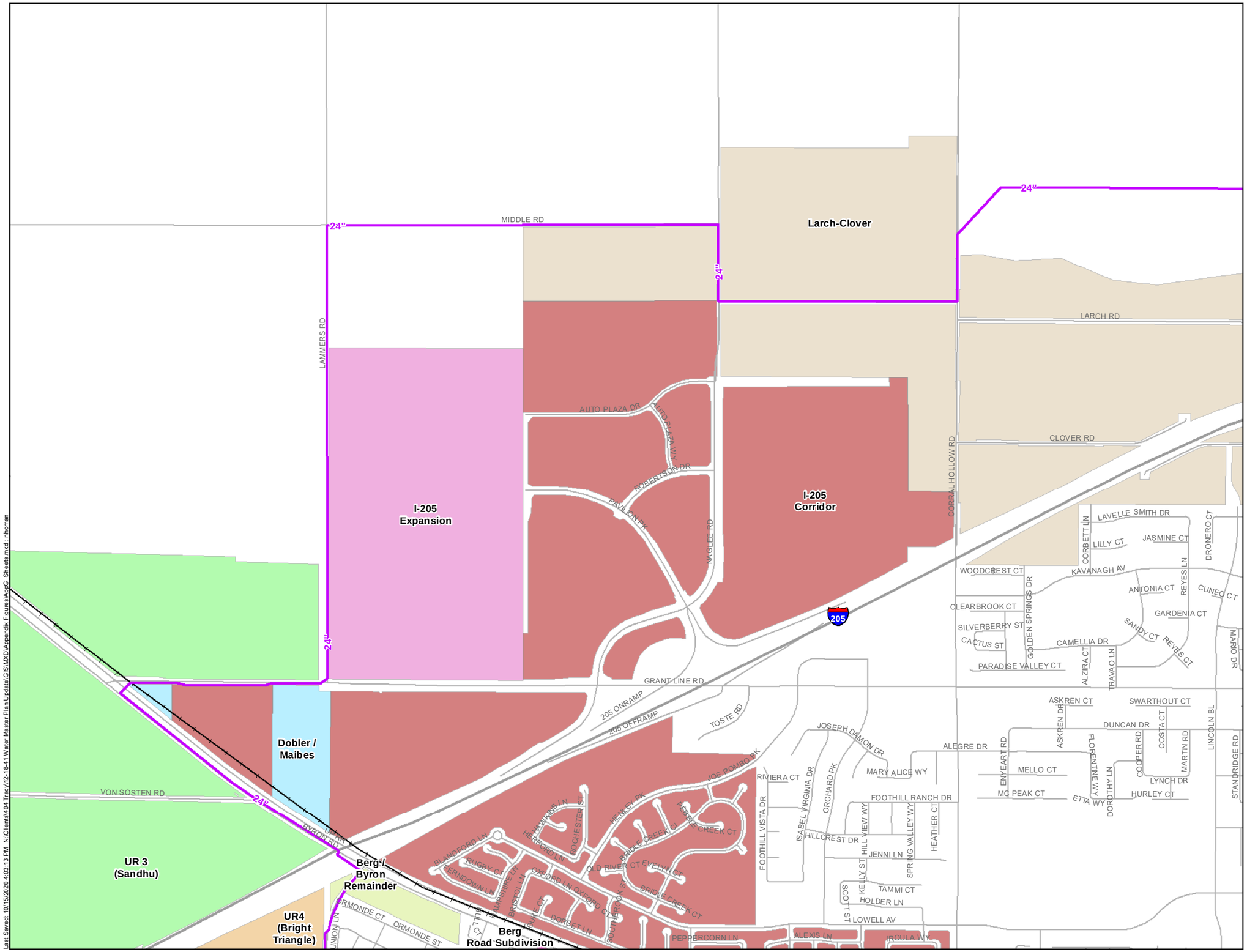
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Figure G-1

Proposed Future Recycled Water System Facility Improvements

City of Tracy
Water System Master Plan Update

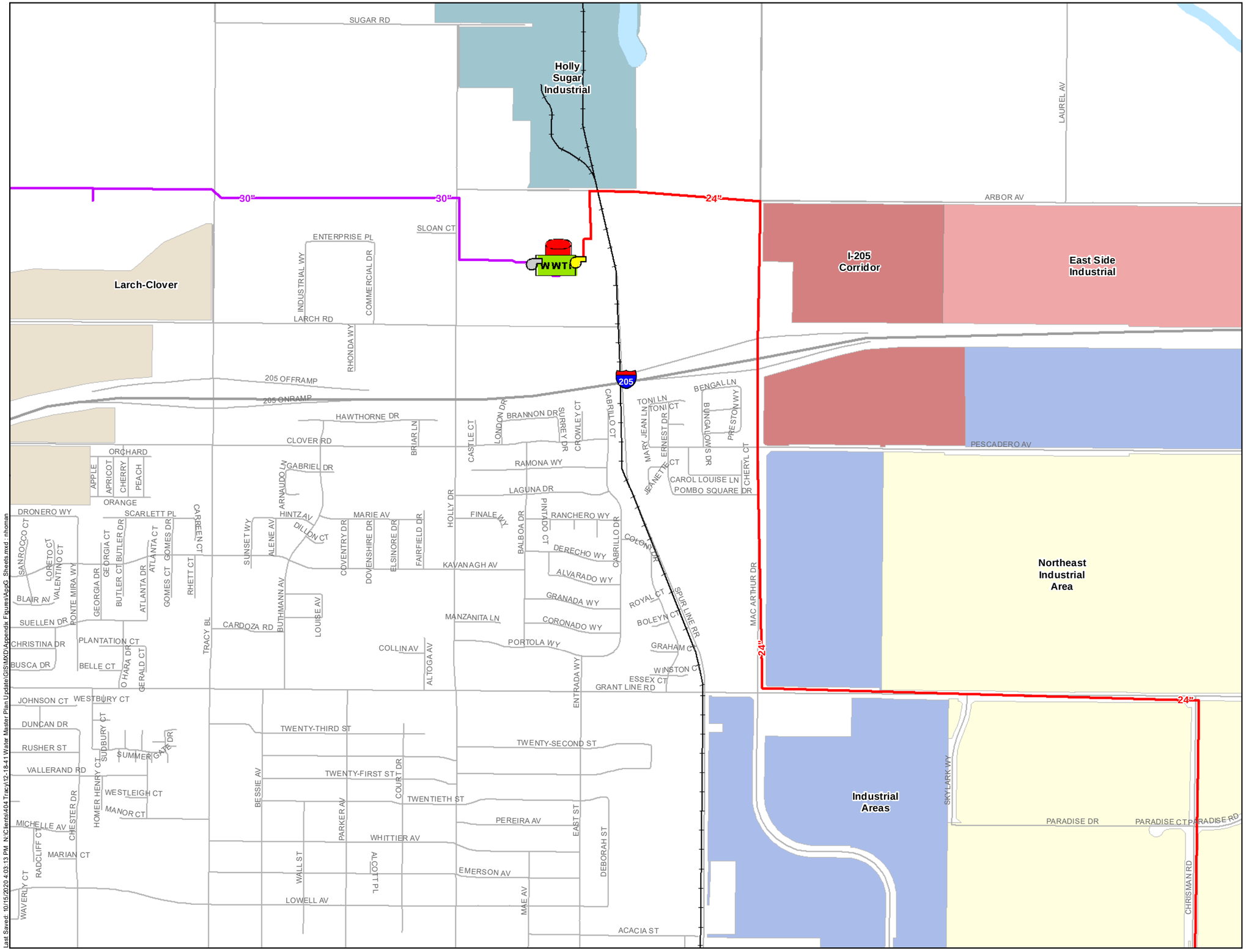


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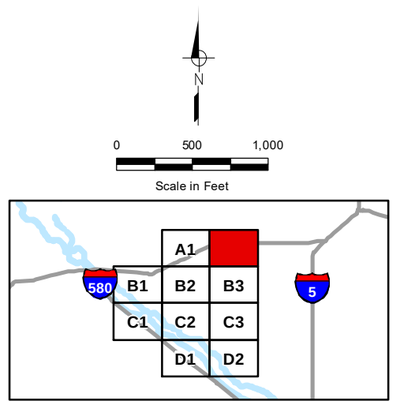
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Figure G-A1

City of Tracy
Water System Master Plan Update



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Symbology

Proposed Buildout Program Facilities

- Buildout Booster Pump Station
- Buildout Storage Tank
- Buildout System Pipeline

Proposed Buildout Non-Program (NP) Facilities

- Buildout NP Booster Pump Station
- Buildout NP Pipeline

Proposed 2025 Program Facilities

- 2025 Booster Pump Station
- 2025 System Pipeline
- Delta-Mendota Canal Pipeline
- Delta-Mendota Canal Discharge Point

Proposed 2025 Non-Program Facilities

- 2025 Non-Program Pipeline

Existing System Facilities

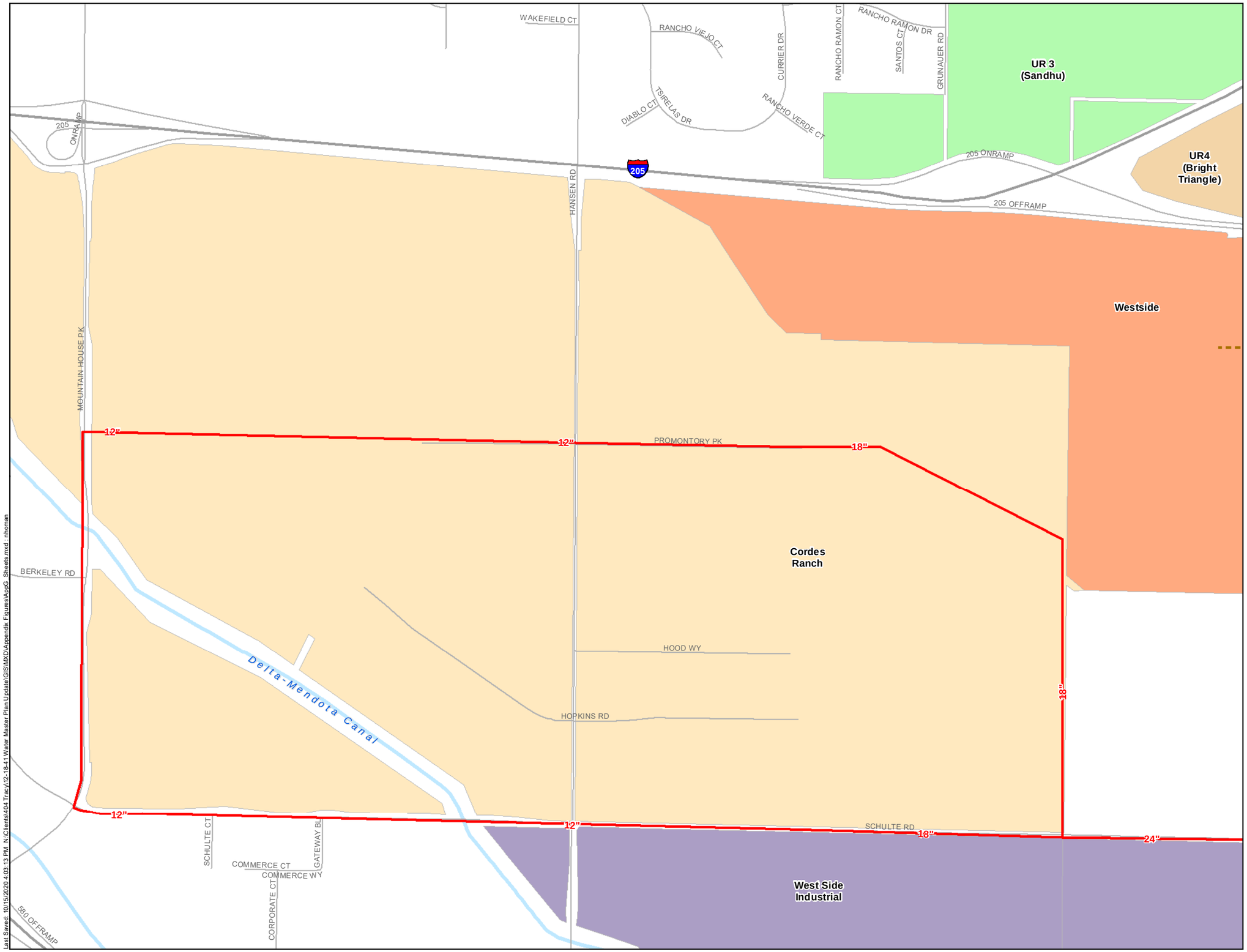
- Existing Booster Pump Station
- WWTP Wastewater Treatment Plant
- Existing System Pipeline

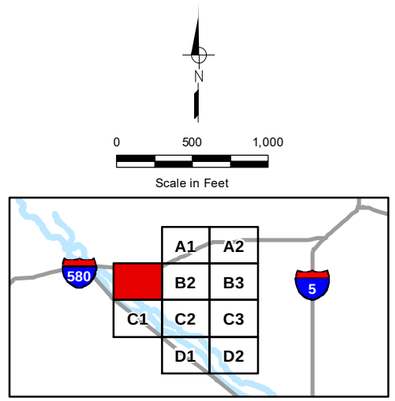
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Figure G-A2

City of Tracy
Water System Master Plan Update





Symbology

Proposed Buildout Program Facilities

- Buildout Booster Pump Station
- Buildout Storage Tank
- Buildout System Pipeline

Proposed Buildout Non-Program (NP) Facilities

- Buildout NP Booster Pump Station
- Buildout NP Pipeline

Proposed 2025 Program Facilities

- 2025 Booster Pump Station
- 2025 System Pipeline
- Delta-Mendota Canal Pipeline
- Delta-Mendota Canal Discharge Point

Proposed 2025 Non-Program Facilities

- 2025 Non-Program Pipeline

Existing System Facilities

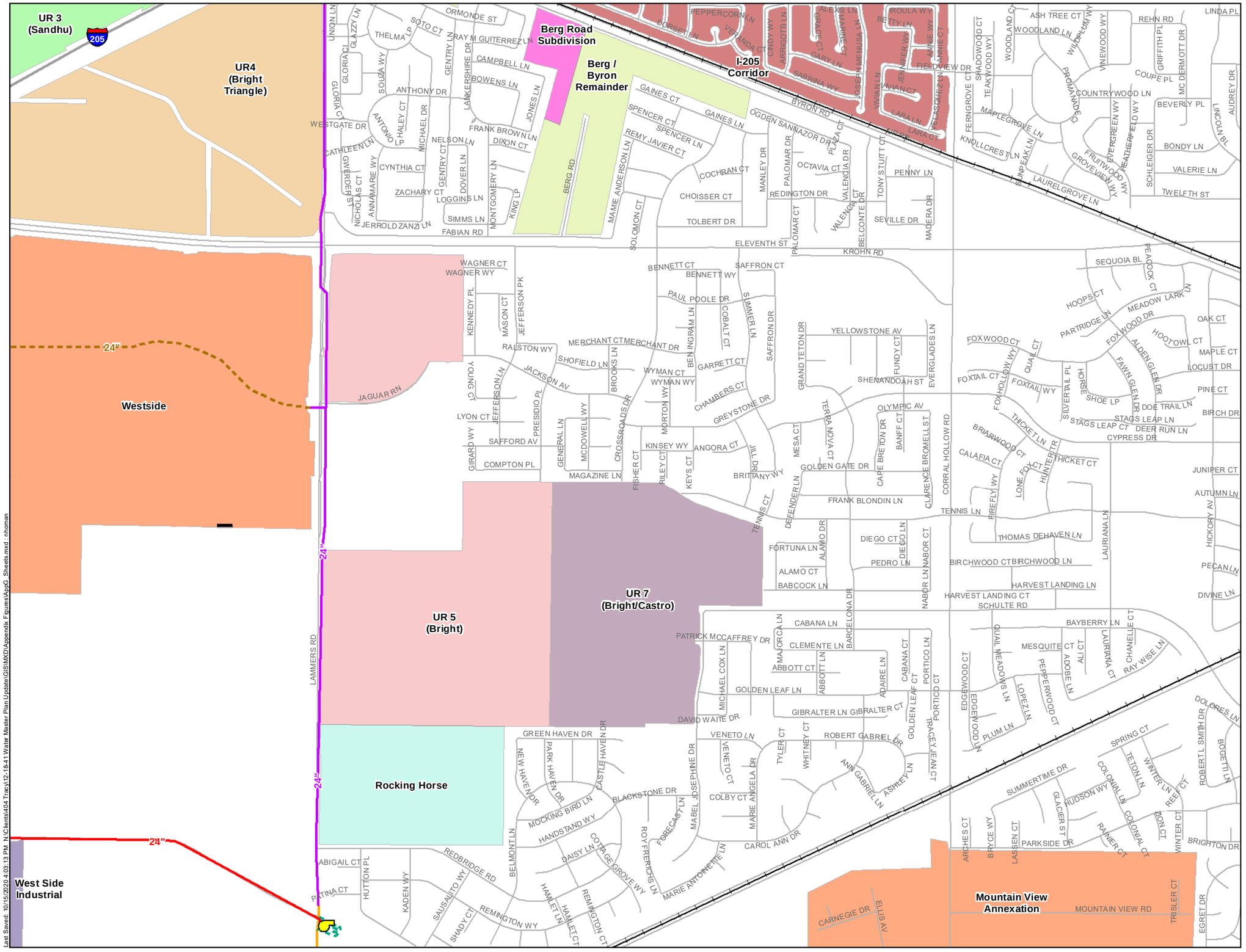
- Existing Booster Pump Station
- WWTP Wastewater Treatment Plant
- Existing System Pipeline

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Figure G-B1

City of Tracy
Water System Master Plan Update



Symbology

Proposed Buildout Program Facilities

- Buildout Booster Pump Station
- Buildout Storage Tank
- Buildout System Pipeline

Proposed Buildout Non-Program (NP) Facilities

- Buildout NP Booster Pump Station
- Buildout NP Pipeline

Proposed 2025 Program Facilities

- 2025 Booster Pump Station
- 2025 System Pipeline
- Delta-Mendota Canal Pipeline
- Delta-Mendota Canal Discharge Point

Proposed 2025 Non-Program Facilities

- 2025 Non-Program Pipeline

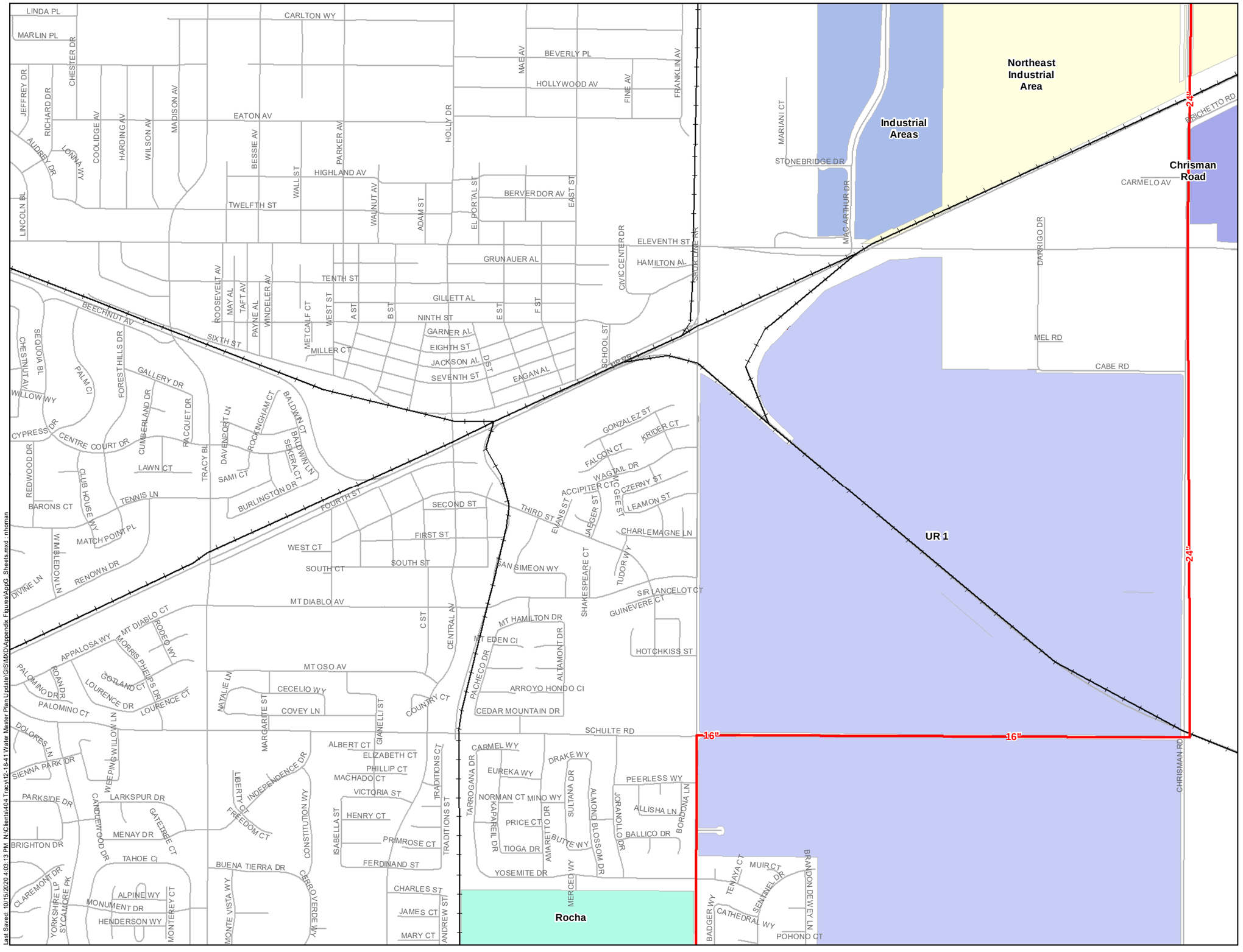
Existing System Facilities

- Existing Booster Pump Station
- WWTP Wastewater Treatment Plant
- Existing System Pipeline

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Figure G-B2

City of Tracy
Water System Master Plan Update



Symbology

Proposed Buildout Program Facilities

- Buildout Booster Pump Station
- Buildout Storage Tank
- Buildout System Pipeline

Proposed Buildout Non-Program (NP) Facilities

- Buildout NP Booster Pump Station
- Buildout NP Pipeline

Proposed 2025 Program Facilities

- 2025 Booster Pump Station
- 2025 System Pipeline
- Delta-Mendota Canal Pipeline
- Delta-Mendota Canal Discharge Point

Proposed 2025 Non-Program Facilities

- 2025 Non-Program Pipeline

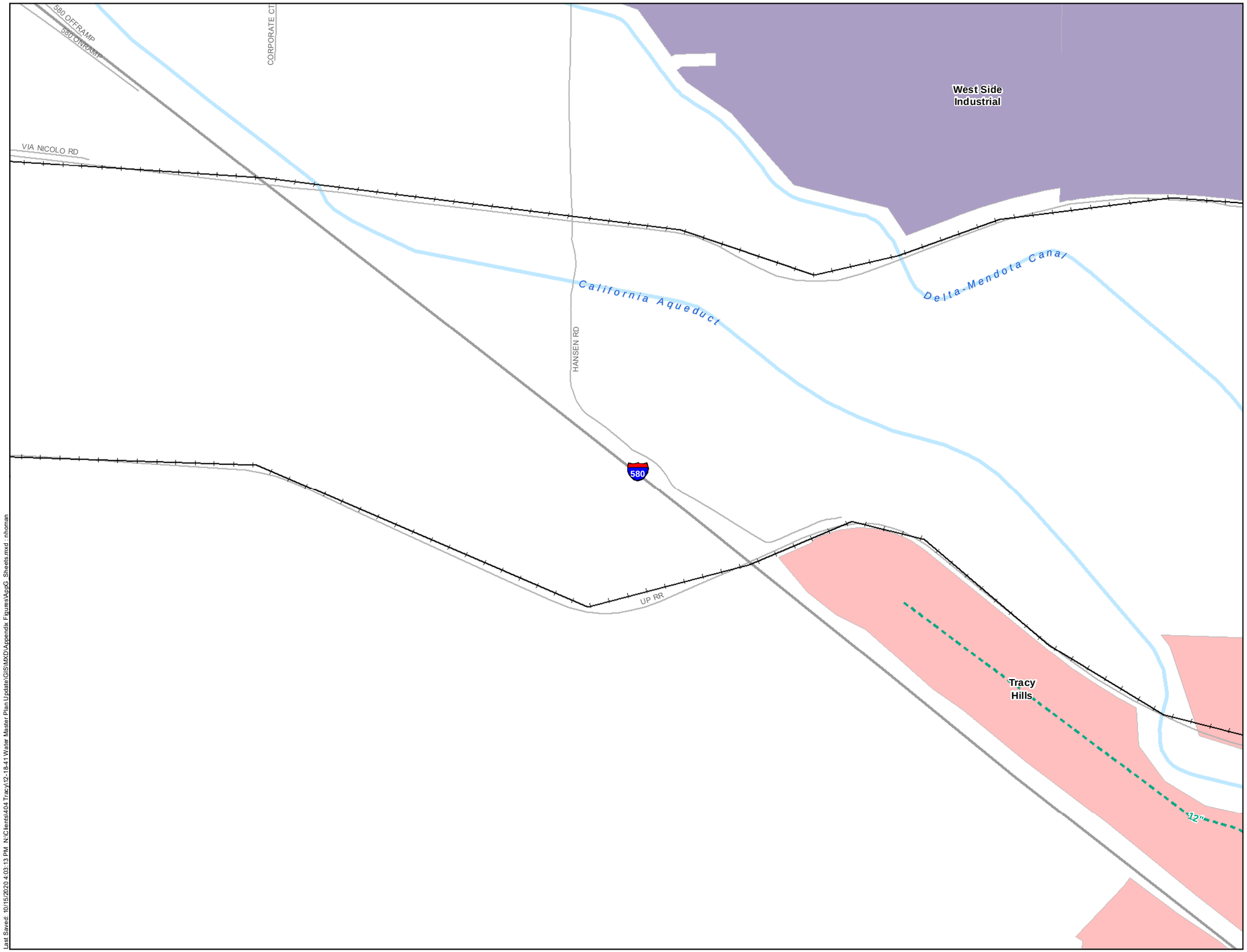
Existing System Facilities

- Existing Booster Pump Station
- WWTP Wastewater Treatment Plant
- Existing System Pipeline

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Figure G-B3

City of Tracy
Water System Master Plan Update



Symbology

Proposed Buildout Program Facilities

- Buildout Booster Pump Station
- Buildout Storage Tank
- Buildout System Pipeline

Proposed Buildout Non-Program (NP) Facilities

- Buildout NP Booster Pump Station
- Buildout NP Pipeline

Proposed 2025 Program Facilities

- 2025 Booster Pump Station
- 2025 System Pipeline
- Delta-Mendota Canal Pipeline
- Delta-Mendota Canal Discharge Point

Proposed 2025 Non-Program Facilities

- 2025 Non-Program Pipeline

Existing System Facilities

- Existing Booster Pump Station
- WWTP Wastewater Treatment Plant
- Existing System Pipeline

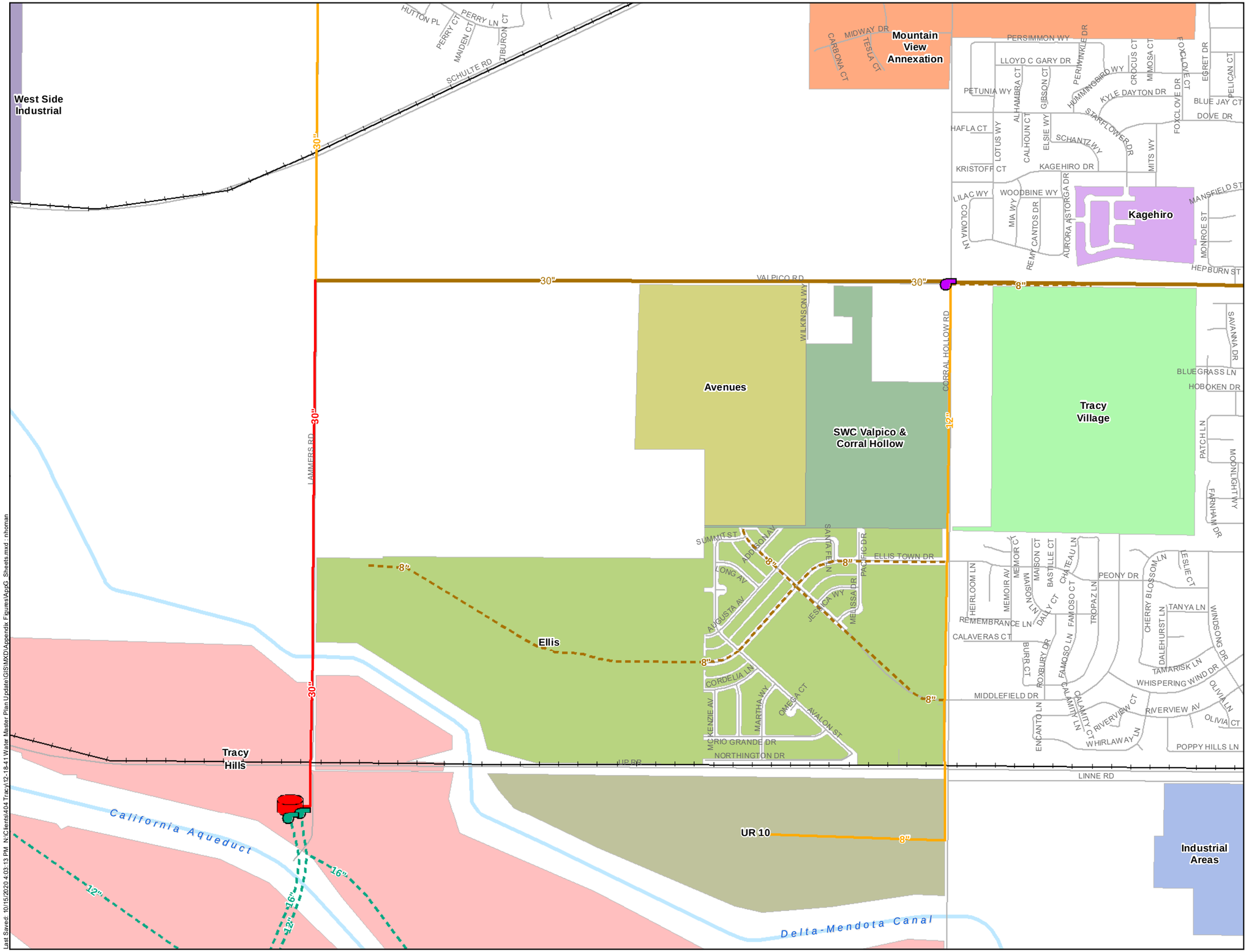
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Figure G-C1

City of Tracy
Water System Master Plan Update

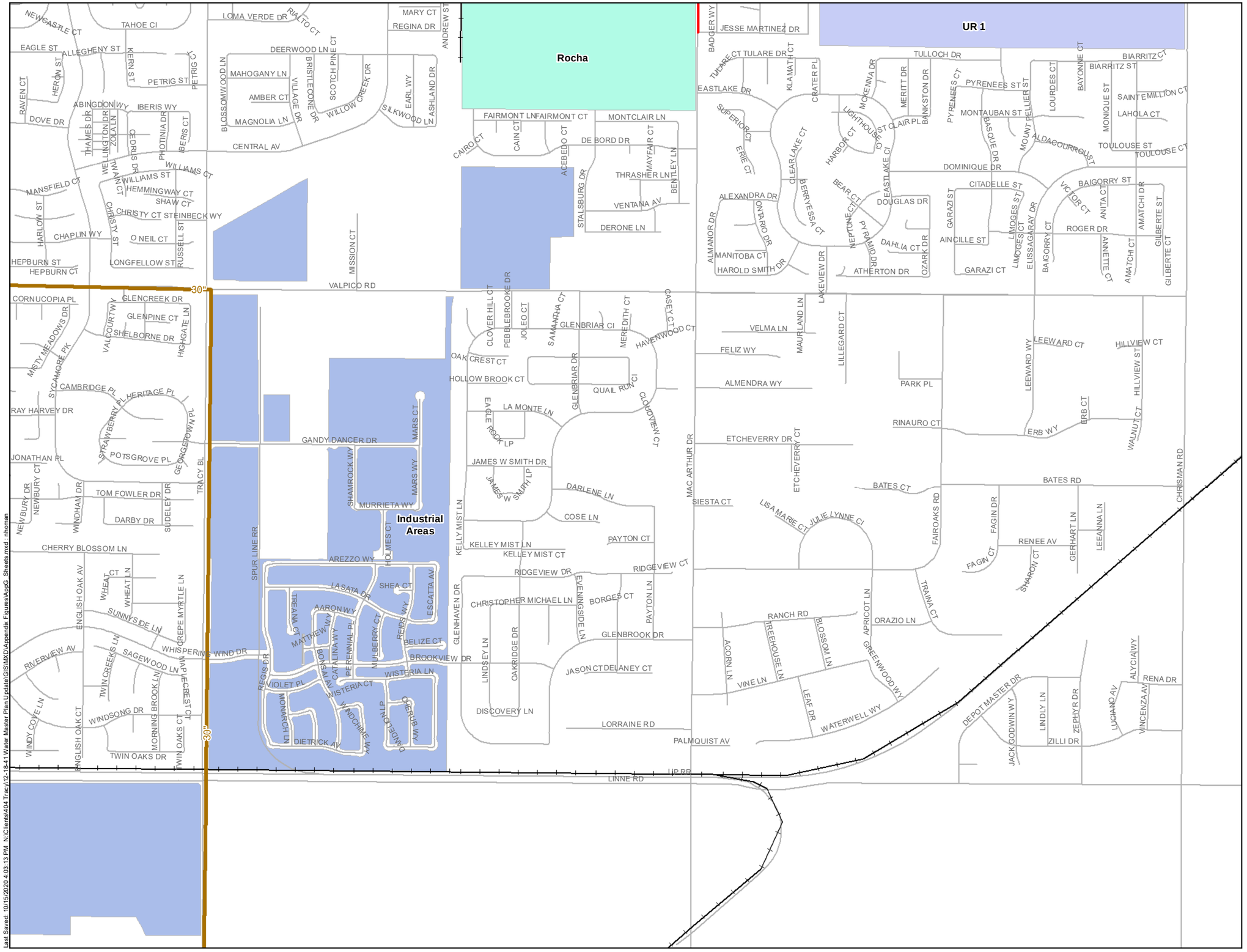
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Figure G-C2

City of Tracy
Water System Master Plan Update



Symbology

Proposed Buildout Program Facilities

- Buildout Booster Pump Station
- Buildout Storage Tank
- Buildout System Pipeline

Proposed Buildout Non-Program (NP) Facilities

- Buildout NP Booster Pump Station
- Buildout NP Pipeline

Proposed 2025 Program Facilities

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- Delta-Mendota Canal Discharge Point

Proposed 2025 Non-Program Facilities

- 2025 Non-Program Pipeline

Existing System Facilities

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- WWTP Wastewater Treatment Plant
- Existing System Pipeline

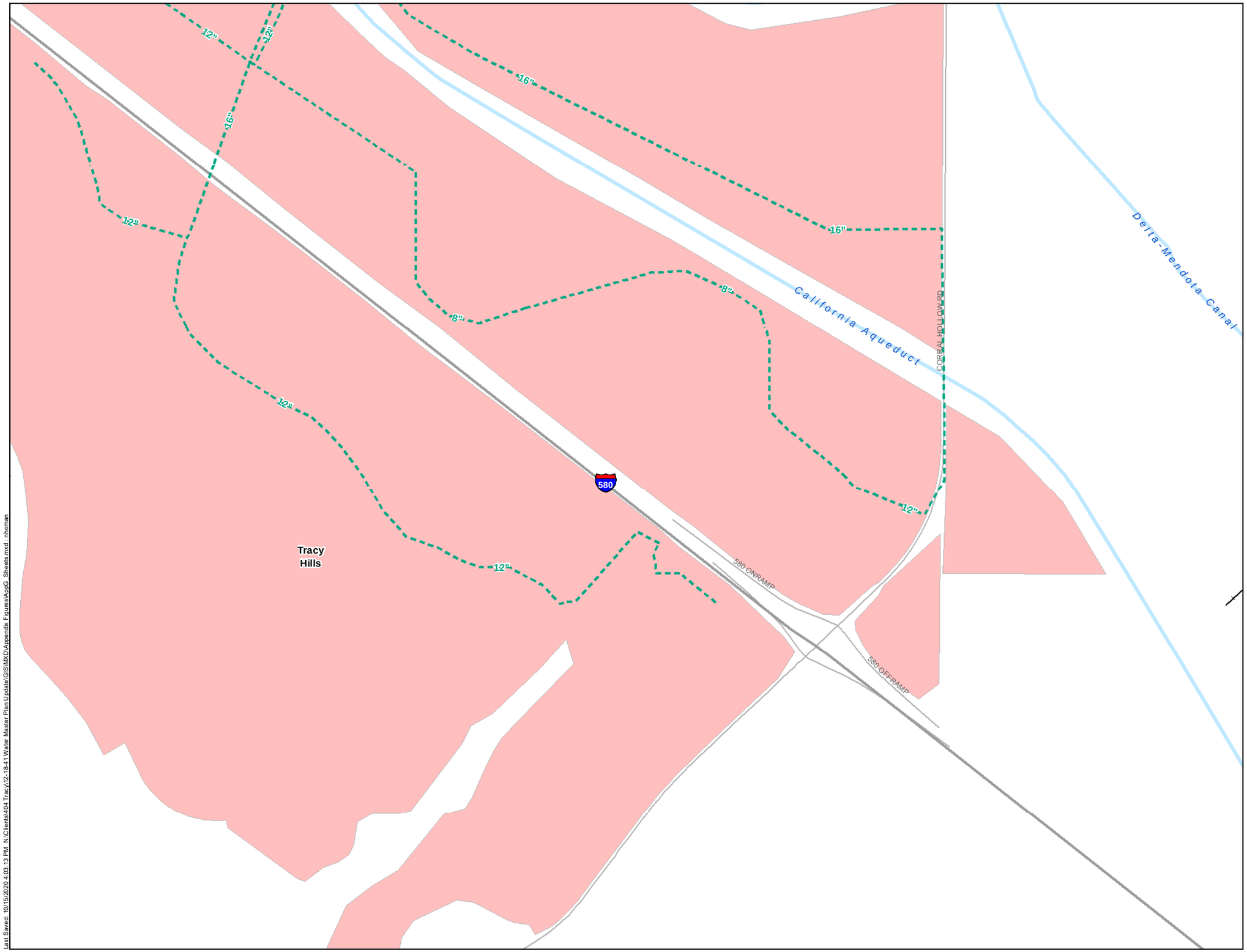
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Figure G-C3

City of Tracy
Water System Master Plan Update

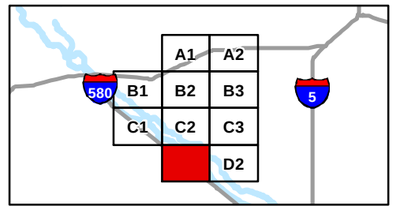
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0 500 1,000

Scale in Feet



Symbology

Proposed Buildout Program Facilities

- Buildout Booster Pump Station
- Buildout Storage Tank
- Buildout System Pipeline

Proposed Buildout Non-Program (NP) Facilities

- Buildout NP Booster Pump Station
- Buildout NP Pipeline

Proposed 2025 Program Facilities

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- Delta-Mendota Canal Discharge Point

Proposed 2025 Non-Program Facilities

- 2025 Non-Program Pipeline

Existing System Facilities

- Existing Booster Pump Station
- WWTP Wastewater Treatment Plant
- Existing System Pipeline

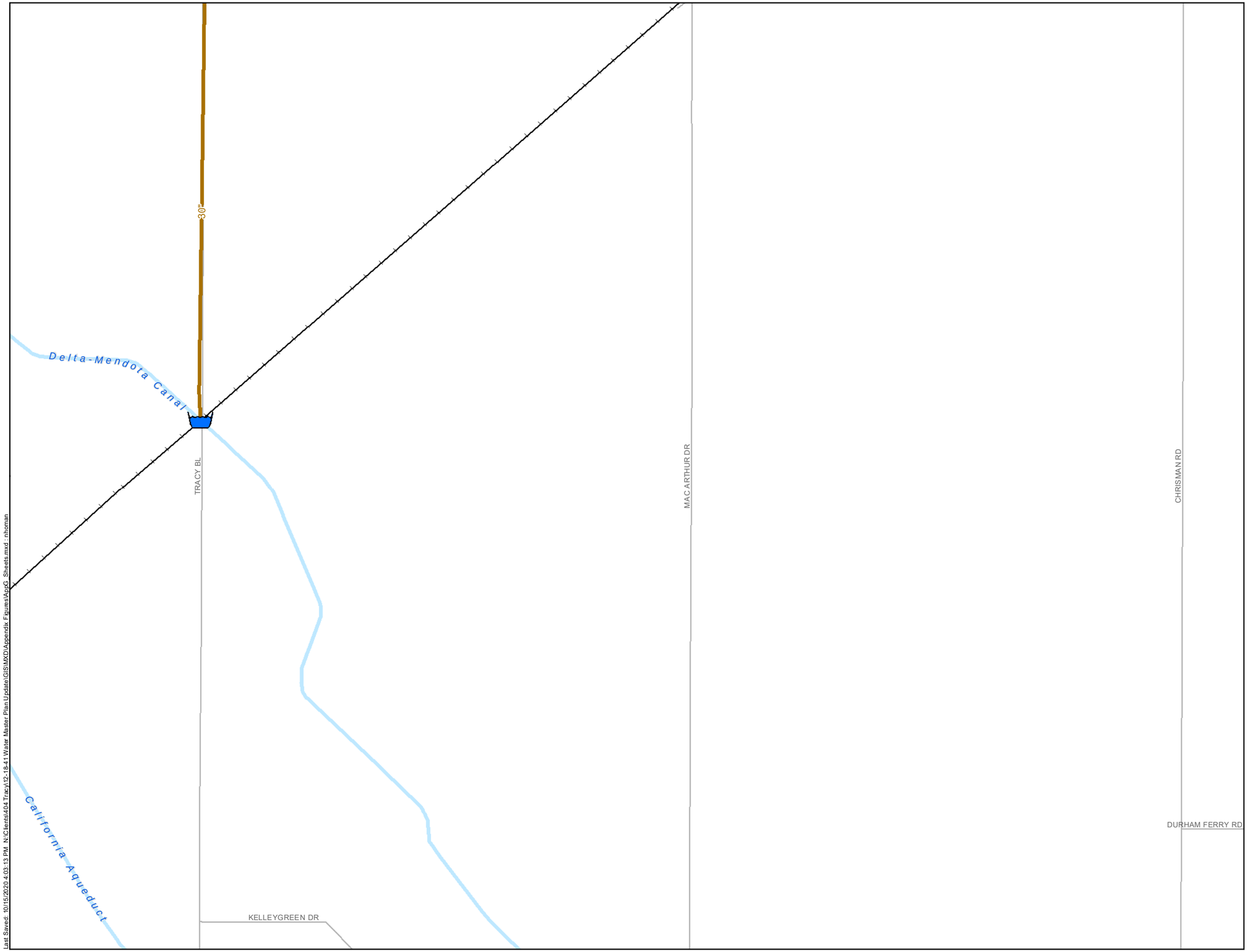
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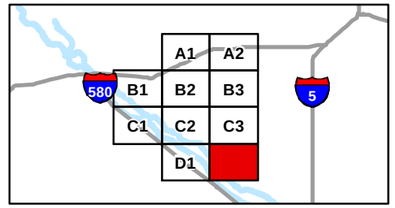
Figure G-D1

City of Tracy
Water System Master Plan Update

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Symbology

Proposed Buildout Program Facilities

- Buildout Booster Pump Station
- Buildout Storage Tank
- Buildout System Pipeline

Proposed Buildout Non-Program (NP) Facilities

- Buildout NP Booster Pump Station
- Buildout NP Pipeline

Proposed 2025 Program Facilities

- 2025 Booster Pump Station
- 2025 System Pipeline
- Delta-Mendota Canal Pipeline
- Delta-Mendota Canal Discharge Point

Proposed 2025 Non-Program Facilities

- 2025 Non-Program Pipeline

Existing System Facilities

- Existing Booster Pump Station
- WWTP Wastewater Treatment Plant
- Existing System Pipeline

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Figure G-D2

City of Tracy
Water System Master Plan Update



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Program Management Impact Fee

City of Tracy
Master Plan Area

June 2025

Prepared for:

TRACY

Prepared by:

Harris & Associates

1401 Willow Pass Road, Suite 500
Concord, CA 94520
(925) 827-4900

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Figure 1: City of Tracy Fee Program Areas 9

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EXECUTIVE SUMMARY AND INTRODUCTORY SECTIONS

INTRODUCTION

The City of Tracy (City) is located in the Central Valley and is the second most populated city in San Joaquin County (County). The City spans an area of about 26 miles within a triangle formed by Interstate 205 to the north, Interstate 580 to the southwest, and Interstate 5 to the east. The City is located near both fertile and infertile agricultural lands, due to a region of hills west of Tracy. The City is a railroad town that came from the mid-19th century construction.

The City was founded in 1878 and incorporated as a city in 1910. The City of Tracy grew rapidly and prospered as the center of an agricultural area, even when larger railroad operations began to decline in the 1950s. Competition with trucking and automobiles resulted in widespread railroad restructuring. The City has its origins associated with the Central Pacific Railroad, which ran from Sacramento through Stockton to the San Francisco Bay area. The City's ties to the agriculture industry allowed for steady growth in early to mid-20th century but growth accelerated starting in the 1980's as the City served as an extended bedroom community to the San Francisco, Oakland, and Silicon Valley metropolitan areas.

The City is part of the San Jose-San Francisco-Oakland, California Combined Statistical Area, an extension of the Bay Area. At the time of the 2020 U.S. Census, the City population was 93,000. The California Department of Finance estimates that as of January 1, 2023, the City population is 95,615, incorporating the 2020 Census benchmark.

As the resident population and non-resident employment in the City increase, there exists a correlating rise in the demand for public infrastructure and services to support the increased demand on the City. California's Assembly Bill 1600 (AB 1600) adopted in 1987 and codified as California Government Code Section 66000 et. seq., allows the City to impose Development Impact Fees on new development within the City. Development Impact Fees (DIFs) are one-time charges on new development that is collected and used by the City to cover the cost of capital facilities, vehicles, and equipment that are required to serve new growth.

The goal of the City is to develop a fee program that achieves the funding objectives required to fund facilities identified in the master plans, balances fee levels with desired economic growth, and complies with the legal requirements of Assembly Bill 1600 (AB 1600) and Assembly Bill 602 (AB 602).

In 2012, the City of Tracy adopted the master plans that form the basis of the City's current Master Plan Fee Program. Following the adoption of these master plans, impact fee nexus studies were adopted to form the following fees that make up the Fee Program: Traffic, Water, Recycled Water, Wastewater, Parks, Public Safety, Public Facilities, and Strom Drainage. Each of these adopted

fees included a 5% program management component. The Public Safety Fee was updated in August 2019 to reflect revised cost estimates and service coverage areas as well as split the Public Safety Fee into four separate fee components: Fire, Police, Communication Facilities, and Program Administration. In the years since, the City has applied an annual Engineering News Record (ENR) Construction Cost Index (CCI) increases to the fees but has not completed a comprehensive update.

The City hired consultants to prepare updates to the City's various Master Plans. The following Master Plans were adopted on April 16, 2024: Water Master Plan, Public Safety Master Plan, and Public Facilities Master Plan. The Parks Master Plan was adopted in August 2022. Along with these adopted Master Plans, the City intends to update the associated development impact fees soon after to reflect the updated Master Plans. As part of the fee update, the City is removing the Program Management portion from the individual fee components and creating a standalone Program Management Fee. The Transportation, Wastewater, and Storm Drain Master Plan impact fees will be updated shortly thereafter.

The City, with assistance from consultants, oversees the implementation and administration of the Master Plan Fee Program to be consistent with the requirements of the Mitigation Fee Act. For all Master Plan fees, a program management fee component is included to fund the costs for the City's management and ongoing fee program administration, collection, updates, and reporting. This includes costs associated with City staff and consultant time to support the program. Industry standard ranges from three to six percent (3-6%) for the administrative component of a development fee program. The City has historically collected a five percent (5%) administrative charge on each fee, included as a soft cost mark-up within the total fee. Administratively, the five percent (5%) charge per fee has been onerous to account for throughout the numerous fee components within the Master Plan Fee Program. Thus, the purpose of this Nexus Study is to extract the program management fee portion from each of the Master Plan Fees and create a separate Program Management Fee that will be collected as a single standalone fee and deposited into a separate fund for ease of administration. The administrative functions of the Program Management Fund include, but are not limited to, the following:

- Annual fee adjustments
- Annual fee reporting
- Additional fee reporting every five years
- Application and tracking of fee credits and reimbursements
- Posting of nexus studies and fee schedules on the City's website
- Periodic nexus study updates
- Staff and consultant time related to fee preparation, collection, tracking, and administration

NEXUS STUDY

Purpose

The fees within the Master Plan Fee Program Area are as follows:

- Traffic
- Water
- Recycled Water
- Parks
- Public Safety
- Public Facilities
- Wastewater
- Storm Drainage

The City has worked with numerous consultants to update the Master Plan Fee Program by updating master plans and nexus studies. The following Master Plans were adopted on April 16, 2024: Water Master Plan, Public Safety Master Plan, and Public Facilities Master Plan. The Parks Master Plan was adopted in August 2022. The Transportation Master Plan, Wastewater Master Plan, and Storm Drainage Master Plan are currently being updated and will be adopted following their completion.

All fees within the Master Plan Fee Program Area are subject to a program management fee. The program management fee component is currently being collected as a part of each individual fee. Programmatically, this has been difficult to administer. This Nexus Study establishes a separate standalone Program Management Fee calculated as 5% of the total fees.

Due to the timing of Master Plan impact fee updates, the new standalone Program Management Fee will only apply to the Master Plan Fees that were updated to reflect the extraction of the 5% program Management Fee. In time, all Master Plan Fees will be updated to reflect the separation of the Program Management component of the fee.

This report is designed to satisfy AB 1600 Nexus requirements, AB 602 guidance, and provide the necessary technical analysis to support the adoption of the fee. The Program Management Fee will be effective 60 days after the City's final action establishing and authorizing collection.

Updated Fee

Table ES-1 displays the proposed Program Management Impact Fee percentage for each land use.

Table ES-1: Summary of Proposed Program Management Impact Fee

Land Use	Program Management Fee
Residential (per SF)	
Single Family Residential	5% of Master Plan Fees
Multi-Family Residential (Attached 2-4)	5% of Master Plan Fees
High Density Residential (Attached 4+)	5% of Master Plan Fees
Non-Residential (per 1,000 Bldg SF)	
Office	5% of Master Plan Fees
Commercial	5% of Master Plan Fees
Industrial	5% of Master Plan Fees

Proposed Fee Comparison with Existing Fee

The City currently collects a 5% Program Management Fee and is proposing to continue to collect the same 5%. The only change is that instead of collecting the fee as part of each of the individual fees, the City will collect a separate Program Management Fee so that fee collection is less onerous. The Program Management Fee changes in proportion to the other fees since it is calculated as a percentage of the Master Plan fees.

NEXUS REQUIREMENT SUMMARY

AB 1600 was enacted by the State of California in 1987 creating the Mitigation Fee Act - Section 66000 et seq. of the Government Code. The Mitigation Fee Act requires that all public agencies satisfy the following requirements when establishing, increasing, or imposing a fee as a condition of approval of a development project:

1. Identify the purpose of the fee.
2. Identify the use to which the fee is to be put. If the use is financing public facilities, the facilities shall be identified.
3. Determine how there is a reasonable relationship between the fees use and the type of development project on which the fee is imposed.
4. Determine how there is a reasonable relationship between the need for the public facility and the type of development project on which the fee is imposed.
5. Determine how there is a reasonable relationship between the amount of the fee and the cost of the public facility or portion of the public facility attributable to the development on which the fee is imposed.

The purpose of this report is to demonstrate that the Program Management Fee complies with the Mitigation Fee Act.

ASSEMBLY BILL 602

Assembly Bill (AB) 602, enacted by the State of California in 2021, amended Sections 65940.1 and 66019 of, and added Section 66016.5 to the Government Code. AB 602 requires that if a local agency conducts and adopts an impact fee nexus study after January 1, 2022, the local agency shall follow all of the following standards and practices:

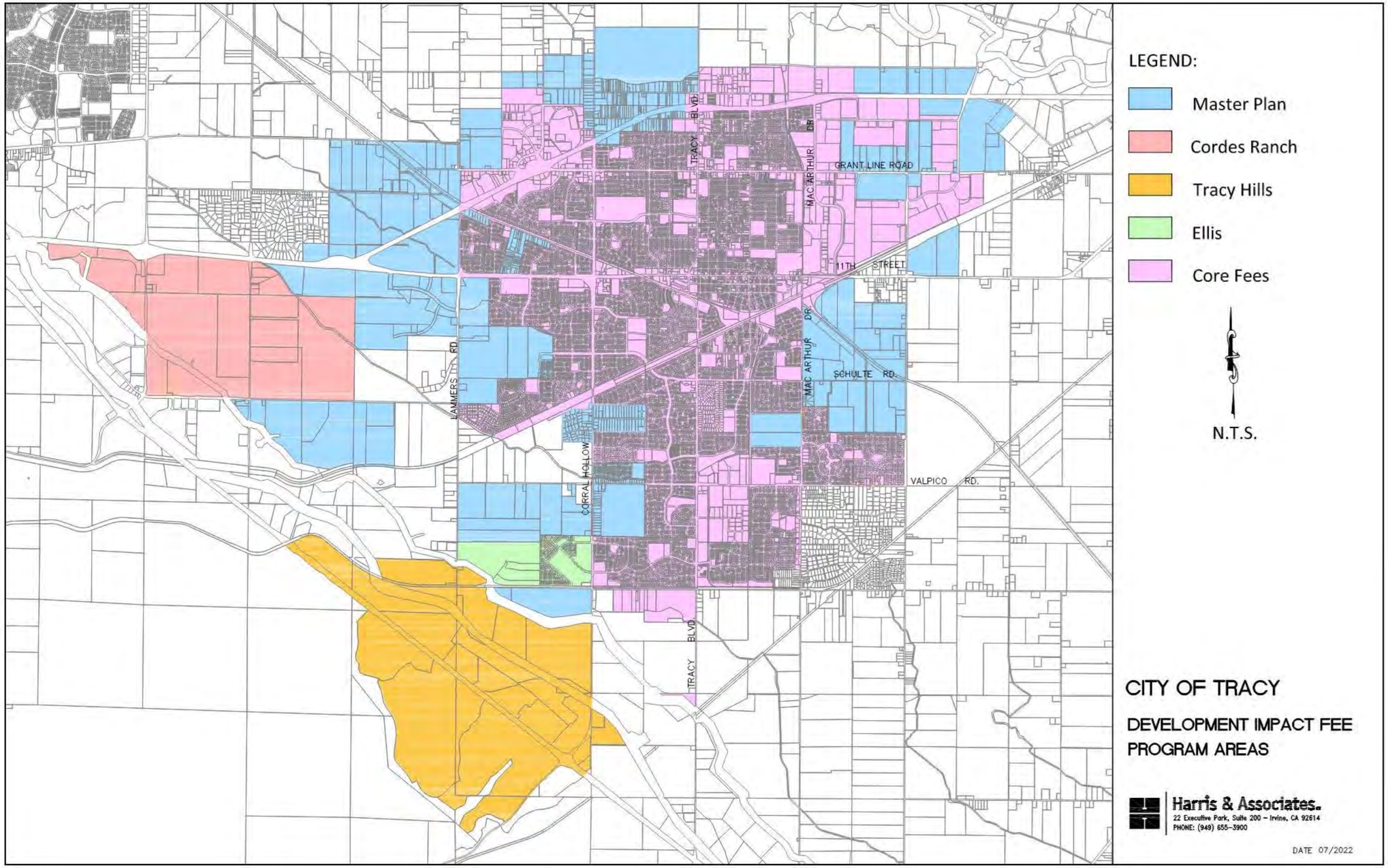
1. Before the adoption of an associated development fee, an impact fee nexus study shall be adopted.
2. When applicable, the nexus study shall identify the existing level of service for each public facility, identify the proposed new level of service, and include an explanation of why the new level of service is appropriate.
3. A nexus study shall include information that supports the local agency's actions, as required by subdivision (a) of Section 66001 of the Government Code.
4. If a nexus study supports the increase of an existing fee, the local agency shall review the assumptions of the nexus study supporting the original fee and evaluate the amount of fees collected under the original fee.
5. A nexus study adopted after July 1, 2022, shall calculate a fee imposed on a housing development project proportionately to the square footage of proposed units of the development. A local agency that imposes a fee proportionately to the square footage of the proposed units of the development shall be deemed to have used a valid method to establish a reasonable relationship between the fee charged and the burden posed by the development. A nexus study is not required to comply with the requirements to calculate a fee imposed on a housing development project proportionally to the square footage of the proposed units if the local agency makes the following findings:
    - An explanation as to why square footage is not appropriate metric to calculate fees imposed on housing development project.
    - An explanation that an alternative basis of calculating the fee bears a reasonable relationship between the fee charged and the burden posed by the development.
    - That other policies in the fee structure support smaller developments or otherwise ensure that smaller developments are not charged disproportionate fees.
6. Large jurisdictions shall adopt a capital improvement plan as a part of the nexus study.
7. All studies shall be adopted at a public hearing with at least 30 days' notice, and the local agency shall notify any member of the public that requests notice of intent to begin an impact fee nexus study of the date of the hearing.
8. Studies shall be updated at least every eight years, beginning on January 1, 2022.
9. The local agency may use the impact fee nexus study template developed by the Department of Housing and Community Development pursuant to Section 50466.5 of the Health and Safety Code.

This report demonstrates that the Program Management Fee complies with AB 602.

FEE PROGRAM AREA

Figure 1 shows the Master Plan Fee program area. Cordes Ranch and Tracy Hills are depicted in separate colors to differentiate that while they are generally subject to the Master Plan fees, they have agreements in place with the City that details their specific fees. The Core Fees program area has their own set of fees as outlined in the "Core Fees Development Impact Fee Study" adopted August 2021 and the Ellis program area has their own set of fees as outlined in the "Ellis Program Area Finance and Implementation Plan" adopted August 2013.

Figure 1: City of Tracy Fee Program Areas



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Section 1 PROGRAM MANAGEMENT FEE

BACKGROUND

The City, with assistance from consultants, oversees the implementation and administration of the Master Plan Fee Program, consistent with the requirements of the Mitigation Fee Act. AB 602, which came into effect on January 1, 2022, adds additional nexus study requirements. Furthermore, AB 1483, which became effective January 1, 2020, requires that public agencies make certain information available on their website, increasing the administrative responsibilities of the City.

The five percent (5%) Program Management Fee funds the costs of the City's management and ongoing fee program administration, collection, updates, and reporting. This includes costs associated with City staff and consultant time to support the program. City staff time includes one full time fee program administrator and half time of a management analyst in the finance department. Industry standard ranges from three to six percent (3-6%) for the administrative component of a development fee program. The City has historically collected program management as an additional soft cost mark-up equal to five percent (5%) of the construction cost of projects and then transferred this money to a separate fund account. This practice has been onerous to administer and therefore, the City desires to migrate to a separate five percent (5%) Program Management Fee.

The five percent (5%) administration component of the Master Plan Fee Program includes, but is not limited to, the following activities:

- Posting of nexus studies and fee schedules on City's Websites
- Annual fee adjustments
- Annual fee reporting
- Five-year fee reporting
- Application and tracking of fee credits/reimbursements.
- Periodic nexus study updates
- Staff and consultant time related to fee preparation, collection, tracking and administration.

For projects that are subject to only certain Master Plan fees, the Program Management Fee will be five percent (5%) of the Master Plan fees that are assessed on the project. For example, if an area is subject to the Water Fee but not the other Master Plan fees, the project will be charged a Program Management Fee equal to five percent (5%) of the Water Fee. The City will calculate the applicable Program Management Fee on case-by-case basis for such projects.

Table 1-1 shows the proposed Program Management Fee as five percent (5%) of the total Master Plan fees charged on each project.

Table 1-1: Program Management Fee

Land Use	Program Management Fee
Residential (per SF)	
Single Family Residential	5% of Master Plan Fees
Multi-Family Residential (Attached 2-4)	5% of Master Plan Fees
High Density Residential (Attached 4+)	5% of Master Plan Fees
Non-Residential (per 1,000 Bldg SF)	
Office	5% of Master Plan Fees
Commercial	5% of Master Plan Fees
Industrial	5% of Master Plan Fees

Table 1-2 below shows the past five fiscal years' (FY) program management fee revenue and program management expenditures, not including any interest or investment earnings. The Master Plan program management revenue has been collected at five percent (5%) of the Master Plan fees since program inception. The total revenue collected over the past five fiscal years is just slightly higher than the total expenses due to a higher-than-average amount of revenue collected in FY 21-22. The annual expenditures are higher than revenue for FY19-20, FY20-21, and FY22-23 due to increased activity related to the City's updates to existing Master Plans and fee programs. It should be noted that the program management revenue and expenditures are from all fee sources, not just the master plan fee program as the City collects all program management fees into the same account. Based on this analysis, continuing to collect a five percent (5%) Program Management Fee is justifiable to cover the annual administrative expenditures of the impact fee program. It is anticipated that administrative costs will continue to increase due to the additional requirements of the state legislation. It is also anticipated that revenue and expenditures will vary year to year due to the cyclical nature of five-year reporting requirements, nexus study updates, and the housing market.

Table 1-2: Historic Program Management Fund Revenue & Expenditure

Historic Program Management Fund		
Fiscal Year	**Revenue**	**Expenditure**
FY 19-20 Program Management	$770,465	$797,252
FY 20-21 Program Management	$1,256,709	$1,410,209
FY 21-22 Program Management	$1,998,884	$1,172,557
FY 22-23 Program Management	$853,906	$1,171,138
FY 23-24 Program Management	$1,197,094	$1,014,635
Total	$6,077,058	$5,565,791

NEXUS REQUIREMENT SUMMARY

AB 1600 requires that public agencies satisfy five requirements when establishing, increasing, or imposing a fee as a condition of approval of a development project. The required findings are as follows.

Requirement 1: Identify the purpose of the fee.

The purpose of the Program Management Fee is to provide the funding necessary to administer and update the Master Plan Fees. This includes consultant and City staff time related to services such as providing fee quotes, updating the fee program, tracking revenue and expenditures, updating the City's website, and preparing annual and five-year reports.

Requirement 2: Identify the use of the fee.

The Program Management Fee will be used to fund the management and administration of the Master Plan Fees. This includes consultant and City staff time related to services such as posting of nexus studies and fee schedules on the City's website, annual fee adjustments, annual fee reporting, additional fee reporting every five years, application and tracking of fee credits/reimbursements, periodic nexus study updates, staff and consultant time related to fee preparation, collection, tracking and administration.

Requirement 3: Determine how there is a reasonable relationship between the fee's use and the type of development project on which the fee is imposed.

New residents and workers that result from new development increases the demand for new infrastructure and facilities. These new infrastructure and facility projects will be funded through the Master Plan Fees program, which requires City and consultant staff time to manage and administer. The Program Management Fee is a five percent (5%) mark-up of the Master Plan Fees.

Requirement 4: Determine how there is a reasonable relationship between the need for the public facility and the type of development project on which the fee is imposed.

Each new development adds residents or workers to the City and in order to maintain the City's desired level of service, new general government, recreational facilities, public safety, traffic infrastructure, water, wastewater, and storm drainage facilities must be built. These facilities are funded through the Master Plan Fees. To ensure these fees for new development are administered according to state law, regular updates, tracking, and reporting are required. In addition, City staff must provide fee quotes for new development. To collect the funding for these resulting activities, the Program Management Fee is based on a five percent (5%) mark-up of the Master Plan Fees as summarized in

Table 1-1. Using a percentage of the Master Plan Program Area fees, ensures that each new development is charged their fair share. A five percent (5%) fee is in alignment with the industry standard range of three to six percent (3-6%). In addition, **Table 1-2** analyzes the data for the last five audited years showing that the revenue and expenditures are in alignment.

Requirement 5: Determine how there is a reasonable relationship between the amount of the fee and the cost of the public facility or portion of the public facility attributable to the development on which the fee is imposed.

The Program Management Fee provides the funding to administer the Master Plan Fees. The City has adopted a policy of collecting a five percent (5%) mark-up on the other fees to administer their fee programs effectively. Since this fee is calculated as a mark-up of the other Master Plan Fees as summarized in **Table 1-1**, each land use pays for their fair share of the management costs based on their impact on the City's infrastructure.

Section 2 IMPLEMENTATION AND ADMINISTRATION

IMPLEMENTATION

According to the California Government Code, prior to levying a new fee or increasing an existing fee, an agency must hold at least one open and public meeting with at least 30 days' notice. In addition, notice of the time and place of the meeting, including a general explanation of the matter to be considered, and a statement that the data required by this section is available, shall be mailed at least 14 days prior to the meeting to any interested party who files a written request with the local agency for mailed notice of the meeting on new or increased fees or service charges. Any written request for mailed notices shall be valid for one year from the date on which it is filed unless a renewal request is filed. At least ten days prior to this meeting, the agency must make data on infrastructure costs and funding sources available to the public. Notice of the time and place of the meeting and a general explanation of the matter are to be published in accordance with Section 6062a of the Government Code, which states that publication of notice shall occur for ten days in a newspaper regularly published once a week or more. Two publications, with at least five days intervening between the dates of first and last publication not counting such publication dates, are sufficient. The period of notice commences upon the first day of publication and terminates at the end of the tenth day, including therein the first day. The new or increased fees shall be effective no earlier than 60 days following the final action on the adoption or increase of the fees. Following adoption of the fees, the fees and supporting information must be placed on the City's website.

FEE PROGRAM ADMINISTRATIVE REQUIREMENTS

The Government Code requires the City to report every year and every fifth-year certain financial information regarding the fees. The City must make available within 180 days after the last day of each fiscal year the following information from the prior fiscal year:

1. A brief description of the type of fee in the account or fund.
2. The amount of the fee.
3. The beginning and ending balance in the account or fund.
4. The amount of the fee collected and the interest earned.
5. An identification of each public improvement for which fees were expended and the amount of expenditures.
6. An identification of an approximate date by which time construction on the improvement will commence if it is determined that sufficient funds exist to complete the project.
7. An identification of each improvement identified pursuant to requirement #6 listed on a previous report and whether construction began on the approximate date noted within that report. If construction did not commence by the approximate date provided in the previous report, identify the reason for the delay and a revised approximate commencement date.

8. A description of each interfund transfer or loan made from the account and when it will be repaid.
9. Identification of any refunds made and the number of persons or entities identified to receive those refunds once it is determined that sufficient monies have been collected to fund all fee related projects.

On October 11, 2023, California Governor Gavin Newsom signed into law AB 516 which amended certain portions of the Mitigation Fee Act related to the annual and five-year reporting requirements. Under AB 516, Requirements 6 and 8 have been expanded to include the following:

> 6a. Identification of each public improvement identified in the previous report and whether construction began on the approximate date noted.
>
> 6b. For previously identified projects that did not start construction on the approximate date in the previous report, the reason for the delay and a revised approximate date that the local agency will commence construction, if applicable.
>
> 6c. For any refunds made, the number of persons or entities identified to receive those refunds.

The City must make this information available for public review and must also present it at the next regularly scheduled public meeting not less than 15 days after this information is made available to the public.

For the fifth fiscal year following the first deposit into the account or fund, and every five years thereafter, the City must make the following findings with respect to any remaining funds in the fee account, regardless of whether those funds are committed or uncommitted:

1. Identify the purpose to which the fee is to be put.
2. Demonstrate a reasonable relationship between the fee and the purpose for which it is charged.
3. Identify all sources and amounts of funding anticipated to complete financing any incomplete improvements.
4. Designate the approximate dates on which funding in item (3) above is expected to be deposited into the fee account.

As with the annual disclosure, the five-year report must be made public within 180 days after the end of the City's fiscal year and must be reviewed at the next regularly scheduled public meeting.

PROGRAMMING REVENUES WITH THE CIP

The City should maintain its Capital Improvement Program (CIP) to adequately plan for future infrastructure needs. The CIP should commit all projected fee revenues and fund balances to

specific projects that are necessary to serve growth. The CIP provides documentation necessary for the City to hold funds in a project account for longer than five years if necessary to collect sufficient funds to complete a project. In addition, the CIP is required per AB 602. Due to the nature of program management, no physical infrastructure projects are included in a CIP list for the Program Management Fee. Programming of the fee revenue collected from the Program Management Fee will continue to be used on the administrative tasks listed in this Nexus Study.

FEE ADJUSTMENT PROCEDURES

The Master Plan fees may be adjusted periodically to reflect revised facility requirements, receipt of funding from alternative sources (i.e., state or federal grants), revised facilities or costs, changes in demographics, changes in the average unit square footage, or changes in the land use plan. The Program Management Fee will remain at 5% of the total Master Plan Fees assessed on a project until a revised nexus study updates the percent.

TIMING OF FEE PAYMENT

Fees will be collected at the time the building permit for the project is issued.

DESIGNATED RESIDENTIAL PROJECTS DEFERRED FEE PAYMENTS

California Senate Bill 937 (SB 937), which became effective on January 1, 2025, significantly delays the collection of fees for residential projects defined as "Designated Residential Development Projects." Specifically, SB 937 states that public agencies may not impose development impact fees on Designated Residential Development Projects until the project receives a Certificate of Occupancy or Temporary Certificate of Occupancy. Furthermore, local agencies may not charge interest on the delayed fee payments for such projects; rather, the fees must reflect the fee amount in place at the time the project's building permits are issued. In addition, the bill extends housing entitlements by 24 months for projects with entitlements issued prior to January 1, 2024, and set to expire on or before December 21, 2025.

SB 937 was designed to incentivize housing production by mitigating the effects of rising construction costs and interest rates, which hinder the financial feasibility of new housing projects. By deferring fee payments with zero interest, SB 937 can help to incentivize housing developers, who must demonstrate financial feasibility to investors and lending institutions before receiving necessary funding. Additionally, by extending entitlements, the bill allows developers more time to raise funding before constructing the project. By providing these incentives to developers, the bill strives to increase housing production, allowing local jurisdictions to fulfill their housing goals.

Housing projects must meet one of the following conditions to be considered a Designated Residential Development Project:

1. 100% of residential units (excluding the manager's unit) are reserved for low-income households.
2. The project meets the requirements regarding a Low Barrier Navigation Center Developments, per Government Code Section 65662.
3. The project is approved by a local government and meets all site-specific criteria, affordability criteria, and objective development standards pertaining to affordable housing developments located in commercial zones or mixed-income housing developments along commercial corridors, as specified by Article 2 (commencing with Section 65912.110) or Article 3 (commencing with Section 65912.120) of Chapter 4.1 of the Government Code.
4. The project is subject to a streamlined ministerial approval process, per Government Code Section 65913.4.
5. The project meets the criteria specified in the Affordable Housing on Faith and Higher Education Lands Act of 2023 (SB4)
6. The project is entitled to a Density Bonus, per Government Code Section 65915.
7. The project features 10 or fewer units.

Although fees are deferred for Designated Residential Development Projects until the project receives a Certificate of Occupancy or Temporary Certificate of Occupancy, it is important to note that public agencies may still collect utility service fees after receiving an application for utility services. In addition, developers may be required to pay development impact fees prior to the Certificate of Occupancy if construction does not commence within five years of the building permit issue date.

CREDITS AND REIMBURSEMENT POLICIES

Fee credits and reimbursements are not applicable to the Program Management Fee.

FEE REPORTING

Assembly Bill No. 1483, which became effective January 1, 2020, requires that public agencies make the following information available on their website. The following information must be provided:

1. A current schedule of fees, exactions, and affordability requirements imposed by the city, county, or special district, including any dependent special districts, of the city or county applicable to a proposed housing development project, which shall be presented in a manner that clearly identifies the fees, exactions, and affordability requirements that apply to each parcel.
2. All zoning ordinances and development standards, which shall specify the zoning, design, and development standards that apply to each parcel.
3. The list of information required to be compiled pursuant to Section 65940.
4. The current and five previous annual fee reports or the current and five previous annual financial reports, that were required pursuant to AB 1600.

5. An archive of impact fee nexus studies, cost of service studies, or equivalent, conducted by the city, county, or special district on or after January 1, 2018.

Any updates to the above information must be available within 30 days.

ACCESSORY DWELLING UNITS

An accessory dwelling unit (ADU) is a second unit that is attached or detached from a single-family home. In accordance with Assembly Bill No. 881 approved on October 9, 2019, City of Ceres Impact Fees will not be charged for an ADU that is less than 750 square feet. For an ADU that is 750 square feet or larger, the ADU will be charged proportionately in relation to the square footage of the primary dwelling unit. Since the City's residential fees are now being charged on a square footage basis, ADU fees will be calculated by multiplying the City's Single Family Residential fee by the ADU's square footage.

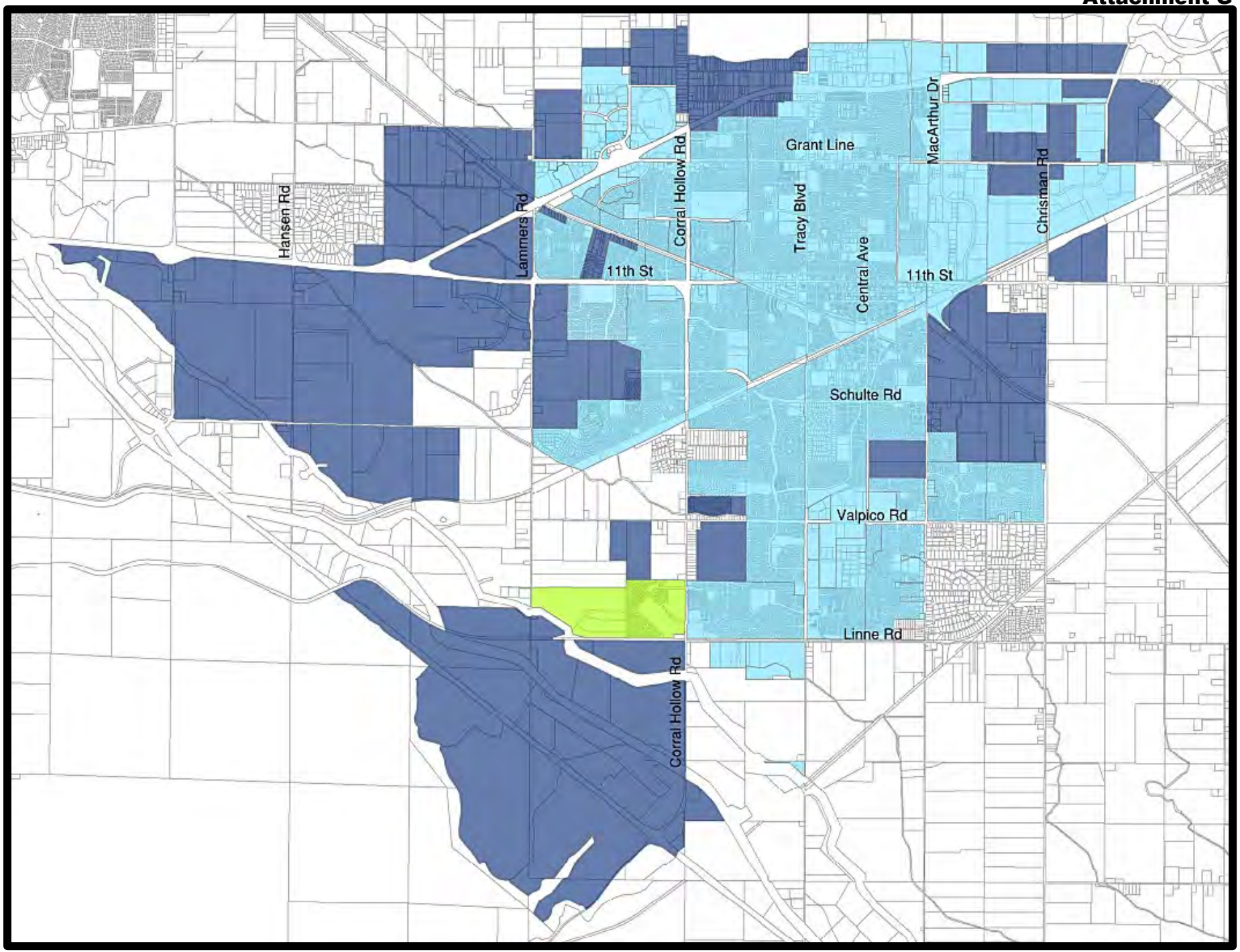
SPECIALIZED DEVELOPMENT PROJECTS

The fees in this report may not apply to specialized development projects such as golf courses, cemeteries, sports stadium, truck lots, or other specialized land uses. For specialized development projects the City will review the development's impacts to determine the applicable fees. The fee rates presented in this Nexus Study may be increased, reduced, exempted, or waived under certain circumstances as determined by the City. Any exemption or reduction in fees will be based on the City's independent analysis and review of the subject property. In addition, specialized land uses may be calculated utilizing the cost per person applied to the number of people the specialized land use generates as determined by the City's independent analysis.

Some developments may include more than one land use type. In these cases, the fee is calculated separately for each land use. The City has the discretion to impose the fees based on the specific aspects of a proposed development regardless of zoning. The fee imposed should be based on the land use type that most closely represents the impacts of the development.

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Attachment G



Core Fees Area

Master Plan Area

Ellis