TRACY CITY COUNCIL REGULAR MEETING AGENDA

Tuesday, September 5, 2023, 7:00 P.M.

Tracy City Hall Chambers, 333 Civic Center Plaza, Tracy
Web Site: www.cityoftracy.org

THIS MEETING WILL BE OPEN TO THE PUBLIC FOR IN-PERSON AND REMOTE PARTICIPATION PURSUANT TO GOVERNMENT CODE SECTION 54953(e).

MEMBERS OF THE PUBLIC MAY PARTICIPATE REMOTELY IN THE MEETING VIA THE FOLLOWING METHOD:

As always, the public may view the City Council meetings live on the City of Tracy's website at CityofTracy.org or on Comcast Channel 26/AT&T U-verse Channel 99. To view from the City's website, open the "Government" menu at the top of the City's homepage and select "City Council Meeting Videos" under the "City Council" section.

If you only wish to watch the meeting and do not wish to address the Council, the City requests that you stream the meeting through the City's website or watch on Channel 26.

***Remote Public Comment**:*

During the upcoming City Council meeting public comment will be accepted via the options listed below. If you would like to comment remotely, please follow the protocols below:

- *Comments via:*
  - **Online by visiting** https://cityoftracyevents.webex.com and using the following **Event Number: 2550 021 2566** and **Event Password**: TracyCC
  - ***If you would like to participate in the public comment anonymously***, you may submit your comment in WebEx by typing "Anonymous" when prompted to provide a First and Last Name and inserting Anonymous@example.com when prompted to provide an email address.
  - Join by phone by dialing +1-408-418-9388, enter 25500212566#8722922# Press *3 to raise the hand icon to speak on an item.

- *Protocols for commenting via WebEx:*
  - *If you wish to comment on the "Consent Calendar", "Items from the Audience/Public Comment" or "Regular Agenda" portions of the agenda:*
    - *Listen for the Mayor to open that portion of the agenda for discussion, then raise your hand to speak by clicking on the Hand icon on the Participants panel to the right of your screen.*
    - *If you no longer wish to comment, you may lower your hand by clicking on the Hand icon again.*
  - *Comments for the "Consent Calendar" "Items from the Agenda/Public Comment" or "Regular Agenda" portions of the agenda will be accepted until the public comment for that item is closed.*

Comments received on Webex outside of the comment periods outlined above will not be included in the record.

Date Posted: August 31, 2023

Americans With Disabilities Act - The City of Tracy complies with the Americans with Disabilities Act and makes all reasonable accommodations for the disabled to participate in Council meetings. Persons requiring assistance or auxiliary aids should call City Hall (209/831-6105) 24 hours prior to the meeting.

Addressing the Council on Items on the Agenda - The Brown Act provides that every regular Council meeting shall provide an opportunity for the public to address the Council on any item within its jurisdiction before or during the Council's consideration of the item, provided no action shall be taken on any item not on the agenda. To facilitate the orderly process of public comment and to assist the Council to conduct its business as efficiently as possible, members of the public wishing to address the Council are requested to, but not required to, hand a speaker card, which includes the speaker's name or other identifying designation and address to the City Clerk prior to the agenda item being called. Generally, once the City Council begins its consideration of an item, no more speaker cards will be accepted. An individual's failure to present a speaker card or state their name shall not preclude the individual from addressing the Council. Each citizen will be allowed a maximum of five minutes for input or testimony. In the event there are 15 or more individuals wishing to speak regarding any agenda item including the "Items from the Audience/Public Comment" portion of the agenda and regular items, the maximum amount of time allowed per speaker will be three minutes. When speaking under a specific agenda item, each speaker should avoid repetition of the remarks of the prior speakers. To promote time efficiency and an orderly meeting, the Presiding Officer may request that a spokesperson be designated to represent similar views. A designated spokesperson shall have 10 minutes to speak. At the Presiding Officer's discretion, additional time may be granted. The City Clerk shall be the timekeeper.

Consent Calendar - All items listed on the Consent Calendar are considered routine and/or consistent with previous City Council direction. One motion, a second, and a roll call vote may enact the items listed on the Consent Calendar. No separate discussion of Consent Calendar items shall take place unless a member of the City Council, City staff or the public request discussion on a specific item.

Addressing the Council on Items not on the Agenda – The Brown Act prohibits discussion or action on items not on the posted agenda. The City Council's Meeting Protocols and Rules of Procedure provide that in the interest of allowing Council to have adequate time to address the agendized items of business, "Items from the Audience/Public Comment" following the Consent Calendar will be limited to 15-minutes maximum period. "Items from the Audience/Public Comment" listed near the end of the agenda will not have a maximum time limit. A five-minute maximum time limit per speaker will apply to all individuals speaking during "Items from the Audience/Public Comment". For non-agendized items, Council Members may briefly respond to statements made or questions posed by individuals during public comment; ask questions for clarification; direct the individual to the appropriate staff member; or request that the matter be placed on a future agenda or that staff provide additional information to Council. When members of the public address the Council, they should be as specific as possible about their concerns. If several members of the public comment on the same issue an effort should be made to avoid repetition of views already expressed.

Notice - A 90 day limit is set by law for filing challenges in the Superior Court to certain City administrative decisions and orders when those decisions or orders require: (1) a hearing by law, (2) the receipt of evidence, and (3) the exercise of discretion. The 90 day limit begins on the date the decision is final (Code of Civil Procedure Section 1094.6). Further, if you challenge a City Council action in court, you may be limited, by California law, including but not limited to Government Code Section 65009, to raising only those issues you or someone else raised during the public hearing, or raised in written correspondence delivered to the City Council prior to or at the public hearing.

Full copies of the agenda are available on the City's website: *www.cityoftracy.org*

Date Posted: August 10, 2023

CALL TO ORDER

PLEDGE OF ALLEGIANCE

INVOCATION

ACTIONS, BY MOTION, OF CITY COUNCIL PURSUANT TO AB 2449, IF ANY

ROLL CALL

PRESENTATIONS

1. Employee of the Month
2. Proclamation – National Hispanic Heritage Month
3. Proclamation – Tracy Connects Day
4. Certificates of Appointment – Environmental Sustainability Commission
5. Certificates of Appointment – Youth Advisory Commission

1. CONSENT CALENDAR

1.A. Approve August 15, 2023, Regular Meeting Minutes.

1.B. Receive an informational report regarding the Police Department's response to fireworks complaints and official city events during the July 4th weekend.

1.C. Receive an informational report regarding the Police Department's year-to-date part one crime statistics of homicide, rape, robbery, and aggravated assaults.

1.D. Adopt a resolution approving the execution of a two-year agreement with ClearGov, Inc. for the licensing of ClearPlans, a digital strategic planning and performance management solution.

1.E. Adopt a Resolution authorizing the purchase of six Ford Police Interceptors and one Ford F150 Police Responder replacement vehicle for $392,211 through National Auto Fleet Group, Inc, an awarded contract company of Sourcewell and direct the Budget Officer to appropriate the funds in Fund 606.

1.F. Adopt a resolution (1) approving Amendment No. 1 to the Master Professional Services Agreement (HA20-01) with Harris and Associates for program management services to extend the agreement through September 14, 2025, for a not-to-exceed amount of $800,000 per fiscal year, and (2) approving Amendment No. 1 to the Master Professional Services Agreement (HA20-02) with Harris and Associates for program management services to extend the agreement through September 14, 2025, for a not-to-exceed amount of $800,000 per fiscal year.

1.G. Adopt a resolution approving (1) Amendment No. 1 to the Master Professional Services Agreement with Blackwater Consulting Engineers, Inc. for water pressure and capacity analyses, and engineering assistance to extend the agreement through December 31, 2024, for a not-to-exceed amount of $200,000 per calendar year.

1.H. City Council (1) approve a new not-to-exceed project budget of $175,750 for the Annual Water Valve Replacement Project, CIP 75168, and (2) authorize the City Manager to approve change orders up to the contingency amount of $66,000, if needed.

1.I. Adopt a list of proposed projects for Fiscal Year 2023-2024 funded by SB1: The Road Repair and Accountability Act of 2017.

1.J. Adopt a resolution (1) accepting public improvements as complete for Holly Commerce Center for a 12" water line, roadway, drainage, and frontage improvements constructed by Olliix, LLC, a California Limited Liability Company, and assuming responsibility for the future maintenance and repair, (2) authorizing the City Engineer to release performance and payment bonds, (3) authorizing the City Clerk to file the Notice of Completion with the San Joaquin County Recorder's Office, and (4) determining that the recommended actions are exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15061(b)3.

1.K. The Tracy Homelessness Advisory Committee recommends that the City Council adopt a resolution (1) making a determination that compliance with standard procurement process is not in the best interest of the City and (2) approving general services agreement with Bicsec Security, Inc. for fire alarm and smoke alarm systems to be installed as part of the site improvements for the Phase IV Custom Containers at the Temporary Emergency Housing Facility, CIP 71112, at 370 Arbor Avenue.

1.L. The Tracy Homelessness Advisory Committee recommends that the City Council adopt a resolution (1) making a determination that compliance with standard procurement process is not in the best interest of the City and (2) approving general services agreement with Jr. Wagner Fire Protection, Inc., for design and installation of the fire sprinkler system to be installed as part of the site improvements for the Phase IV Custom Containers at the Temporary Emergency Housing Facility, CIP 71112, at 370 West Arbor Avenue.

1.M. Authorize staff to execute a change order that exceeds the original authorized contingency in the amount of $92,600 for additional work to the Temporary Traffic Signal at Corral Hollow Road and Valpico Road, CIP 72124, to be completed by Tennyson Electric, Inc., of Livermore, California.

1.N. Adopt a resolution approving a Professional Services Agreement with Griffin Structures for project management services for the Aquatic Center project (CIP 78054) for a total not-to-exceed amount of $760,200.

1.O. City Council, by resolution: 1) approve a Professional Services Agreement with HdL Coren & Cone for Property Tax Consulting Services; 2) authorize the Mayor to sign the agreement and, 3) authorize the City Manager to extend the agreement for up to three, three-year terms.

1.P. The Tracy Homelessness Advisory Committee recommends that City Council adopt a resolution: 1) Authorizing the acceptance of a grant award from San Joaquin County Homelessness Housing Assistance and Prevention Round 3 allocation in the amount of $251,795 to partially fund operations costs of the Tracy Interim Shelter Site (renamed Phase III and Phase IV of the Temporary Emergency Housing Facility, CIP 71112); and 2) Appropriating $251,795 of the total grant funds to the Mobility and Housing Department, Homeless Services Division.

1.Q. The Tracy Homelessness Advisory Committee recommends that the City Council adopt a resolution by a four-fifths vote (1) making a determination that compliance with standard procurement process is not in the best interest of the City and dispense the bidding requirements for the additional scope of work pursuant to California Public Contract Code Section 22050 and Tracy Municipal Code Section 2.20.270(a) and (2) approving an additional $135,000 for work to be performed by GradeTech, Inc., and approving an additional $30,110 for work to be performed by Tennyson Electric, Inc. for the Phase IV infrastructure and (3) approving a contract with a not-to-exceed amount of $435,000 with Grade Tech, Inc, and approving a contract with a not-to-exceed amount of $155,110 with Tennyson Electric, Inc.

1.R Adopt the resolution (1) authorizing the Mayor to sign terms and conditions of accepting the grant award from the Airport Improvement Program through the Federal Aviation Administration (FAA) for grant agreement AIP #3-06-0259-025-2023 in the amount of $162,718 for the design and construction for the Crack Seal and Slurry Seal of the Tee Hangar Taxilanes at the Tracy Municipal Airport, and (2) Appropriating the additional grant funding of $39,418 to CIP 77593.

2. ITEMS FROM THE AUDIENCE

3. REGULAR AGENDA

3.A. Council conduct a public hearing to consider declaring the existence of weeds, rubbish, refuse, and flammable materials on each of the parcels listed in Exhibit “A” to this Agenda Item a public nuisance; hear and consider objections to said declaration and to the potential abatement thereof; and adopt a resolution authorizing the South San Joaquin County Fire Authority (“Authority”) staff to abate said nuisances and directing Authority and City staffs to recover the costs of abatement in accordance with the requirements of the Joint Powers Agreement of the South San Joaquin County Fire Authority and the Tracy Municipal Code.

3.B. City Council review and discuss the Wastewater Master Plan Update.

3.C. City Council review and discuss the Citywide Water System Master Plan Update.

4. ITEMS FROM THE AUDIENCE

5. STAFF ITEMS

6. COUNCIL ITEMS

7. ADJOURNMENT

TRACY CITY COUNCIL REGULAR MEETING MINUTES

August 15, 2023, 7:00 p.m.

City Hall, 333 Civic Center Plaza, Tracy *Web Site: www.cityoftracy.org*

Mayor Young called the meeting to order at 7:00 p.m.

Mayor Young led the Pledge of Allegiance.

Pastor Tim Heinrich, Crossroads Baptist Church offered the invocation.

There were no actions taken pursuant to AB 2449.

Roll call found Council Members Arriola, Bedolla, Evans, Mayor Pro Tem Davis and Mayor Young present.

Karin Schnaider, Assistant City Manager presented Employee of the Month award for August to Joseph Viorge-Koide, Mobility and Housing.

Mayor Young presented a Certificate of Recognition to outgoing Planning Commissioner Cliff Hudson.

Mayor Young presented a Proclamation for American Muslim Appreciation and Awareness Month to Solyman Ebadi, Council on American-Islamic Relations.

1. CONSENT CALENDAR – Following the removal of consent items 1.I and 1.R by Dotty Nygard motion was made by Council Member Arriola and seconded by Mayor Pro Tem Davis to adopt the Consent Calendar. Roll call found all in favor; passed and so ordered.

   1.A. Adoption of June 27, 2023 Closed Session Minutes and June 27, 2023 Special Meeting Minutes, July 5, 2023 Closed Session Minutes and July 5, 2023 Special Meeting Minutes, August 1, 2023 Special Meeting Minutes, and August 7, 2023 Closed Session Minutes. – **Minutes were adopted.**

   1.B. The Tracy Homelessness Advisory Committee recommends that the City Council adopt a Resolution approving a two-year general services agreement with SC Commercial, LLC dba SC Fuels, in a not to exceed amount of $500,000, for on-demand mobile fueling of diesel fuel at 370 W. Arbor Avenue, Tracy, CA 95304. – **Resolution 2023-143** approved a General Services Agreement with SC Commercial, LLC dba SC Fuels.

   1.C. Waive the second reading and adopt an Ordinance revising Section 6.04.310 of the Tracy Municipal Code to correct typographical errors regarding business tax categories. – **Ordinance 1340** was adopted.

   1.D. Adopt a Resolution appointing eight students and two adults to fill vacancies on the Youth Advisory Commission, based upon the selection panel's recommendations. – **Resolution 2023-144** appointed eight students and two adults to fill vacancies on the Youth Advisory Commission.

1.E. Adopt separate resolutions approving a Professional Services Agreement, for an initial term of one year, with an administrative option to extend annually, for an additional two years, to provide on-call engineering support services related to the water and wastewater treatment plants, with the following consultants and not to exceed amounts: 1) Carollo Engineers, Inc. for a not to exceed amount of $300,000 annually (total not to exceed amount of $900,000); 2) Black Water Consulting Engineers, Inc. for a not to exceed amount of $300,000 annually (total not to exceed amount of $900,000) – **Resolution 2023-145** approved the Professional Services agreement with Carollo Engineers, Inc. **Resolution 2023-146** approved the Professional Services Agreement with Black Water Consulting Engineers.

1.F. Adopt a Resolution approving a one-year agreement with Jet Mulch, Inc. for playground wood fiber and mulch installation, with a not-to-exceed amount of $50,000 per fiscal year ($250,000 in total) and authorizing the City Manager to grant up to four, one-year extensions. – **Resolution 2023-147** approved an agreement with Jet Mulch, Inc.

1.G. Adopt a resolution approving the execution of Amendment No. 1 to the Cooperative Agreement for Construction with the California Department of Transportation for the I-580/Patterson Pass Road Interchange Project (CIP 73147). – **Resolution 2023-148** approved Amendment No. 1 to the Cooperative Agreement.

1.H. Approve the submission of a claim to the San Joaquin Council of Governments for Transportation Development Act funds in the amount of $11,651,948 for Fiscal Year 2022-2023 and authorize the City Manager or designee to execute the claim. – **Resolution 2023-149** approved the submission of a claim to the San Joaquin Council of Governments for the Transportation Development Act Funds.

1.J. Adopt a resolution (1) rejecting all bids for the Temporary Emergency Housing Project on Arbor Road, Site Improvements Construction Package 2, CIP 71112, received October 19, 2022, and (2) authorizing staff to re-advertise the project. – **Resolution 2023-150** rejected all bids and authorized staff to re-advertise the project.

1.K. Adopt a resolution to (1) accept the construction for the Improvements at Grant Line Road and MacArthur Drive Intersection Project, CIP 72121, for work completed by DV Electric, Co., of San Jose, California, (2) authorize the City Clerk to File the Notice of Completion with the San Joaquin County Recorder's Office, (3) authorize the City Engineer to release the bonds and retention payment, and (4) authorize the Finance Department to close the Project. – **Resolution 2023-151** accepted the construction improvements, authorized the Clerk to file Notice of Completion with the County, authorized the City Engineer to release bonds and retention payment, and authorized the Finance Department to close the project.

1.L. Adopt a resolution: (1) Accepting the Board of State of Community Corrections Officers Wellness and Mental Health Grant in the amount of $73,718; (2) Appropriating the grant funding of $73,718 to the Police Department's operational budget; (3) Approving a Professional Services Agreement (PSA) with Sigma Wellness, LLC (Sigma) for advanced preventative medical screenings for Tracy Police Department's first responders, for a term of 12 months, with a not-to-exceed amount of $105,000; and (4) Determining that waiving the competitive bidding process to award the PSA to Sigma is in the best interest of the City, pursuant to 2.20.140(b)(6) of the Tracy Municipal Code. – **Resolution 2023-152** accepted the grant, appropriated the grant funding, and approved the agreement with Sigma.

1.M. Adopt a resolution (1) awarding a construction contract to Tennyson Electric, LLC of Livermore, California in the amount of $436,168 for the Streetlight Installation Project (CIP 72125), (2) approving a project not-to-exceed budget of $528,402, (3) appropriating $38,150 from the Gas Tax Fund (F245) to fund the Project, and (4) authorizing the City Manager to approve change orders up to the contingency amount of $43,617, if needed, pursuant to Tracy Municipal Code Section 2.20.090(b). – **Resolution 2023-153** awarded the construction contract, approved the project not-to-exceed amount, appropriated funds to the project and authorized the City Manager to approve change orders up to the contingency amount.

1.N. Approve a Resolution adopting the Fiscal Year 2023-2024 and 2024-2025 City Council Strategic Priorities. – **Resolution 2023-154** adopted the Council Strategic Priorities.

1.O. Adopt a Resolution authorizing the purchase of equipment from ABI Attachments, Inc. to maintain and operate Legacy Fields in the amount of $122,000. – **Resolution 2023-155** authorized the purchase of the equipment.

1.P. Adopt a resolution approving the Offsite Improvement Agreement between the City and Lennar Homes of California, LLC, for public improvements required as part of the Conditions of Approval, for the Tracy Hills Phase 2 Zone 5 Water Main Improvements. – **Resolution 2023-156** approved the Offsite Improvement Agreement.

1.Q. Adopt six Resolutions approving General Services Agreements, each for two (2) year terms, with an administrative option to extend for an additional year, to supply and deliver certain chemicals necessary in the treatment process of water and wastewater, with the following vendors, for the specified amounts: (1) Hill Brothers Chemical Company (not to exceed amount of $250,000 annually); (2) Polydyne, Inc. (not to exceed amount of $1,500,000 annually); (3) Pioneer Americas, LLC (not to exceed amount of $2,500,000 annually); (4) HASA, Inc. (not to exceed amount of $100,000 annually); (5) Sterling Water Technologies, LLC (not to exceed amount of $250,000 annually); and (6) Thatcher Company of California, Inc. (not to exceed amount of $1,500,000 annually). – **Resolution 2023-157** approved the General Services Agreement with Hill Brothers Chemical Company. **Resolution 2023-158** approved the General Services Agreement with Polydyne, Inc. **Resolution 2023-159** approved the General Services Agreement with Pioneer Americas, LLC. **Resolution 2023-160** approved the

General Services Agreement with HASA, Inc. **Resolution 2023-161** approved the General Services Agreement with Sterling Water Technologies, LLC., and **Resolution 2023-162** approved the General Services Agreement with Thatcher Company of California, Inc.

1.S. Adopt a resolution approving the First Amendment to the Subdivision Improvement Agreement for Western Park and Orchard Park (Parks) in the Ellis Specific Plan area to allocate credit and security amounts as between the Parks and reflect adjustments due to the voided Master Program Improvements and Reimbursement Agreement and authorize the City Clerk to file the First Amendment with the San Joaquin County Recorder's Office. – **Resolution 2023-163** approved the First Amendment to the Subdivision Improvement Agreement for Western Park and Orchard Park in the Ellis Specific Plan.

1.T. Adopt a resolution (1) accepting improvements for Western Park within Ellis Town and Country, Tract 4007 subdivision, constructed by LS-Tracy, LLC, and accepting future maintenance and repair; and (2) authorizing the City Clerk to file the Notice of Completion for Western Park and record said notice with the San Joaquin County Recorder's Office; and (3) authorizing the City Engineer to release the Western Park improvement security in accordance with the terms of the Subdivision Improvement Agreement, as amended. – **Resolution 2023-164** accepted improvements for Western Park within Ellis Town and Country, Tract 4007.

1.U City Council (1) determine that waiving a competitive bidding process is in the best interest of the City, Pursuant to Tracy Municipal Code Section 2.20.140(B)(6); and (2) adopt a resolution approving (A) Amendment No. 1 to the Master Professional Services Agreement with West Yost & Associates for water pressure and capacity analyses and engineering services to extend the agreement, by an additional 18 months, through December 31, 2024, and increase compensation, from $200,000 per calendar year to a not-to-exceed amount of $300,000 per calendar year, and (B) Amendment No. 1 to the Master Professional Services Agreement with Wood Rodgers for storm drainage engineering services to extend the agreement, by an additional 18 months, through December 31, 2024, and increase compensation from $200,000 per calendar year to a not-to-exceed amount of $300,000 per calendar year. – **Resolution 2023-165** determined the waiving of the competitive bidding process and approved Amendment No. 1 to the Master Professional Services Agreement with West Yost & Associate, and Amendment No. 1 to the Master Professional Services Agreement with Wood Rogers.

1.I. Staff recommends that the City Council authorize a Professional Services Agreement with West Coast Arborists, Inc. for the 2023-2024 Tree Maintenance Program, for an initial two years with authority for the City Manager to execute agreement extensions for an additional five years, with a not-to-exceed amount of $2,587,176 annually.

Dotty Nygard pulled the item to ask for a memo on how much funding the City is putting aside for tree planting. Have over $700,000 budget for our urban forest and part of that is specified for tree maintenance and removal. Trees are valuable for shade, cool our streets and provide clean air for the community.

Dave Murphy, Assistant Director of Operations responded to questions.

Robert Tanner spoke about West Coast Arborists still negotiating labor contract issues, and asked what affect that will have for the City of Tracy. Does the City need to increase staff to help cover that or hire another third party.

Daniel Helm shared concerns about driving down Central Avenue and not being able to see the stop signs because the trees have gotten beefy which creates a hazard. People blow through stop signs. Cannot see the markings.

Tim Silva shared he had been working with Dr. Khan, a tera scientist who has come up with program which manages forests and coral reefs and wants to introduce this program to help manage our urban forest in Tracy. Mr. Silva stated he would like to see the program instituted in Tracy.

ACTION: Motion was made by Council Member Bedolla and seconded by Council Member Arriola to adopt **Resolution 2023-166** authorizing a Professional Services Agreement with West Coast Arborists, Inc., for the 2023-2024 tree maintenance program, for an initial two years with authority for the City Manager to execute agreement extensions for an additional five years, with a not-to-exceed amount of $2,587,176 annually. Roll call found all in favor; passed and so ordered.

1.R. City Council 1) authorize the purchase of three (3) 29-foot low floor buses for Tracer fixed route service for a total of $2,175,000 from Gillig, LLC through the California Association for Coordinated Transportation/Morongo Basin Transit Authority Purchasing Cooperative Contract #18-01, pursuant to Tracy Municipal Code section 2.20.210; 2) approve a contingency amount of $75,000 for change orders necessary resulting during production; and 3) appropriate an additional $250,000 to Capital Improvement Project 77590 for the additional costs. –

Dotty Nygard pulled the item to ask if the City is looking at an electric fleet which is going to be mandated in the future to make sure we are meeting our California target, is the City going to have cleaner energy and electrification.

Tim Silva stated the need for the three new buses is because of expanded route services to Ellis and Tracy Hills and the homeless on Arbor Road. The City is addressing the State mandate to go toward electric busing but that is down the road. Don't have the infrastructure for electric buses and asked Council to approve the item and purchase the buses.

Ed Lovell, Transit Manager responded to questions.

There were no comments from Council.

ACTION: Motion was made by Council Member Arriola and seconded by Mayor Pro Tem Davis to adopt **Resolution 2023-167** authorizing the purchase of three (3) 29-foot low floor buses for Tracer Fixed Route Service for a total of $2,175,000 from Gillig, LLC through the California Association for Coordinated Transportation/Morongo Basin Transit Authority Purchasing Cooperative Contract #18-01, pursuant to Tracy Municipal Code Section

2.20.210; approving a contingency amount of $75,000 for change orders necessary resulting during production; appropriating an additional $250,000 to CIP 77590 for additional costs. Roll call found all in favor; passed and so ordered.

2. ITEMS FROM THE AUDIENCE – Daniel Helm spoke about the City being in the media and social media criticizing an employee and believes the employee has rights to due process as well as privacy which was violated and the Mayor has put the City at risk. Mr. Helm requested Council seek outside Counsel to see if a violation did occur and if it did, censure the Mayor again.

Mayor Young disagreed with the speaker; it was out there by consumer alert.

Jenny Lasker spoke about the cat overpopulation problem in the City. Cats keep reproducing and the problem is growing too much for local rescue and asked Council for help to combat the problem.

Chanell Watkins spoke about a cat problem in Tracy, solutions if groups can get together as rescues are at the limit and the shelter not having enough space. Need more resources and grants for rescues. If Shelter is getting money, they should be first that people call but individuals out there are getting calls and asked for help.

Kristi Vergez manages lounge in West Valley Bowl shared for the last four years they have had a rib cook off to raise funds for Wreaths Across America. This year was faced with a situation which would have prevented them from having that event. Thanked Mayor Pro Tem Davis and any other City officials or employees that helped come up with a solution. Event is on September 30 at the West Valley Bowl parking lot at noon.

Robert Tanner stated the contract with the City Attorney is useless and referred to Section 6.B, item number 2. City Attorney should have been terminated. Contract is not abided by.

Karen Moore felt the same way as the previous speaker regarding the City Attorney. If Council does not enforce the contract provision, then you have no contract. The City Attorney has connected herself to powerful people.

Patricia Howell shared concerns about recent Council actions, forcing the City Manager to resign by creating a hostile workplace while he was on medical leave, not censuring Council Member Bedolla for putting personal phone numbers of this Council on Facebook. Ms. Howell spoke about the City Attorney breaching her employment contract, acting unethically and a majority of the Council refusing to enforce the contract.

Linda Jimenez shared concerns regarding City Attorney not completing continuing legal education and the condition to hold active license status and submit documentation per rules of State Bar of California. Attorney Patel did not comply with law to be recertified and violated the oath which can result in suspension from practicing law and deliberately deceived Council and City. Ms. Jimenez requested the Attorney be removed.

Robin Cole stated in early August we learned through a media report that the City Attorney was practicing law without licensing. A meeting was held in public, and she was not here. The Mayor is wrongly accused of pulling in media and has attempted to explain

the media raised a consumer alert. Council Members Bedolla, Evans and Mayor Pro Tem Davis and City Attorney have demonstrated their character and find it lacking.

Vannie Dart shared concerns regarding Mayor Young harassing the City Attorney, Mayor voting in interest of developers, airing dirty laundry, supported the City Attorney for standing up to developers, making accountable, do not need more houses and warehouses, asked Mayor to put her energy into building a hospital and not dirty politics.

Kelly, volunteer with saving feral in Tracy, stated she has been working with Animal Rescue of Tracy trapping and doing TNR and spoke about feeding and fixing cats. Cannot do this anymore, the community needs to step up and take care of community cats. People are poisoning our community cats and pets.

Vee Bee referred to a speaker stating chopping off the Mayor's head is uncalled for.

Linda spoke about the feral cat problem and lack of affordable spay and neuter resources. Have initiative called Central Valley TNR project but there is only so much they can do so would like to welcome collaborative opportunities.

Melinda shared she works at the Homeless Shelter and found out that Citynet is not going to put in a bid for the contract next year and stated she is here to find out if any other organization put in a bid, and what is going to happen. Are the people going to be on the street. Can Council communicate as soon as possible.

Mayor Young confirmed with staff there will be a Tracy Homelessness Committee meeting on Thursday, August 17, 2023.

Council Member Bedolla confirmed with staff that this will not turn into a situation that is happening in Stockton.

Rosario thanked Council for Western Park. Need to know how USPS mail will be handled with the homeowners. Has seen flyers from Tracy Concerned Citizens of Aquatic Center which is not approved by the City, spoke about the Mayor harassing the City Attorney publicly even though it is an administrative matter, going to social forum, and special meeting does not look good. Mayor did not need to trash City Attorney in public media.

Mayor Young responded to the previous speakers comments.

Alice English stated she keeps hearing about 3-2, it was a closed session meeting, and the public is not privileged on what goes on behind closed doors. This is an attack on the City Attorney without the facts. Ms. English shared she has a lot of PRA's against the City Manager that is public record and spoke about the City Attorney doing her job and have developers that have their way for many years, Council Members who are paid by developers and a member attacking the City Attorney several times.

Sandy Taylor stated she had hoped Council would do the right thing on August 7 but no reportable action says it all. Citizens should be concerned with the precedent the majority Council set and spoke about the City Attorney breaking the law - California Business and Professions. Ms. Taylor spoke about Council Members Bedolla, Evans and Mayor Pro Tem Davis losing touch with reality and making decisions that defy common sense and basic logic. The community, Bar and Civil Grand Jury are listening.

Roy Hawkins stated on August 7 Ms. Patel was interviewed by KCRA and stated she did not think she was violating, was working with bar to resolve the penal issue. She committed a crime by practicing law with an inactive license. Compliance period was January 2020 to January of 2023 and deadline was February 1, 2023. The Bar Association had five months grace period to report her license to become inactive.

A resident spoke about the City Attorney sabotaging herself and creating her own problem. Found an example of this behavior and read out a quote regarding self-sabotage. The City needs to place our trust in a City Attorney who is ready and able to work for positive outcomes and hold themselves accountable.

3. REGULAR AGENDA

3.A The Planning Commission recommends that the City Council conduct a public hearing and, upon conclusion, introduce an Ordinance: 1) Certifying an Environmental Impact Report, Adopting a Mitigation Monitoring and Reporting Program, and making findings of fact and a statement of overriding considerations for the annexation and future development of industrial buildings on the 191.18-acre property located at the northeast corner of Grant Line and Paradise Roads (Assessor's Parcel Numbers 213-170-14, -24, -25, -26, -27, And -48, collectively, the "Property") in accordance with the California Environmental Quality Act; 2) Amending the Northeast Industrial ("NEI") Specific Plan to add the Property to the NEI Specific Plan Area with a land use designation of light industrial (SPA22-0003); 3) Approving the prezoning of the Property to NEI Specific Plan Zone (AP20-0003); and 4) Approving the submittal of a petition to the San Joaquin County Local Agency Formation Commission for annexation of the Property to the City of Tracy.

Mayor Young opened the public hearing.

Victoria Lombardo, Senior Planner provided the staff report, presentation and responded to questions.

Fredrik Venter, Traffic Consultant provided information regarding traffic analysis and responded to questions.

Council questions followed.

George Condon, Dermody Properties provided a presentation regarding the Tracy Alliance project and responded to questions.

Council questions followed.

Mary Bean and Phil Ault, First Carbon solutions responded to questions.

Naomi de la Torre shared support for the project and shared her dad is in the Laborers Union and his union job provides great opportunities such as health benefits. Ms. de la Torre spoke about the benefits of union jobs.

Diego Hernandez, Laborer Local 73 supported the Tracy Alliance Project and shared the benefits of the project and the value of their relationship with Dermody Properties.

Raul Hernandez, representing various union trades stated he is an advocate for the Tracy Alliance Project and shared the benefits for the unions and community, career opportunities and urged Council to support the project.

Jason Lindsey, District Council of Iron Workers shared support for the Tracy Alliance Project, spoke about the benefits of jobs and wages and asked Council to vote for the project.

David Coria, Union Sheetmetal Worker shared support for the Tracy Alliance Project, working locally, and growing.

Liz Sutton, Sheetmetal Workers 1014 spoke as advocate for high quality union jobs, shared support for the Tracy Alliance Project and asked Council to approve the project.

Eric Parfrey, on behalf of the Sierra Club provided a 53-page letter from their Attorney that was emailed to Council. In that letter is a response to the City's responses to their Attorney's comments from an April letter. Also included was an opinion from the State Attorney General's office regarding health risk assessment requirements for a case down in Southern California which directly relates to the failure of the EIR to address health risk assessments for phases 2 and 3 of this project. Mr. Parfrey spoke about the impacts to the unincorporated City of Banta and shared concerns regarding the EIR stating it is deeply flawed, having settlement agreements with other cities, attempted to negotiate with the applicant but failed and suggested putting pause on the warehouse projects until the City adopts a warehouse ordinance. If a majority of this Council approves the Tracy Alliance Project without more adequate mitigation measures that are now proposed the Sierra Club will be forced to consider litigation.

Margo Praus, Chair of local Sierra Group spoke about warehouse development exploding in the county, air quality failing, and trucks adding to pollution. The Alliance Project will impose a burden on Banta and they will not receive the benefits. At minimum use California Attorney General standards report in warehousing best practices and hoped Council does not pass this project as it stands now.

Geraldo De La Luz shared support for the project and shared his reality regarding losing his son and the difficulty to sustain a home after that, commutes and minimizes his time trying to fix his family and requested Council vote to pass the project.

Michael Mark, Sheetmetal Workers Local 104 shared support for the project. Need to create jobs, these local construction jobs will help your community. Dermody has been a great partner, have done so many mitigation efforts, in the end we have to build something for your community.

Manuel Zapata stated Council spoke about bringing jobs to Tracy and that translates to retail and fast food and that dooms a lot of people that live in Tracy and have to go over the Altamont to work in the same warehouse jobs that get denied here. Need to bring the jobs here and want to see it built by local residents and see it go union.

Karen Moore supported union workers and stated the pay is bad in this area and is why people commute. Ms. Moore shared after a few years of living in Tracy she is now asthmatic for life, and asthmatic cases are above national average specifically for Banta, and spoke about Banta being disadvantaged because of air quality, environmental issues. Want great union paying jobs, a healthy community, but one does not have to negate the other.

Genna McIntosh, Banta resident asked Council to vote no on the project and stated Banta will not see revenue from this project. The School District will lose money from loss of property tax revenue from loss of land, local jobs will be short lived and Banta will be left with the traffic and pollution.

Patricia Speer, Banta resident urged Council to not approve the project and spoke about the benefits of being a teamster but no reason to put residents at risk. Felt the representative for the project danced around issues regarding air quality. Banta residents don't get to vote for the Tracy Council but can be so impacted by Council's vote.

Dr. Mary Kenefich, League of Woman Voters of San Joaquin County stated she was in receipt of a letter from the League which details the project representing less than admirable values relative to the human population of Banta. Ms. Kenefich is sympathetic to unions and is not anti-labor but they will be employed for 3-4 months but Banta will be destroyed forever.

Vannie Dart opposed annexation of 191 acres. Tracy is known as the triangle city surrounded by agriculture land, and these agriculture parcels have been annexed for warehouses with no improvement to the infrastructure. Already have warehouses and some are sitting empty. Need to preserve our heritage and agriculture. Warehouses bring jobs to people that live out of Tracy. Commercial trucks do not follow traffic laws.

Leann Staus stated quality of life continues to decline due to carelessness of developers. If approved, it will make an existing logistic nightmare bigger. How is it fair to farmer workers. Would Council want something of this magnitude in their back yard, don't the residents deserve the right to say so.

Daniel Helm asked why Tesla and Gillig aren't in Tracy. A tremendous amount of housing has been built but have not created sustainable head of household jobs. Warehouse jobs are ok but don't hold a lot of growth. A previous speaker stated that 75% of this project is going to be manufacturing. Those are the kind of jobs we need, it reduces traffic. Need to bring head of household jobs to Tracy and approves of the project.

Alice English read a statement from Richard English stating after watching a Planning Commission meeting he was disappointed with union and

representatives that spoke. The union workers that live in Tracy should be fighting for long term jobs. This will not improve quality of life but will increase more carbon footprint in our valley. Support unions but cannot support annexing land for warehousing and industrial. Yellow Freight closed and more empty warehouses. Do not approve this project.

Tim Silva stated warehousing has 110% turnover rate. Warehouse workers don't have the benefits that union workers do. Don't need another warehouse in Tracy. See lots of empty warehouses. Orchard Supply is empty and Yellow Freight is belly up. Need manufacturing jobs, need to produce commodities and not move commodities.

Dotty Nygard shared she is a strong union nurse and in full support of union jobs. Do support warehouse growth, it is our revenue producer. Oppose unfettered warehouse growth, not meeting standards. The Attorney General has best practices for warehouse growth which sets standards meeting a lot of the mitigation measures for environmental impacts. Requested putting a pause on the project, write an ordinance that meet standards that will address all of the mitigation measures to ensure they do not jeopardize the health and quality of life for the community of Tracy.

Council comments and questions continued.

It was Council's consensus for staff to bring back a warehouse standard policy for Council consideration.

Karin Schnaider, Assistant City Manager provided a timeline for the request for an ordinance and or policy related to warehousing. The Environmental Sustainability Committee's first meeting is in September. Staff is already starting meetings with EPA and she is co-partnering with California League of Cities on EPA laws for warehousing as it relates to work she is doing on City Manager working group. Timeline is six months to write it up, get it drafted and goes through the 60-90 days via Planning Commission and other things. Probably a nine months timeline before going into effect. Besides for the LAFCo process the applicant is ready to go on phase 1.

Council comments and questions continued.

Mayor Young called a recess at 11:23 p.m.

Mayor Young reconvened the meeting at 11:31 p.m.

Mayor Young closed the public hearing.

ACTION: Motion made by Council Member Bedolla and seconded by Mayor Pro Tem Davis to continue the item to November 7, 2023, so that the applicant can work with staff to explore establishing further mitigation measures in respect to the comments that were made today by members of the public and Council including but not limited to air particulate pollution and traffic in the area. Roll call found Council Members Bedolla, Evans, Mayor Pro Tem Davis and Mayor Young in favor; passed and so ordered. Council Member Arriola opposed.

Motion was made by Council Member Arriola and seconded by Mayor Young to continue Items 3.B and 3.C to the September 5, 2023, meeting due to the late hour. Roll call found all in favor; passed and so ordered.

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3.B City Council review and discuss the Wastewater Master Plan Update**.** – **Item continued to September 5, 2023**

There was no public comment.

3.C. City Council review and discuss the Citywide Water System Master Plan Update. - **Item continued to September 5, 2023**

There was no public comment.

It was Council consensus to forgo Items from the Audience, Staff Items and Council Items due to the lateness of the hour.

3.D. City Council, by motion, designate a voting delegate and up to two alternate voting delegates for the League of California Cities (CalCities) 2023 Annual Conference Business Meeting.

Karin Schnaider, Assistant City Manager provided the staff report.

There was no public comment.

Council Member Arriola nominated Mayor Pro Tem Davis as voting delegate and Mayor Young and Council Member Arriola as alternates.

ACTION: Motion was made by Council Member Arriola and seconded by Council Member Evans to adopt **Resolution 2023-168** designating Mayor Pro Tem Davis as voting delegate and Mayor Young and Council Member Arriola as alternate voting delegates for the League of California Cities (CalCities) 2023 Annual Conference Business Meeting. Roll call found all in favor; passed and so ordered.

3.E City Council appoint, by motion, one member, to the Tracy Finance Committee to fulfill the remainder of the annual term, pursuant to the City Council's appointment procedures.

Sara Cowell, Finance Director provided the staff report.

There was no public comment.

There were no comments from Council.

ACTION: Motion was made by Mayor Pro Tem Davis and seconded by Council Member Evans to appoint Council Member Bedolla to the Tracy Finance Committee to

fulfill the remainder of the annual term, pursuant to the City Council's appointment procedures. Roll call found all in favor; passed and so ordered.

3.F City Council, by motion, appoint five adult City residents to serve on the Environmental Sustainability Commission.

Adrianne Richardson, City Clerk provided the staff report.

The Council subcommittee consisting of Mayor Pro Tem Davis and Council Member Arriola announced their recommendations to the Environmental Sustainability Commission.

Council questions and comments followed.

ACTION: Motion was made by Council Member Arriola and seconded by Mayor Pro Tem Davis to appoint Dotty Nygard, Antonio Acosta and Nicolas Sese to serve 4-year terms that begin on August 16, 2023 and end on December 31, 2027 and Navi Kahlon and James Damasco to serve 2-year terms that begin August 16, 2023 and end December 31, 2025, and add Jenny Wood to the eligibility list for the Environment Sustainability Commission. Roll call found all in favor; passed and so ordered.

3.G City Council appoint, by separate motions, subcommittees of two Councilmembers, and an alternate, to interview applicants to fill the following: 1) four vacancies on the Board of Appeals, 2) one vacancy on the Measure V Residents' Oversight Committee, 3) two vacancies of the Planning Commission, and 4) one vacancy on the Tracy Arts Commission.

Adrianne Richardson, City Clerk provided the staff report.

Council Member Evans proposed the following appointments as subcommittees to interview applicants:
Board of Appeals - Council Member Evans and Council Member Bedolla
Measure V Residents' Oversight Committee - Council Member Bedolla and Mayor Pro Tem Davis
Planning Commission - Council Member Evans and Mayor Pro Tem Davis
Tracy Arts Commission – Council Member Arriola and Mayor Pro Tem Davis

Council discussion followed.

There was no public comment.

ACTION: Motion was made by Mayor Pro Tem Davis and seconded by Council Member Arriola to appoint Council Member Evans and Council Member Bedolla as a two-member Council subcommittee and Council Member Arriola as alternate, to interview applicants to fill four vacancies on the Board of Appeals. Roll call found all in favor; passed and so ordered.

ACTION: Motion was made by Council Member Evans and seconded by Mayor Pro Tem Davis to appoint Council Member Bedolla and Mayor Pro Tem Davis as a two-member Council subcommittee and Council Member Arriola as alternate, to

interview applicants to fill one vacancy on the Measure V Residents' Oversight Committee. Roll call found all in favor; passed and so ordered.

Motion was made by Mayor Young and seconded by Council Member Arriola to appoint Council Member Arriola and Mayor Pro Tem Davis to the Council subcommittee to interview applicants for the Planning Commission and Council Member Evans as the alternate.

Council discussion continued.

ACTION: Motion was made by Council Member Bedolla and seconded by Mayor Pro Tem Davis to appoint Council Member Evans and Mayor Pro Tem Davis as a two-member Council subcommittee and Council Member Arriola as alternate, to interview applicants to fill two vacancies on the Planning Commission. Roll call found Council Members Bedolla, Evans, and Mayor Pro Tem Davis in favor; passed and so ordered. Council Member Arriola and Mayor Young opposed.

ACTION: Motion was made by Mayor Pro Tem Davis and seconded by Council Member Arriola to appoint Council Member Arriola and Council Member Bedolla as a two-member Council subcommittee and Mayor Pro Tem Davis as alternate, to interview applicants to fill one vacancy on the Tracy Arts Commission. Roll call found all in favor; passed and so ordered.

Mayor Young announced the City Attorney and City Manager evaluations have been postponed to tentatively October 17, 2023, Closed Session meeting.

4. ITEMS FROM THE AUDIENCE – None

5. STAFF ITEMS – None

6. COUNCIL ITEMS – None

7. ADJOURNMENT – Time: 12:17 a.m., Wednesday, August 16, 2023.

ACTION: Motion was made by Council Member Arriola and seconded by Mayor Pro Tem Davis to adjourn. Roll call found all in favor; passed and so ordered.

The above agenda was posted at the Tracy City Hall on August 10, 2023. The above are action minutes. A recording is available at the office of the City Clerk.

_____
Mayor

ATTEST:

_____
City Clerk

September 5, 2023

Agenda Item 1.B

RECOMMENDATION

Receive an informational report regarding the Police Department's response to fireworks complaints and official city events during the July 4th weekend.

EXECUTIVE SUMMARY

Building on lessons learned from prior years, the Tracy Police Department developed an operational plan for the July 1st- 4th, 2023 operating period to include both responses to fireworks complaints as well as staffing City of Tracy events during that weekend. This report explains new strategies used this year as well as roadblocks that prevented the deployment from being fully effective. Several suggestions are included for implementation in the future.

BACKGROUND AND LEGISLATIVE HISTORY

In response to a request by City Council Members, this report provides an update on the deployment of Tracy Police Department (TPD) personnel and resources during the July 4th, 2023, weekend, specifically related to fireworks complaints.

The operational plan was built on prior years' responses. One of the key improvements from 2022 was the enhanced presence during the downtown parade, in response to the increase in large-crowd violence on the national level. The parade proved to be a safe family event.

For 2023, TPD saw changes to both the venue and the type of aerial display presented by the Tracy Chamber of Commerce. With only an early pancake breakfast at Lincoln Park, TPD was uncertain of the number of community members who would gather there throughout the day and evening. Nonetheless, TPD staffed the park and Tracy High football stadium with a team of officers, including a drone operator.

The challenges this year included competing missions throughout the July 4th holiday, priority calls for service, and the unknown number of spectators at the new location for the evening drone show. The attendance at Lincoln Park was slightly reduced from prior years, while the stadium was full-estimated attendance between the locations was 4,500.

For 2024, TPD will utilize uniformed officers in unmarked cars to better identify those community members engaging in the use of illegal fireworks. TPD will also use it's social media platforms to remind the community of the "social host" ordinance and the associated fines ($750 for first-time violations and $1,000 for subsequent violations).

ANALYSIS

Details of the deployment model and results.

This year, TPD had a maximum deployment of officers for the July 4th holiday- the highest staffing of any single day of the year. In addition to the three patrol teams, the department deployed four additional teams throughout the day for this event. This included a dayshift parade team, a swing shift team for Tracy High and Lincoln Park, and two teams for the evening

City-wide fireworks enforcement detail. Drone technology was used in the evening and proved beneficial in locating illegal fireworks violations. Professional staff was used to support the drone operations. In addition to the TPD patrol teams, a total of fifty-eight personnel were deployed on July 4th.

In the days leading up to the 4th of July, an additional team was deployed during the evening hours on July 1st, 2nd, and 3rd.

In the days leading up to the July 4th holiday, TPD received 87 fireworks-related calls for service. These calls resulted in one citation, one was referred to the Office of the District Attorney and two resulted in warnings. In the majority of responses (58), officers were either unable to locate or the responsible parties were gone when the officers arrived.

Investigators from our Special Investigations Unit also conducted undercover operations that led to the seizure of dozens of illegal fireworks and two arrests.

On July 4th, TPD received 123 fireworks-related calls for service, for which TPD issued three administrative citations and made three fireworks-related arrests. The issuance of administrative citations and arrests were less than 2022, largely based on the officers being dispatched to a great number of calls for service. In 2024, TPD will not send officers to specific locations but rather assign them to a specific geographical area to decrease the travel time from one incident to another.

In the days following the holiday (July 5th-10th), TPD officers responded to thirty-nine fireworks-related calls for service, resulting in one warning and one citation. Many of the responses resulted in officers not being able to locate the alleged violators (35). TPD continues to respond to fireworks calls for service, though the number of calls has been steadily decreasing.

FISCAL IMPACT

There is no fiscal impact associated with this informational report.

STRATEGIC PLAN

This agenda item relates to the Council's Strategic Plan in the area of Public Safety, specifically Goal #3: Strengthen community safety through crime prevention reduction activities.

ACTION REQUESTED OF THE CITY COUNCIL

Staff recommends that City Council receive the informational report regarding the Police Department's response to fireworks complaints and official City events during the July 4th weekend.

Prepared by: Mario Ysit, Police Lieutenant

Reviewed by: Sekou Millington, Chief of Police
Sara Cowell, Director of Finance
Karin Schnaider, Assistant City Manager

Approved by: Midori Lichtwardt, Interim City Manager

September 5, 2023

Agenda Item 1.C

RECOMMENDATION

Receive an informational report regarding the Police Department's year-to-date part one crime statistics of homicide, rape, robbery, and aggravated assaults.

EXECUTIVE SUMMARY

This report provides an Executive Summary regarding the Tracy Police Departments (TPD) violent crime statistics on homicides, rape, robbery, and aggravated assaults for the first 6 calendar months of 2023. The attached crime statistic report provides a breakdown of each category per month with neighboring cities comparisons and a graph providing an overall Per Capita report comparison.

BACKGROUND AND LEGISLATIVE HISTORY

Tracy City Council Member Dan Evans requested an on-going update report to be provided to Council regarding violent crime. This report will be provided as an informational document with monthly statistics unless otherwise requested. This first report will encapsulate 6 months of data for January to June 2023. This report is specific to violent crime categories of homicide, rape, robbery, and aggravated assaults.

In summary, the Tracy Police Department (TPD) has had an increase in both homicides and robbery and a decrease in rape and aggravated assaults.

Areas of note or clarification:

- Homicides within Tracy increased from 5 total in 2022 to 6 victims (in 5 incidents) in 2023 year to date. The homicide investigations showed that these were targeted incidents specific to those involved. At this point, there does not appear to be a community danger or acts of random violence as the majority of the homicides were domestic violence related in nature.
- Attachment A is a Per Capita chart which is a "running log" so it will continue to go up for second half of 2023.

Highlights:

- 39 Guns were seized in first 6 months.
- 655 FLOCK Automated License Plate Reader (ALPR) camera alerts resulting in 46 arrests and many investigative leads.

TPD continues to proactively address crime trends through prevention intervention and enforcement. During this reporting period, TPD deployment strategies, such as, directed patrol units were deployed in specific sensitive areas based on crime trends or intelligence.

TPD partnered with San Joaquin County Probation to conduct compliance and verification contacts of probationers within the City.

TPD partnered and continues to host a dedicated staff member of San Joaquin County Victim/Witness program via San Joaquin DA's office at TPD to offer victims of violent crime resources to assist them and provide education in efforts to prevent future crimes.

TPD partnered with the Chest of Hope on a newly developed initiative through the California Governor's Office of Emergency Services on a Domestic Violence Response Team Program. TPD is waiting on final approval to begin the program which would consist of the following:

- TPD would assist Chest of Hope with the maintenance and improvement of protocols that respond to incidents of domestic violence throughout the City of Tracy.
- The coordination of training for law enforcement officers and 9-1-1- Dispatchers associated both within, and outside of TPD, as applicable to the City of Tracy.
- Collaborating in the creation of practical administrative tools and resources that will serve as a resource for officers responding to incidents of domestic violence.
- Collaborating in the creation of practical outreach materials that will be available for distribution by law enforcement officers to domestic violence victims/survivors.
- A designated officer has been assigned to serve as a point of contact for Chest of Hope to assist in maintaining a process for inter-agency accountability in an effort to decrease aggravated assaults.

ANALYSIS

TPD continues to aggressively seek alternative funding programs from both State and Federal grants to assist in the implementation of a Real Time Information Center (RTIC). This program is one of the Council Strategic Priority Goals for the 2023-2025 plan. Benefits of an RTIC include:

- Force multiplier by utilizing technology.
- Real time intelligence video room.
- Integration of technology (Fleet 3, Flock, and Drones).
- Integrated to social media and LE query platforms.
- Assist in adequate and effective resource response.

TPD is partnering with San Joaquin County District Attorney's Office in a newly organized task force/program F.I.R.S.T. (Fentanyl Intervention and Response Safety Team). This program will focus on prevention through education, training for enforcement and adequate prosecutorial process for drug dealers. Drugs often have a nexus to acts of violent crime.

In addition, TPD is partnering with Federal allies and taskforces to assist in the investigations and apprehension of various violent crimes suspects.

Public may access crime statistics using the following links:

https://tracypd.com/crime-mapping
https://www.crimemapping.com/Alerts
https://www.crimemapping.com/map/agency/377

FISCAL IMPACT

The programs outlined in this report are funded through the Tracy Police Department operations budget.

STRATEGIC PLAN

This agenda item relates to the Council's Strategic Plan in the area of Public Safety, specifically Goal #3: Strengthen community safety through crime prevention reduction activities.

ACTION REQUESTED OF THE CITY COUNCIL

Staff recommends that City Council receive the informational report regarding the Police Department's Year-to-Date Part One Crime Statistics of Homicide, Rape, Robbery and Aggravated Assaults.

Prepared by: Octavio Lopez, Police Captain

Reviewed by: Sekou Millington, Chief of Police
Sara Cowell, Director of Finance
Karin Schnaider, Assistant City Manager

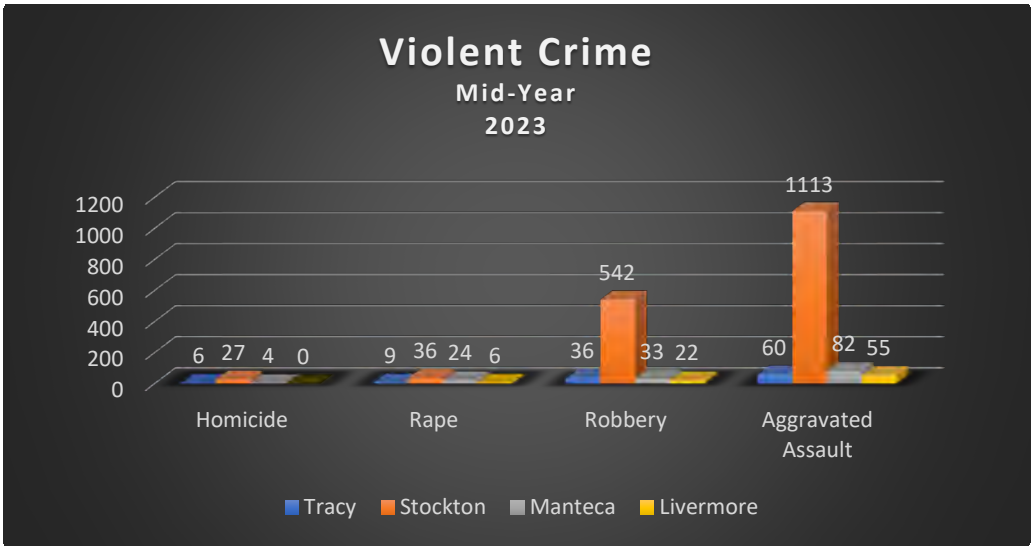
Approved by: Midori Lichtwardt, Interim City Manager

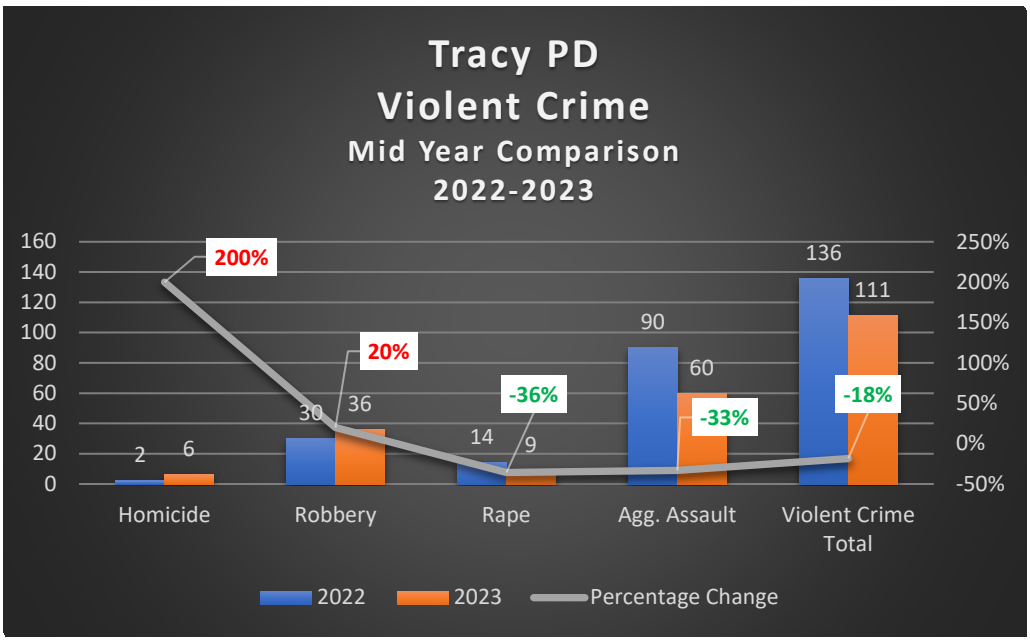
Attachments:
Attachment A - Crime Statistics

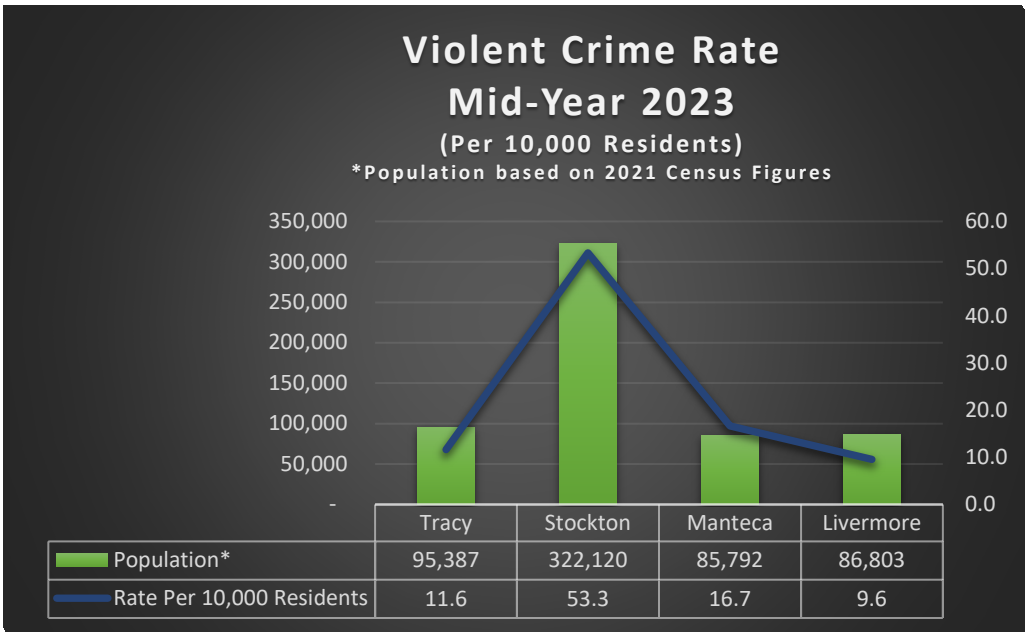
CRIME STATISTICS

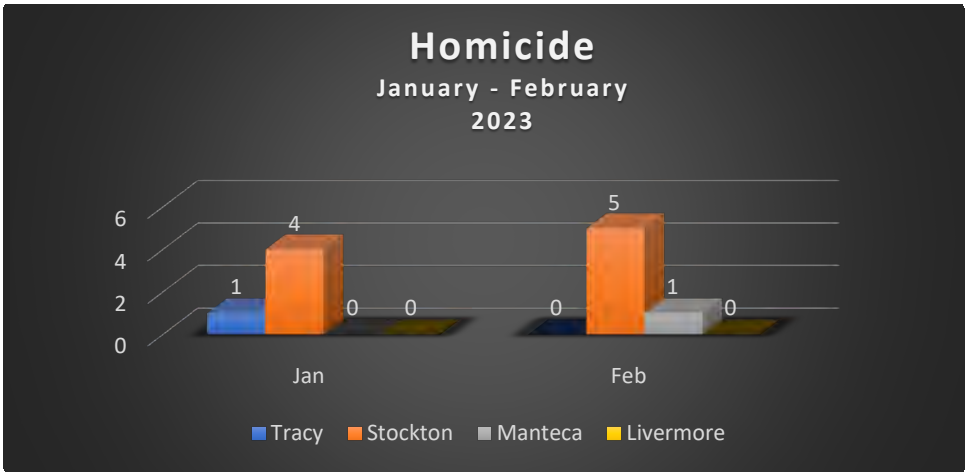
January-June 2023

Homicide, Rape, Robbery, Aggravated Assault


Violent Crime
Mid-Year
2023
1200
1000
800
600
400
200
0
6 27 4 0
9 36 24 6
36 542 33 22
60 1113 82 55
Homicide
Rape
Robbery
Aggravated Assault
Tracy
Stockton
Manteca
Livermore

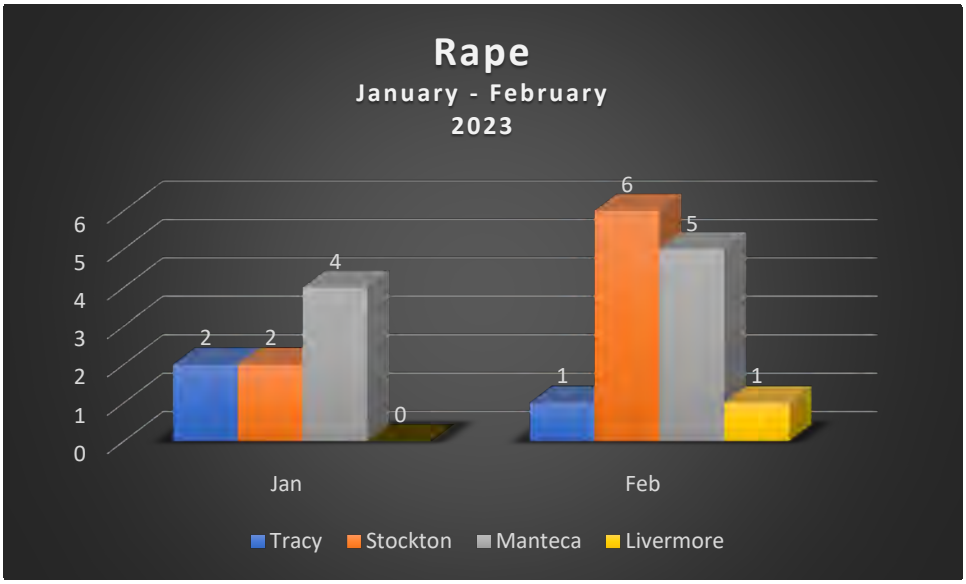

Tracy PD
Violent Crime
Mid Year Comparison
2022-2023
160
140
120
100
80
60
40
20
0
250%
200%
150%
100%
50%
0%
-50%
200%
20%
-36%
-33%
-18%
2 6
30 36
14 9
90 60
136 111
Homicide
Robbery
Rape
Agg. Assault
Violent Crime Total
2022
2023
Percentage Change

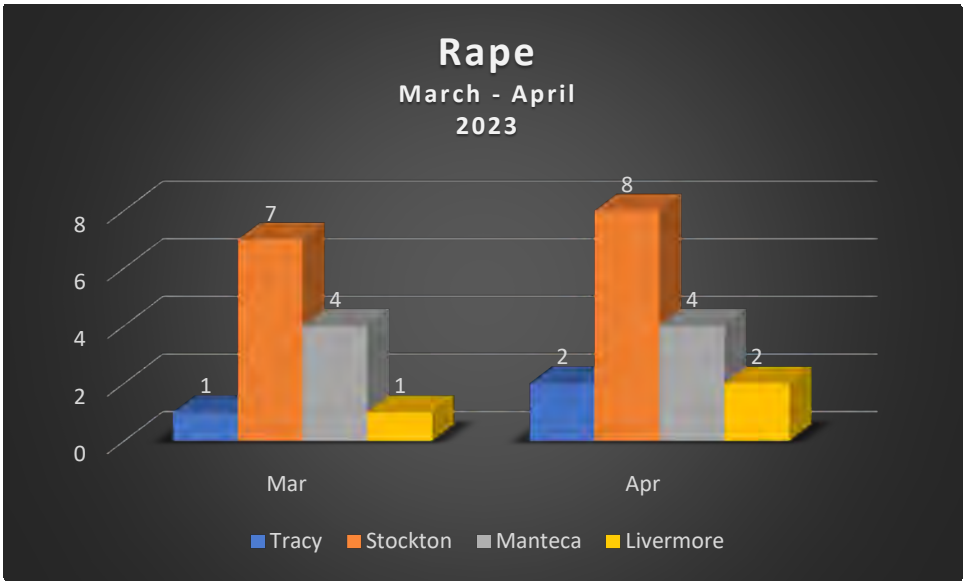

Violent Crime Rate
Mid-Year 2023
(Per 10,000 Residents)
*Population based on 2021 Census Figures
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Tracy
Stockton
Manteca
Livermore
Population* 95,387 322,120 85,792 86,803
Rate Per 10,000 Residents 11.6 53.3 16.7 9.6

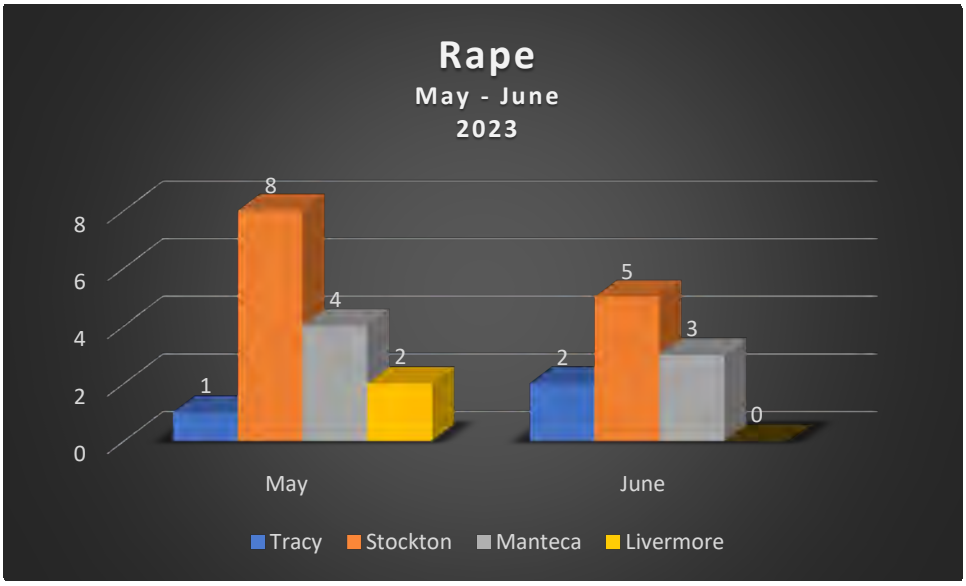

Homicide
January - February
2023
6
4
2
0
1
4
0
0
0
5
1
0
Jan
Feb
Tracy
Stockton
Manteca
Livermore


Homicide
March - April
2023
8
6
4
2
0
0
8
0
0
1
6
1
0
Mar
Apr
Tracy
Stockton
Manteca
Livermore

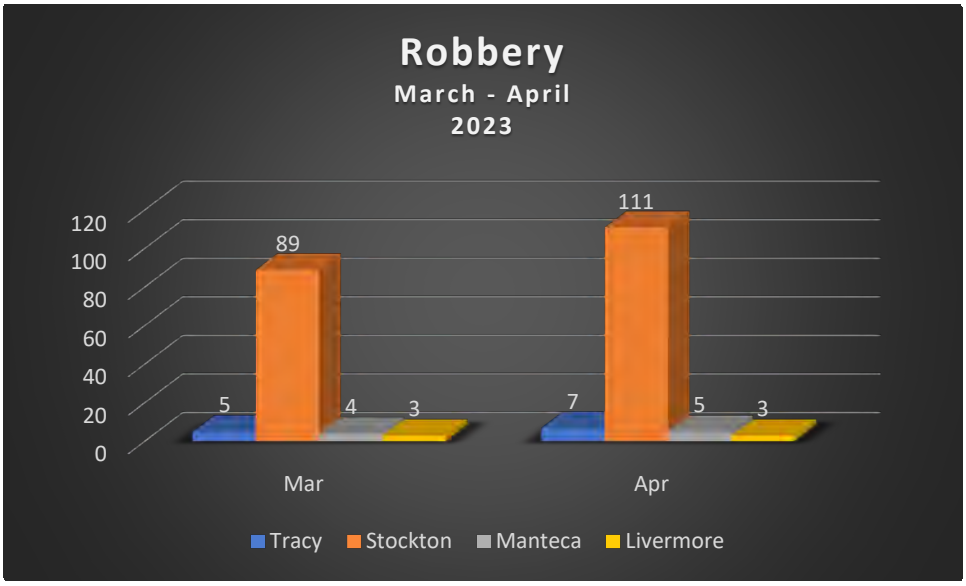

Homicide
May - June
2023
3
2.5
2
1.5
1
0.5
0
3
3
0
0
1
1
2
0
May
June
Tracy
Stockton
Manteca
Livermore

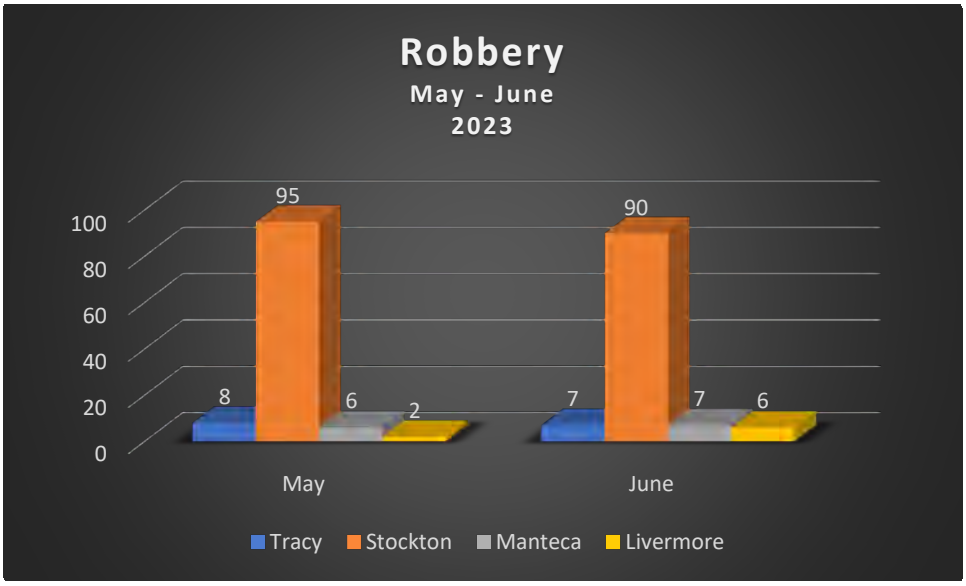

Rape
January - February
2023
6
5
4
3
2
1
0
2
2
4
0
1
6
5
1
Jan
Feb
Tracy
Stockton
Manteca
Livermore

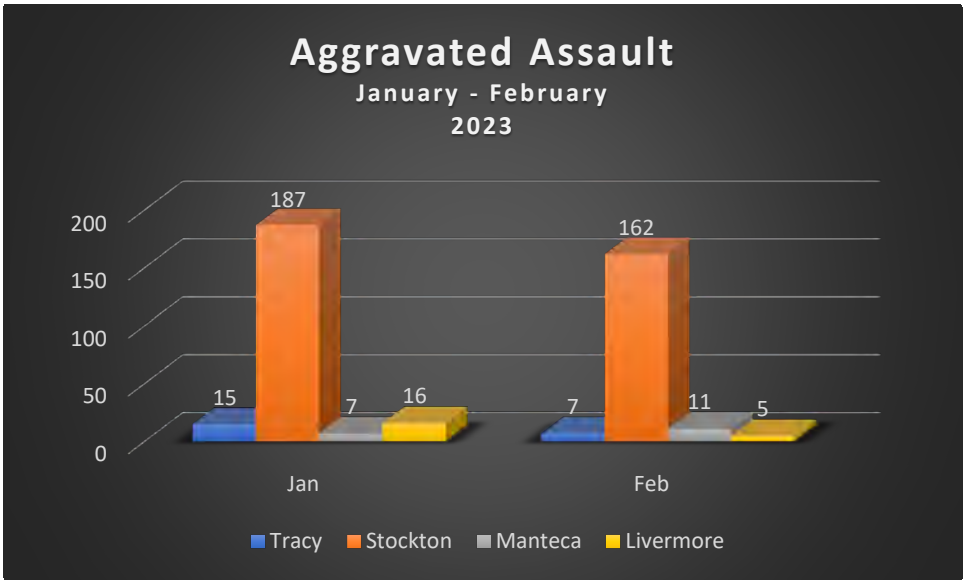

Rape
March - April
2023
8
6
4
2
0
1
7
4
1
2
8
4
2
Mar
Apr
Tracy
Stockton
Manteca
Livermore

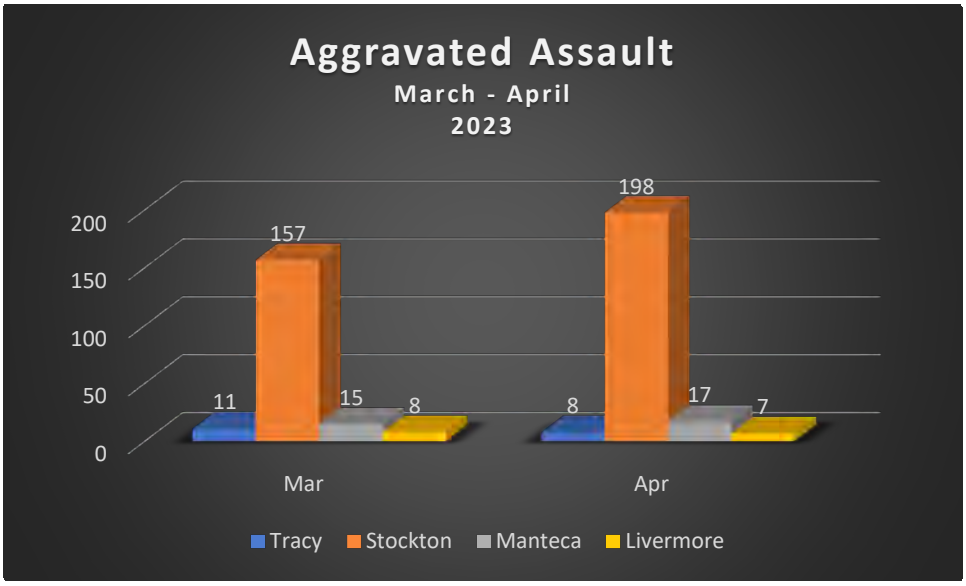

Rape
May - June
2023
8
6
4
2
0
1
8
4
2
2
5
3
0
May
June
Tracy
Stockton
Manteca
Livermore

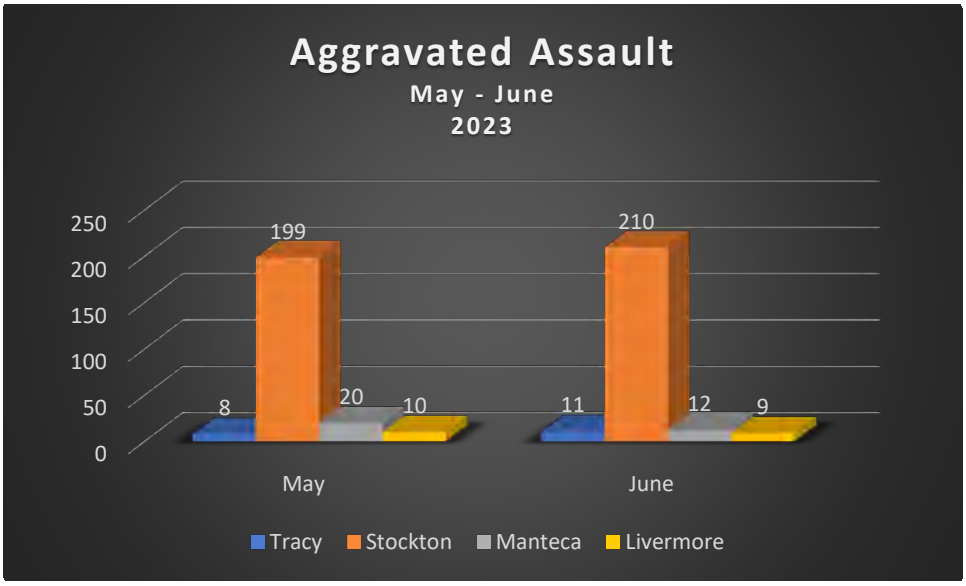

Robbery
January - February
2023
100
80
60
40
20
0
75
82
6
6
4
3
5
4
Jan
Feb
Tracy
Stockton
Manteca
Livermore

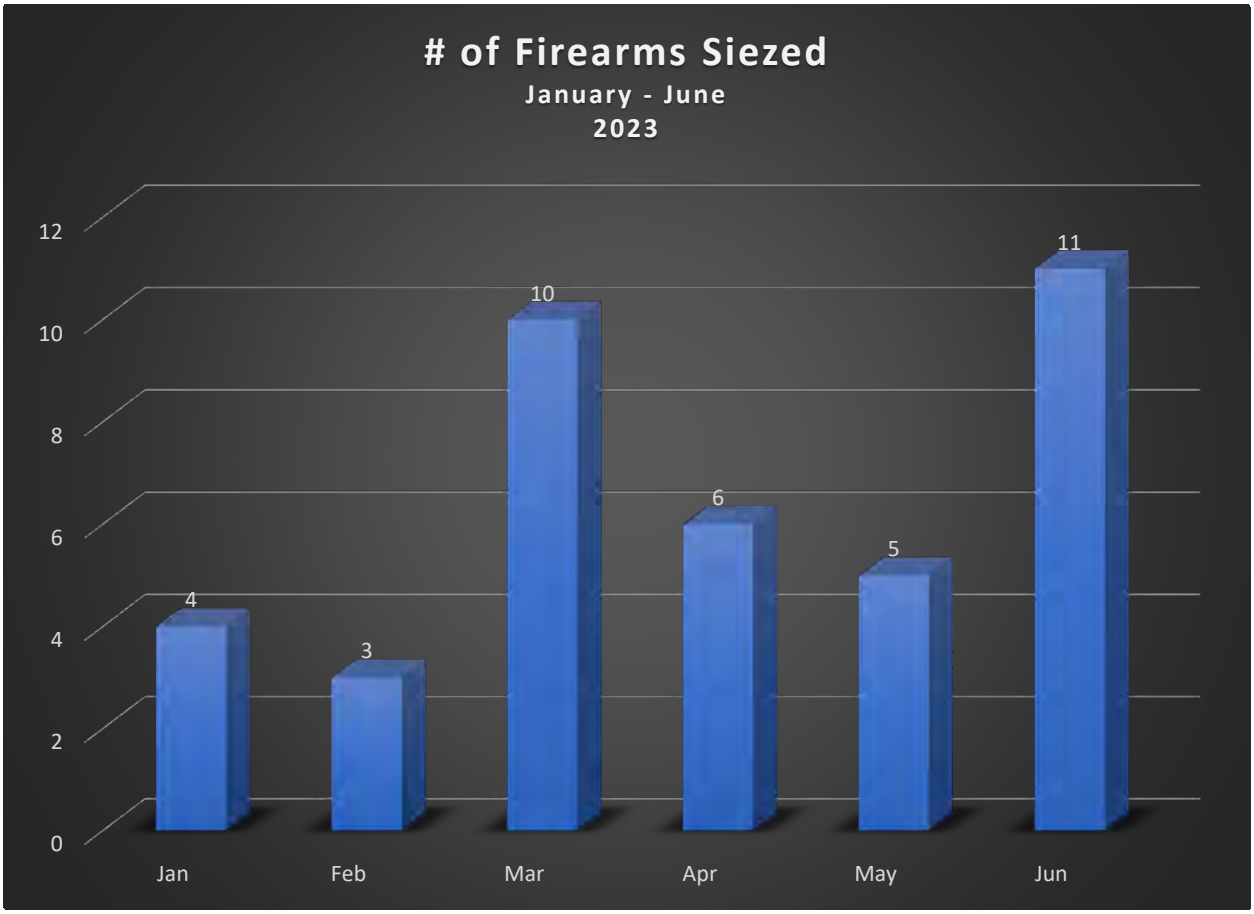

Robbery
March - April
2023
120
100
80
60
40
20
0
89
111
5
4
3
7
5
3
Mar
Apr
Tracy
Stockton
Manteca
Livermore

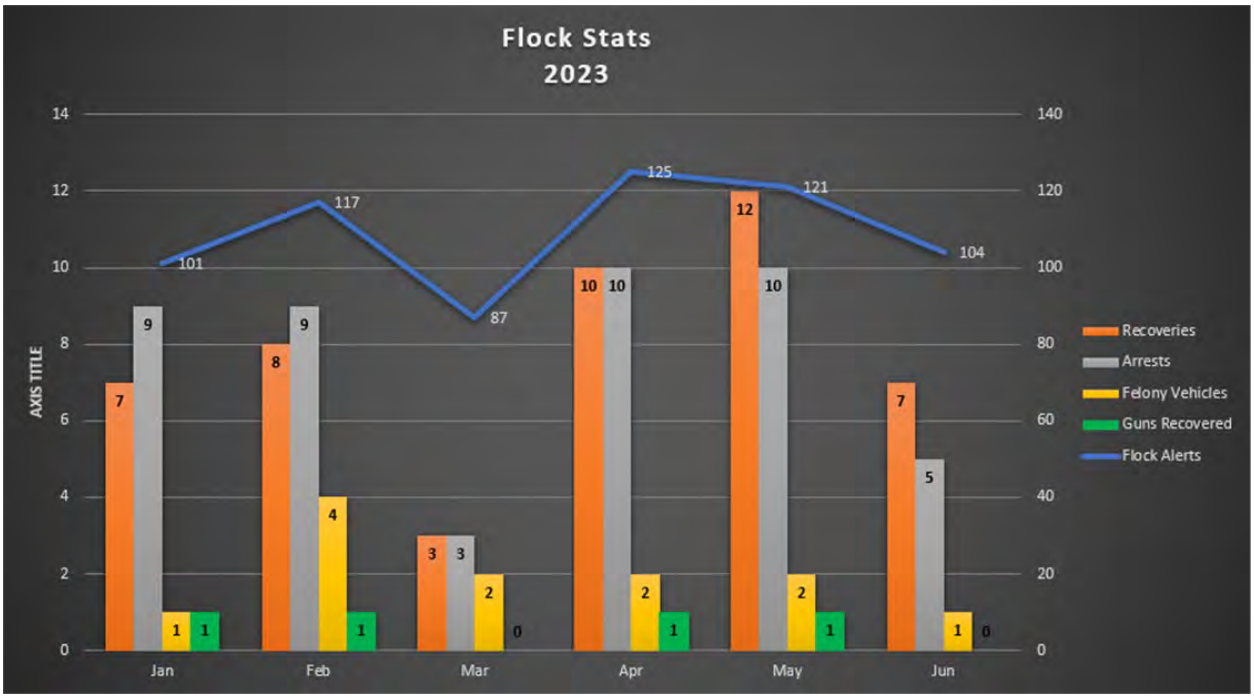

Robbery
May - June
2023
100
80
60
40
20
0
95
90
8
6
2
7
7
6
May
June
Tracy
Stockton
Manteca
Livermore


Aggravated Assault
January - February
2023
200
150
100
50
0
187
15
7
16
162
7
11
5
Jan
Feb
Tracy
Stockton
Manteca
Livermore


Aggravated Assault
March - April
2023
200
150
100
50
0
157
11
15
8
198
8
17
7
Mar
Apr
Tracy
Stockton
Manteca
Livermore


Aggravated Assault
May - June
2023
250
200
150
100
50
0
199
8
20
10
210
11
12
9
May
June
Tracy
Stockton
Manteca
Livermore


# of Firearms Siezed
January - June
2023
12
10
8
6
4
2
0
4
3
10
6
5
11
Jan
Feb
Mar
Apr
May
Jun


Flock Stats
2023
AXIS TITLE
14
12
10
8
6
4
2
0
140
120
100
80
60
40
20
0
101
117
87
125
121
104
7
9
1
1
8
9
4
1
3
3
2
0
10
10
2
1
12
10
2
1
7
5
1
0
Jan
Feb
Mar
Apr
May
Jun
Recoveries
Arrests
Felony Vehicles
Guns Recovered
Flock Alerts

September 5, 2023

Agenda Item 1.D

RECOMMENDATION

Staff recommends that the City Council adopt a resolution approving the execution of a two-year agreement with ClearGov, Inc. for the licensing of ClearPlans, a digital strategic planning and performance management solution.

EXECUTIVE SUMMARY

The City of Tracy is proposing to expand its existing software license with ClearGov, Inc. to include its new strategy and performance management solution, ClearPlans. The digital tool will help the City record, track, and report out on the progress of the City Council's Strategic Priorities, and other projects of interest, via a publicly accessible platform. ClearGov implemented the City's digital budget book and capital budgeting software services and technology in January 2023 and released its new ClearPlans solution in the summer of 2023. The contract value of the two solutions combined is roughly $78,000, which exceeds the City Manager's signing authority. Therefore, staff is requesting that the City Council approve a licensing agreement with ClearPlans in the not-to-exceed amount of $20,000 per fiscal year, for a term of two years, with the option to extend for an additional year(s) by the City Manager.

BACKGROUND AND LEGISLATIVE HISTORY

In early 2023, staff began researching different strategic planning and performance management solutions and participated in demonstrations with four software companies, including: Envisio, Achieveit, Cascade, and ClearGov. Following the software demonstrations and internal discussions, staff recommended that the City procure ClearPlans for the following reasons:

- The City has an existing agreement with ClearGov for the Digital Budget Handbook.
- The ClearPlans module integrates with the digital budget handbook and can produce valuable data and key performance indicators.
- The platform is designed for public agencies and has a user-friendly dashboard that tracks progress via metrics, graphs, charts, and other visuals.
- There are flexible collaboration features and push notifications to team members.
- The application is mobile and optimized for ADA guidelines.
- There are unique customization and reporting features.
- The annual service fee is less than $20,000, which was less than other comparable solutions.
- The application meets IT security standards.
- ClearGov provides single sign-on functionality.

The City's existing agreement with ClearGov for the digital budget book and capital budgeting software is $58,400. The set up and service fee for ClearPlans in Fiscal Year 2023-2024 is $19,800. Combined, the proposed total contract amount with ClearGov for FY 2023-24 is $78,200, which surpasses the City Manager's signing authority. Under these

circumstances it is not in the best interest of the City to comply with the request for proposal procedure. Therefore, staff is requesting that the City Council adopt a resolution approving an agreement with ClearGov, Inc. for the licensing of ClearPlans, pursuant to Tracy Municipal Code Section 2.20.140(b).

FISCAL IMPACT

The Consultant's total compensation shall not exceed $20,000 per fiscal year, for a term of two years, with the option to extend for an additional year(s) by the City Manager following a written determination that the Consultant has satisfactorily met all the requirements of the agreement. Funding for this agreement is included in the FY 2023-24 operating budget.

STRATEGIC PLAN

This agenda item supports the City Council's FY 2021-2023 Governance Strategic Priority:

Goal 4 – Enhance community engagement through technology.

ACTION REQUESTED OF THE CITY COUNCIL

Staff recommends that the City Council adopt a resolution approving the execution of a two-year agreement with ClearGov, Inc. for the licensing of ClearPlans, a digital strategic planning and performance management solution.

Prepared by: Vanessa Carrera, Assistant to the City Manager

Reviewed by: Karin Schnaider, Assistant City Manager
Norbert Ruijling, Chief Innovation Officer
Sara Cowell, Finance Director

Approved by: Midori Lichtwardt, Interim City Manager

Attachments:

A – ClearGov, Inc. Agreement for ClearPlans solution

ClearGov

2 Mill & Main; Suite 630; Maynard, MA 01754

Service Order

Created by	Ryan Wilson
Contact Phone	(901) 937-9735
Contact Email	rwilson@cleargov.com

Order Date	Aug 1, 2023
Order valid if signed by	**Sep 8, 2023**

Customer Information

Customer	City of Tracy	**Contact**	Vanessa Carrera	**Billing Contact**	Vanessa Carrera
Address	333 Civic Center Plaza	**Title**	Assistant to the City Manager	**Title**	Assistant to the City Manager
City, St, Zip	Tracy, CA 95376	**Email**	Vanessa.Carrera@cityoftracy.org	**Email**	Vanessa.Carrera@cityoftracy.org
Phone	209-831-6000			**PO # (If any)**	

The Services you will receive and the Fees for those Services are...

Set up Services	Tier/Rate	Service Fees
ClearGov Setup: Includes activation, onboarding and training for ClearGov solutions	Tier 4	$ 4,500.00
Total ClearGov Setup Service Fee - Billed ONE-TIME		**$ 4,500.00**
Subscription Services	**Tier**	**Service Fees**
ClearGov ClearPlans - Civic Edition	Tier 4	$ 14,400.00
Single Sign-On Authentication - Add-on	Tier 4	$ 900.00
Total ClearGov Subscription Service Fee - Billed ANNUALLY IN ADVANCE		**$ 15,300.00**

ClearGov will provide your Services according to this schedule...

Period	Start Date	End Date	Description
Setup	Sep 1, 2023	Sep 1, 2023	ClearGov Setup Services
Pro-Rata	Sep 1, 2023	Jun 30, 2024	ClearGov Subscription Services
Initial	Jul 1, 2024	Jun 30, 2025	ClearGov Subscription Services

To be clear, you will be billed as follows...

Billing Date(s)	Amount(s)	Notes
Sep 6, 2023	$ 4,500.00	One Time Setup Fee
Sep 6, 2023	$ 12,000.00	10 Month Pro-Rata Subscription Fee
Jul 1, 2024	$ 14,400.00	Annual Subscription Fee

Additional subscription years and/or renewals will be billed annually in accordance with pricing and terms set forth herein

Billing Terms and Conditions		
Valid Until	**Sep 8, 2023**	Pricing set forth herein is valid only if ClearGov Service Order is executed on or before this date.
Payment	**Net 30**	All invoices are due Net 30 days from the date of invoice.
Rate Increase	3% per annum	After the Initial Service Period, the Annual Subscription Service Fee shall automatically increase by this amount.

General Terms & Conditions	
Customer Satisfaction Guarantee	During the first thirty (30) days of the Service, Customer shall have the option to terminate the Service, by providing written notice. In the event that Customer exercises this customer satisfaction guarantee option, such termination shall become effective immediately and Customer shall be eligible for a full refund of the applicable Service Fees.
Statement of Work	ClearGov and Customer mutually agree to the ClearGov Service activation and onboarding process set forth in the attached Statement of Work.
Taxes	The Service Fees and Billing amounts set forth above in this ClearGov Service Order **DO NOT** include applicable taxes. In accordance with the laws of the applicable state, in the event that sales, use or other taxes apply to this transaction, ClearGov shall include such taxes on applicable invoices and Customer is solely responsible for such taxes, unless documentation is provided to ClearGov demonstrating Customer's exemption from such taxes.
Term & Termination	Subject to the termination rights and obligations set forth in the ClearGov Service Agreement, this ClearGov Service Order commences upon the Order Date set forth herein and shall continue until the completion of the Service Period (s) for the Service(s) set forth herein. Each Service shall commence upon the Start Date set forth herein and shall continue until the completion of the applicable Service Period. To be clear, Customer shall have the option to Terminate this Service Order on an annual basis by providing notice at least sixty (60) days prior to the end of the then current Annual Term.
Auto-Renewal	After the Initial Period, the Service Period for any ClearGov Annual Subscription Services shall automatically renew for successive annual periods (each an ***"Annual Term"***), unless either Party provides written notice of its desire not to renew at least sixty (60) days prior to the end of the then current Annual Term.
Agreement	This ClearGov Service Order shall become binding upon execution by both Parties. The signature below affirms your commitment to pay for the Service(s) ordered in accordance with the terms set forth in this ClearGov Service Order and also acknowledges that you have read and agree to the terms and conditions set forth in the attached BCM Service Agreement. This Service Order incorporates by reference the terms of such BCM Service Agreement. In event of any conflict between the terms set forth in this ClearGov Service Order and any terms or conditions set forth in the ClearGov BCM Service Agreement, the terms of this ClearGov Service Order shall prevail.

Customer	
Signature	
Name	
Title	

ClearGov, Inc.	
Signature	Bryan A Burdick
Name	Bryan A. Burdick
Title	President

Customer	
Signature	
Name	
Title	

ClearGov, Inc.	
Signature	Dominic Bongo
Name	Dom Bongo
Title	CFO

Please e-mail signed Service Order to Orders@ClearGov.com or Fax to (774) 759-3045

Customer Upgrades (ClearGov internal use only)			
This Service Order is a Customer Upgrade	Yes	**If Yes: Original Service Order Date**	11/2/22

Statement of Work

This Statement of Work outlines the roles and responsibilities by both ClearGov and Customer required for the activation and onboarding of the ClearGov Service. ClearGov will begin this onboarding process upon execution of this Service Order. All onboarding services and communications will be provided through remote methods - email, phone, and web conferencing.

ClearGov Responsibilities

- ClearGov will activate ClearGov Service subscription(s) as of the applicable Start Date(s). ClearGov will create the initial Admin User account, and the Customer Admin User will be responsible for creating additional User accounts.

- ClearGov will assign an Implementation Manager (IM) responsible for managing the activation and onboarding process. ClearGov IM will coordinate with other ClearGov resources, as necessary.

- ClearGov IM will provide a Kickoff Call scheduling link to the Customer's Primary Contact. Customer should schedule Kickoff Call within two weeks after the Service Order has been executed.

- If Customer is subscribing to any products that require data onboaording:
  - ClearGov IM will provide a Data Discovery Call scheduling link to the Customer's Primary Contact. Customer should schedule Data Discovery Call based on the availability of Customer's staff.
  - ClearGov will provide Customer with financial data requirements and instructions, based on the ClearGov Service subscription(s).
  - ClearGov will review financial data files and confirm that data is complete, or request additional information, if necessary. Once complete financial data files have been received, ClearGov will format the data, upload it to the ClearGov platform and complete an initial mapping of the data.
  - After initial mapping, ClearGov will schedule a Data Review call with a ClearGov Data Onboarding Consultant (DOC), who will present how the data was mapped, ask for feedback, and address open questions. Depending upon Customer feedback and the complexity of data mapping requests, there may be additional follow-up calls or emails required to complete the data onboarding process.

- ClearGov will inform Customer of all training, learning, and support options. ClearGov recommends all Users attend ClearGov Academy training sessions and/or read Support Center articles before using the ClearGov Service to ensure a quick ramp and success. As needed, ClearGov will design and deliver customized remote training and configuration workshops for Admins and one for End Users - via video conference - and these sessions will be recorded for future reference.

- ClearGov will make commercially reasonable efforts to complete the onboarding/activation process in a timely fashion, provided Customer submits financial data files and responds to review and approval requests by ClearGov in a similarly timely fashion. Any delay by Customer in meeting these deliverable requirements may result in a delayed data onboarding process. Any such delay shall not affect or change the Service Period(s) as set forth in the applicable Service Order.

Customer Responsibilities

- Customer's Primary Contact will coordinate the necessary personnel to attend the Kickoff and Data Discovery Calls within two weeks after the Service Order has been executed. If Customer needs to change the date/time of either of these calls, the Primary Contact will notify the ClearGov IM at least one business day in advance.

- If Customer is subscribing to any products that require data onboaording:
  - Customer will provide a complete set of requested financial data files (revenue, expense, chart of accounts, etc.) to ClearGov in accordance with the requirements provided by ClearGov.
  - Customer's Primary Contact will coordinate the necessary personnel to attend the Data Discovery and Data Review calls. It is recommended that all stakeholders with input on how data should be mapped should attend. Based on these calls and any subsequent internal review, Customer shall provide a detailed list of data mapping requirements and requested changes to data mapping drafts in a timely manner, and Customer will approve the final data mapping, once completed to Customer's satisfaction.

- Customer will complete recommended on-demand training modules in advance of customized training & configuration workshops.

- Customer shall be solely responsible for importing and/or inputting applicable text narrative, custom graphics, performance metrics, capital requests, personnel data, and other such information for capital budget, personnel budget, budget books, projects, dashboards, etc.

This ClearGov BCM Service Agreement (the ***"Agreement"***) is made and entered into by and between ClearGov, Inc. (***"ClearGov"***), a Delaware corporation with its principal offices at 2 Mill & Main; Suite 630, Maynard, MA 01754 and ***Customer*** (as defined in the applicable ClearGov Service Order) (each a ***"Party"*** and collectively the ***"Parties"***). This Agreement governs the terms and conditions under which Customer may utilize the ClearGov Service as set forth herein and as specified in one or more applicable ClearGov Service Order(s) executed by Customer in connection herewith and incorporated herein (the ***"ClearGov Service Order(s)"***). In event of any conflict between the terms set forth in this Agreement and any terms or conditions of any applicable ClearGov Service Order, the terms of the applicable ClearGov Service Order shall prevail.

WHEREAS ClearGov owns and operates the ClearGov Service, a Web-based SaaS solution that includes a variety of ClearGov App(s) and provides various features and functionality via such ClearGov App(s); and

WHEREAS Customer wishes to utilize the ClearGov Service in order to convey fiscal budget, key metrics and other information to the public as well as to leverage the functionality of such ClearGov App(s);

NOW THEREFORE, in consideration of the mutual covenants contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, ClearGov and Customer hereby agree as follows:

1) **Definitions.** Capitalized terms used in this Agreement, and not otherwise defined herein, shall have the following meanings:
   - 1.1) ***"Account"*** means an access point for the ClearGov Service that requires registration by the Customer.
   - 1.2) ***"ClearGov API"*** means an application programming interface that provides access to specified content and functionality within certain ClearGov Apps.
   - 1.3) ***"ClearGov Apps"*** means collectively all of the Web applications hosted by ClearGov and available via the ClearGov Service, including but not limited to the applications listed in any applicable ClearGov Service Order. All features, functionality, reports, etc. for each ClearGov App are included as material elements of the applicable ClearGov App. ClearGov may modify, combine, add or delete ClearGov Apps from the ClearGov Service from time to time at its sole discretion, provided that in the event that ClearGov terminates or deletes any ClearGov App to which Customer is actively subscribing, ClearGov shall provide a pro-rata refund for the applicable portion of the Subscription Service Fee for the remainder of the then current Service Period.
   - 1.4) ***"ClearGov Data"*** means any aggregated and normalized key metrics and benchmarking data collected by ClearGov for the delivery of the ClearGov Service.
   - 1.5) ***"ClearGov Service"*** means the complete set of ClearGov software and related materials including but not limited to the ClearGov Apps, ClearGov Data, ClearGov Web Site, the Documentation and the Software.
   - 1.6) ***"ClearGov Web Site"*** means the Web site owned and operated by ClearGov and made available at the following URL: http://www.ClearGov.com and/or any successor site(s).
   - 1.7) ***"Customer PDF"*** means one or more PDF files of Customer's digital documents created by Customer using the ClearGov Apps.
   - 1.8) ***"Customer Data"*** means any data provided to ClearGov by or on behalf of Customer or any data entered or uploaded into the ClearGov Service by or on behalf of Customer, including Sensitive Data entered or provided by Customer. Customer Data specifically excludes ClearGov Data as well as any anonymized, customized, modified or derivative works related to the Customer Data.
   - 1.9) ***"Customer State"*** means the state, commonwealth or territory in which the Customer is located.
   - 1.10) ***"Customer Web Site"*** means any Web site owned and operated by Customer.
   - 1.11) ***"Documentation"*** means any accompanying proprietary documentation made available to Customer by ClearGov for use with the ClearGov Service, including any documentation available online or otherwise.
   - 1.12) ***"Sensitive Data:*** means any Customer Data that may reasonably be deemed sensitive and/or private in nature, including but not limited to personal wage garnishments, individual healthcare-related expenses, data protected by HIPAA, etc.
   - 1.13) ***"Software"*** means the source code and/or other code which are material elements of the ClearGov Apps and ClearGov Service.

2) **Service Usage & Licenses.**
   - 2.1) Account Password and Security. Customer shall protect its passwords and take full responsibility for Customer's own, as well as any third-party, use of the Customer Account(s). Customer is solely responsible for any and all activities that occur under such Customer Account(s), except for any

activities performed by ClearGov as set forth herein. Customer agrees to notify ClearGov immediately upon learning of any unauthorized use of a Customer Account or any other breach of security. From time to time, ClearGov's support staff may log in to the Customer Account in order to maintain or improve service, including providing Customer assistance with technical or billing issues. Customer hereby acknowledges and consents to such access.

2.2) ClearGov License. Subject to the terms and conditions of this Agreement and as specifically set forth in the applicable ClearGov Service Order(s), ClearGov grants Customer a limited, revocable, non-exclusive, non-transferable, non-distributable, worldwide license to utilize the ClearGov Service for the following functionality:

a) Content Delivery. Customer may integrate, link and publish applicable public-facing content from the applicable ClearGov Apps within one or more Customer Web Site(s);

b) Application Access. Customer may access the ClearGov Apps via Customer's Account to utilize the functionality provided within such ClearGov Apps; and

c) API Access. Customer may access the ClearGov API to distribute and display public-facing content from the ClearGov Apps within one or more Customer Web Site(s).

3) Term and Termination.

3.1) Term. The duration of this Agreement shall be defined in accordance with the Term set forth in all applicable Service Order(s). The Term shall commence upon the Start Date set forth in the first ClearGov Service Order executed between the Parties and shall continue in full force and effect until the termination or expiration of all applicable ClearGov Service Order(s) (the ***"Term"***).

3.2) Termination. This Agreement and/or any applicable ClearGov Service Order may be terminated prior to the expiration of the term as follows:

a) Either Party may terminate this Agreement if the other Party fails to cure a material breach of the Agreement within fifteen (15) days after receipt of written notice thereof.

b) Either Party may terminate this Agreement if the other Party is involved in insolvency proceedings, receivership, bankruptcy, or assignment for the benefit of creditors.

3.3) Obligations. Upon expiration or termination of this Agreement:

a) Each Party shall promptly return to the other all of the Confidential Information of the other Party in its possession or control;

b) Customer shall cease use of the ClearGov Service and shall remove all links from the Customer Web Site(s) to any content provided by the ClearGov Apps, provided that Customer may continue to provide access to any Customer PDF(s). Customer shall be solely responsible for hosting and delivering such Customer PDF(s) as well as any ongoing costs for doing so; and

c) Any outstanding fees shall become immediately due and payable, and termination of this Agreement shall not relieve Customer from its obligation to pay to ClearGov any such fees.

3.4) Survival. Sections 3.3, 3.4 and 4 through 8 inclusive shall survive any termination or expiration of this Agreement.

4) Fees and Billing.

4.1) Fees. Customer shall pay the Fees in accordance with the terms set forth in the applicable ClearGov Service Order.

4.2) Interest and Collections. Customer will be charged $50 for payments by checks that are returned due to insufficient funds. Any late payments will accrue interest equal to one and one-half percent (1.5%) per month, or the maximum amount allowable under law, whichever is less, compounded monthly. ClearGov shall be entitled to recover all reasonable costs of collection (including agency fees, attorneys' fees, in-house counsel costs, expenses and costs) incurred in attempting to collect payment from Customer.

4.3) Taxes. Customer is solely responsible for all applicable sales, use and other taxes and similar charges based on or arising from this Agreement or any ClearGov Service Order. In the event that Customer is exempt from sales tax, Customer will provide ClearGov with a tax-exempt certificate upon request.

5) Intellectual Property.

5.1) General. Both Parties may only use the other Party's intellectual property as expressly set forth herein. Nothing in this Agreement shall be construed in any manner to affect or modify either Party's ownership rights in any preexisting or future works, trademarks, copyrights or technologies developed or created by either Party, including without limitation, their respective proprietary software used in connection with the development and provision of their respective Web sites, databases, systems, products and/or services. Unless specifically agreed by the Parties in writing, all intellectual property, including without limitation information that could become the subject of a patent, copyright or trade secret, developed by a Party in the context of performing its

obligations under this Agreement shall be exclusively owned by that Party and the other Party shall cooperate with any reasonable requests to execute documents confirming such ownership.

5.2) Data Ownership and License.

a) Customer represents and warrants that it has obtained all data subjects' consent or otherwise has the full legal right necessary to provide the Customer Data to ClearGov for ClearGov's use as contemplated by this Agreement. Customer acknowledges that ClearGov shall have no legal liability for its use and/or the display of the Customer Data as contemplated by this Agreement.

b) Customer represents and warrants that Customer shall not provide or enter Sensitive Data to be displayed in any publicly available element of the ClearGov Service. To the extent that Customer enters or uploads any Sensitive Data into the ClearGov Service, Customer shall assume full responsibility for the disclosure of such Sensitive Data. ClearGov is under no obligation to review and/or verify whether or not Customer Data includes Sensitive Data.

c) Customer Data shall remain the property of Customer, and Customer hereby grants ClearGov a limited, perpetual, irrevocable and royalty-free right to use, copy, modify, and display the Customer Data within any ClearGov App(s) and for the purpose of providing the ClearGov Service.

5.3) Proprietary Rights Notice. The ClearGov Service and all intellectual property rights in the ClearGov Service are, and shall remain, the property of ClearGov. All rights in and to the ClearGov Service not expressly granted to Customer in this Agreement are hereby expressly reserved and retained by ClearGov without restriction, including, without limitation, ClearGov's right to sole ownership of the ClearGov API, ClearGov Apps, ClearGov Data, ClearGov Web Site, Documentation and Software. Without limiting the generality of the foregoing, Customer agrees not to (and to not allow any third party to): (a) sublicense, copy, distribute, rent, lease, lend or use the ClearGov Service outside of the scope of the license granted herein or make the ClearGov Service available to any third party or use the ClearGov Service on a service bureau time sharing basis; (b) copy, modify, adapt, translate, prepare derivative works from, reverse engineer, disassemble, or decompile the ClearGov Service or otherwise attempt to discover or reconstruct any source code, underlying ideas, algorithms, file formats, program interfaces or other trade secrets related to the ClearGov Service; (c) use the trademarks, trade names, service marks, logos, domain names and other distinctive brand features or any copyright or other proprietary rights associated with the ClearGov Service for any purpose without the express written consent of ClearGov; (d) register, attempt to register, or assist anyone else to register any trademark, trade name, service marks, logos, domain names and other distinctive brand features, copyrights or other proprietary rights associated with ClearGov other than in the name of ClearGov; or (e) modify, remove, obscure, or alter any notice of copyright, trademark, or other proprietary right or legend appearing in or on any item included with the ClearGov Service. If the use of the ClearGov Service is being purchased by or on behalf of the U.S. Government or by a U.S. Government prime contractor or subcontractor (at any tier), in accordance with 48 C.F.R. 227.7202-4 (for Department of Defense (DOD) acquisitions) and 48 C.F.R. 2.101 and 12.212 (for non-DOD acquisitions), the Government's rights in the ClearGov Service, including its rights to use, modify, reproduce, release, perform, display or disclose any elements of the ClearGov Service, will be subject in all respects to the commercial license rights and restrictions provided in this Agreement.

6) Representations, Warranties, Indemnification and Liability.

6.1) By ClearGov. ClearGov represents and warrants that: (i) the ClearGov Service shall be provided in accordance with, and shall not violate applicable laws, rules or regulations; and (ii) by using the ClearGov Service, Customer will not violate or in any way infringe upon the personal or proprietary rights of any third party, (iii) to ClearGov's knowledge, the ClearGov Service does not contain any virus, worm, Trojan horse, time bomb or similar contaminating or destructive feature; and (iv) ClearGov holds all necessary rights to permit the use of the ClearGov Service and all components thereof provided to Customer under this Agreement.

6.2) By Customer. Customer represents and warrants that: (i) it has all right, title, and interest in and to the Customer Data necessary for its use in connection with the ClearGov Service; and (ii) it shall not use the ClearGov Service in a manner or in connection with any activity that would violate this Agreement or any law, rule or regulation or rights of any third party.

6.3) By Both. ClearGov and Customer both represent and warrant that (i) each has full power and authority to enter into and perform its obligations under this Agreement; (ii) this Agreement is a legal, valid and binding obligation, enforceable against each Party in accordance with its terms; and (iii)

entering into this Agreement will not knowingly violate the Agreement or any laws, regulations or third-party contracts.

6.4) Indemnification by ClearGov. At ClearGov's cost, ClearGov agrees to indemnify, hold harmless and defend Customer against any cost, loss or expense (including attorney's fees) resulting from any claims by third parties for loss, damage or injury (each, a ***"Claim"***) arising out of or relating to (i) ClearGov's breach of any term, condition, representation or warranty of this Agreement, (ii) ClearGov's violation of any third party rights in connection with the ClearGov Service or (iii) ClearGov's violations of applicable laws, rules or regulations in connection with the ClearGov Service. In such a case, Customer will provide ClearGov with written notice of such Claim. Customer shall cooperate as fully as reasonably required in the defense of any Claim. Customer reserves the right, at its own expense, to assume the exclusive defense and control of any matter subject to indemnification by ClearGov. Notwithstanding the foregoing, unless the settlement involves no cost, loss or continuing liability to Customer, ClearGov shall not settle any Claim, without the written consent of Customer, such consent not to be unreasonably withheld.

6.5) Limited Warranty. ClearGov warrants that the ClearGov Service will be delivered in a professional and workmanlike manner substantially in accordance with the statement of work set forth in the applicable ClearGov Service Order and that the ClearGov Service will operate in all material respects as described in its product descriptions and/or documentation. EXCEPT FOR THE EXPRESS WARRANTIES STATED IN THIS AGREEMENT, INCLUDING ANY APPLICABLE CLEARGOV SERVICE ORDER, CLEARGOV MAKES NO ADDITIONAL WARRANTY, EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, GUARANTEES, REPRESENTATIONS, PROMISES, STATEMENTS, ESTIMATES, CONDITIONS, OR OTHER INDUCEMENTS.

6.6) Limitation of Liability. NEITHER CLEARGOV NOR CUSTOMER WILL BE LIABLE TO THE OTHER PARTY FOR ANY INDIRECT, SPECIAL, PUNITIVE, CONSEQUENTIAL (INCLUDING, WITHOUT LIMITATION, LOST PROFITS), OR INCIDENTAL DAMAGES, WHETHER BASED ON A CLAIM OR ACTION OF CONTRACT, WARRANTY, NEGLIGENCE, STRICT LIABILITY, OR OTHER TORT, BREACH OF ANY STATUTORY DUTY, INDEMNITY OR CONTRIBUTION, OR OTHERWISE, EVEN IF THE PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE EXCLUSION CONTAINED IN THIS PARAGRAPH SHALL APPLY REGARDLESS OF THE FAILURE OF THE EXCLUSIVE REMEDY PROVIDED IN THE FOLLOWING SENTENCE. BOTH PARTIES' TOTAL CUMULATIVE LIABILITY TO THE OTHER PARTY FOR ANY LOSS OR DAMAGES RESULTING FROM ANY CLAIMS, DEMANDS OR ACTIONS ARISING OUT OF OR RELATING TO THIS AGREEMENT SHALL NOT EXCEED THE CUMULATIVE FEES PAID BY CUSTOMER TO CLEARGOV IN THE PRECEDING TWELVE (12) MONTHS. THE FOREGOING SHALL NOT LIMIT A PARTY'S (A) PAYMENT OBLIGATIONS UNDER THE AGREEMENT; (B) LIABILITY FOR INDEMNIFICATION OBLIGATIONS UNDER SECTION 6.4; (C) LIABILITY FOR ANY BREACH OF ITS CONFIDENTIALITY OBLIGATIONS UNDER SECTION 7; (D) LIABILITY FOR ANY BREACH OF ITS REPRESENTATIONS, WARRANTIES, OR OBLIGATIONS UNDER SECTION 5.2; OR (E) LIABILITY FOR ITS INFRINGEMENT OR MISAPPROPRIATION OF ANY PROPRIETARY RIGHTS OF THE OTHER PARTY. NOTHING IN THIS AGREEMENT SHALL BE CONSTRUED AS EXCLUDING OR LIMITING A PARTY'S LIABILITY FOR FRAUD OR ITS LIABILITY FOR DEATH OR PERSONAL INJURY ARISING FROM ITS NEGLIGENCE.

6.7) Essential Element. The provisions of this Section 6 are an essential element of the benefit of the consideration reflected in this Agreement.

7) Confidentiality.

7.1) Subject to any applicable open public records laws in the Customer State, each Party will keep the specific terms of this Agreement confidential, including the contents of the schedules and exhibits, and not disclose any portion of them to any third party (other than to its attorneys, accountants, advisors and potential investors who are bound to keep such information confidential) without the other Party's prior written consent, except as required by law, including but not limited to open public record laws.

7.2) In addition, in connection with the negotiation and performance of this Agreement, a Party (the ***"Receiving Party"***) may receive information from the other Party (the ***"Disclosing Party"***) which is confidential or proprietary in nature, including without limitation information about a Party's products, systems and services (***"Confidential Information"***). The Receiving Party agrees that, during the term of this

Agreement and for a period of three (3) years thereafter, it will keep the Confidential Information in strictest confidence and protect such Confidential Information by similar security measures as it takes to protect its own Confidential Information of a similar nature, but in no event shall the Receiving Party take less than reasonable care with the Confidential Information of the Disclosing Party. The Receiving Party also agrees that it will not use any Confidential Information for any purpose other than in connection with the performance of its obligations under this Agreement.

7.3) The term ***"Confidential Information"*** shall not include information which A) is or becomes generally available to the public without breach of this Agreement, B) is in the possession of the Receiving Party prior to its disclosure by the Disclosing Party, C) becomes available from a third party not in breach of any obligations of confidentiality, D) is independently developed by the Receiving Party, or E) is required to be disclosed by the Receiving Party pursuant to law, rule, regulation, subpoena or court order, including but not limited to open public record laws.

7.4) The Parties recognize that the disclosure or use of a Disclosing Party's Confidential Information by the Receiving Party in violation of the provisions of this Section 7 may cause irreparable injury to the Disclosing Party; therefore, in the event either Party breaches the provisions of this Section 7, the other Party, in addition to any other remedies it may have, shall be entitled to seek preliminary and permanent injunctive relief without the necessity of posting a bond.

8) Miscellaneous.

8.1) General. If any provision of this Agreement is held to be unenforceable for any reason, such provision shall be reformed to the extent necessary to make it enforceable to the maximum extent permissible so as to implement the intent of the Parties, and the remainder of this Agreement shall continue in full force and effect. A waiver of any default is not a waiver of any subsequent default. The relationship between ClearGov and Customer is one of independent contractors, not partnership, joint venture or agency. This Agreement shall be binding upon and inure to the benefit of the respective successors and permitted assigns of the Parties hereto. The United Nations Convention on Contracts for the International Sale of Goods and the Uniform Computer Information Transactions Act shall not apply to this Agreement. The Software is controlled by U.S. Export Regulations, and it may not be exported to or used by embargoed countries or individuals.

8.2) Entire Agreement. This Agreement and the accompanying ClearGov Service Order(s), together, constitute a valid and binding agreement between the Parties and are intended to be the Parties' complete, integrated expression of the terms of their agreement with respect to the ClearGov Service, and any prior agreements or understandings with respect to such subject matter are superseded hereby and fully merged herein.

8.3) Assignment. Neither Party will assign this Agreement in whole or in part to any third party without the prior written consent of the other Party; provided, however, either Party may assign this Agreement without such consent to any subsidiary or parent company of such Party or to any successor by way of any merger, consolidation or other corporate reorganization of such Party or sale of all or substantially all of the assets of such Party or to an entity that assumes, by sale, license or otherwise, the business activities that are the subject of this Agreement, provided that such subsidiary or parent company or successor assumes or is otherwise fully bound by all of the obligations of the assigning Party under this Agreement.

8.4) Marketing Materials. Customer agrees that ClearGov may utilize Customer's name solely to identify it as a ClearGov Customer on the ClearGov Web site, in client lists and other marketing materials. Any other uses of Customer's name and/or logo (other than as included in the content and/or other items furnished to ClearGov by Customer) shall require Customer's prior written consent.

8.5) Insurance. ClearGov shall maintain commercial general liability insurance, cybersecurity insurance, product liability insurance and auto liability insurance in amounts that are consistent with industry standards. ClearGov shall maintain Worker's Compensation insurance as required by law.

8.6) No Boycott of Israel. ClearGov hereby certifies that ClearGov is not currently engaged in and shall not, for the duration of the Term of this Agreement, engage in a boycott of goods or services from the State of Israel; companies doing business in or with the State of Israel or authorized by, licensed by or organized under the laws of the State of Israel; or persons or entities doing business in the State of Israel.

8.7) Jurisdiction. This Agreement shall be governed by the applicable laws in the Customer State, without regard to conflict of laws rules. Any dispute, claim or controversy arising out of or relating to this Agreement or the breach, termination, enforcement, interpretation or validity thereof, including the

determination of the scope or applicability of this agreement to arbitrate, shall be determined exclusively by arbitration in the Customer State before a panel of three arbitrators. Such arbitration shall be administered by JAMS pursuant to JAMS' Streamlined Arbitration Rules and Procedures. Judgment on an award, if any, may be entered in any court having jurisdiction. This clause shall not preclude parties from seeking provisional remedies in aid of arbitration from a court of appropriate jurisdiction. The Parties acknowledge that this Agreement evidences a transaction involving interstate commerce. Notwithstanding the provision with respect to applicable substantive law, any arbitration conducted pursuant to the terms of this Agreement shall be governed by the Federal Arbitration Act (9 U.S.C., Secs. 1-16).

8.8) Force Majeure. If the performance of this Agreement or any obligations hereunder is prevented or interfered with by reason of fire or other casualty or accident, strikes or labor disputes, war or other violence, any law, proclamation, regulation, or requirement of any government agency, or any other act or condition beyond the reasonable control of a Party hereto, that Party upon giving prompt notice to the other Party shall be excused from such performance during such occurrence.

8.9) Notices. All notices, requests, or other communications between the Parties that are required or permitted hereunder will be in writing and will be given by: (a) delivery in person or by prepaid courier service with a nationally recognized courier company, (b) delivery by registered or certified mail, postage prepaid, return receipt requested, (c) by confirmed fax, or (d) email to the address and/or fax number set forth in the applicable ClearGov Service Order. A Party may change the street or email address or fax number to which notice is to be sent by giving written notice of such change. Notices will be deemed given when received as evidenced by verification from the courier company, the mail or confirmation of email receipt or fax confirmation.

8.10) Titles & Subtitles. The titles and subtitles in this Agreement are used for convenience only and are not to be considered in construing it.

May 15, 2023

Vaness Carrera
City of Tracy
333 Civic Center Plaza
Tracy, CA 95376

Dear Vanessa,

ClearGov provides unique budgeting and transparency software solutions for local government agencies: towns, cities, counties, school districts, special districts, etc. More than 1,000 customers have purchased the ClearGov platform via sole source. Specifically, this letter confirms that ClearGov, Inc. is the sole source provider for ClearGov ClearPlans.

ClearGov's products are proprietary software solutions for which ClearGov, Inc. exclusively owns all intellectual property rights, and these products are protected by copyrights, trademarks and service marks. In addition, there are no agents or dealers authorized to represent any of these ClearGov products.

Furthermore, no other company offers this combination of functions:

- Ability to create, manage and execute any type of plan
- Ability to define focus areas, goals and action items
- Automated workflow to enable updates to action items and goals
- Automated dashboard to present plan progress with built-in filters and drill-down
- Ability to allocate budget to specific focus areas and goals
- Collaborative workflows for multi-user editing and creation of plan components and plan presentation pages
- Ability to automatically create a customizable plan template
- Ability to create and present any plan via an interactive Website
- Ability to deliver plan in a single website with built-in navigation - not multiple tabs
- Includes templated pages for SWOT analysis, focus areas, strategic objectives, etc.
- Ability to upload and embed images, spreadsheets and other objects into plan pages
- Ability to add links to attachments within plan pages
- Ability to customize colors, fonts, graphics and other look & feel components
- Ability to create and embed custom financial and non-financial charts, graphs and tables

- Ability to automatically publish an online, accessible version of a plan and integrate directly into any Website
- Plan pages built with responsive design to automatically resize and optimize viewing for desktop, pad or mobile environments
- Ability to automatically format and print to .PDF any portion of the plan and/or the complete plan document with dynamic Table of Contents and page numbering
- Seamless integration with budget data

We look forward to having the opportunity to work with you. Please let me know if you have any questions or require additional information.

Sincerely yours,



Bryan A. Burdick
President, ClearGov, Inc.
bburdick@cleargov.com
(508) 298-8062

Single Sign-On in ClearGov

Enable your users to login quickly and conveniently using SSO.*

Benefits

Single sign-on (SSO) offers your organization better security and convenience in managing employees' access to multiple SaaS applications. With SSO, a user needs only remember a single password to connect to all external systems - including ClearGov - and administrators can control access to all applications in one central location. And, many SSO providers offer additional enhancements that strengthen security.

- ✓ **Save time for administrators**
- ✓ **Streamline user access**
- ✓ **Increase security**
- ✓ **Create a convenient experience**



Support

ClearGov supports SSO providers that employ several types of authentication protocols, such as OpenID Connect, SAML, and LDAP. Examples of SSO providers using these protocols include Microsoft Azure, OneLogin, and Okta.

Want to learn more?

Our tech team is happy to consult with you to understand your specific SSO configuration requirements, answer any questions you may have, and provide next steps on connecting ClearGov with your SSO provider.

*SSO is available upon request to be added to your ClearGov subscription. Standard rates apply.

APPROVED AS TO FORM AND LEGALITY

_____

CITY ATTORNEY'S OFFICE

TRACY CITY COUNCIL

RESOLUTION NO. _____

ADOPTING A RESOLUTION APPROVING THE EXECUTION OF A TWO-YEAR AGREEMENT WITH CLEARGOV, INC. FOR THE LICENSING OF CLEARPLANS, A DIGITAL STRATEGIC PLANNING AND PERFORMANCE MANAGEMENT SOLUTION

WHEREAS, the City of Tracy is proposing to expand its existing software license with ClearGov, Inc. to include its new strategy and performance management solution, ClearPlans.; and

WHEREAS, ClearPlans will help the City record, track, and report out on the progress of the City Council's Strategic Priorities, and other projects of interest, via a publicly accessible platform; and

WHEREAS, in early 2023, staff began researching different strategic planning and performance management solutions and participated in demonstrations with four software companies; and

WHEREAS, staff recommends that the City procure ClearPlans due to its integration capabilities with the existing ClearGov digital budget handbook and capital budgeting software, user-friendly dashboard, reporting customization and capabilities, flexible collaboration features, mobile and ADA optimization, competitive service rates, IT security standards, and single sign-on functionality; and

WHEREAS, the City's existing agreement with ClearGov for the digital budget book and capital budgeting software is $58,400. The set up and service fee for ClearPlans in Fiscal Year 2023-2024 is $19,800. Combined, the proposed total contract amount with ClearGov for FY 2023-24 is $78,200, which surpasses the City Manager's signing authority; and

WHEREAS, because of the City's existing contractual relationship with ClearGov it is not in the best interest of the City to comply with the request for proposal procedures, pursuant to Tracy Municipal Code section 2.20.140(b); and

WHEREAS, staff is requesting that the City Council adopt a resolution approving an agreement with ClearGov, Inc. for the licensing of ClearPlans, pursuant to Tracy Municipal Code section 2.20.140; and

WHEREAS, the Consultant's total compensation shall not exceed $20,000 per fiscal year, for a term of two years, with the option to extend for an additional year(s) by the City Manager following a written determination that the Consultant has satisfactorily met all the requirements of the agreement; now therefore be it

RESOLVED: That the City Council of the City of Tracy hereby approves the execution of a two-year agreement with ClearGov, Inc. for the licensing of ClearPlans, a digital strategic planning and performance management solution.

* * * * * * * * * * * * * *

The foregoing Resolution 2023-_____ was adopted by the Tracy City Council on the 5th day of September 2023 by the following vote:

AYES: COUNCIL MEMBERS:
NOES: COUNCIL MEMBERS:
ABSENT: COUNCIL MEMBERS:
ABSTENTION: COUNCIL MEMBERS:

_____
NANCY D. YOUNG
Mayor of the City of Tracy, California

ATTEST:_____
ADRIANNE RICHARDSON
City Clerk and Clerk of the Council of the
City of Tracy, California

September 5, 2023

Agenda Item 1.E

RECOMMENDATION

Staff recommends that the City Council adopt a Resolution authorizing the purchase of six Ford Police Interceptors and one Ford F150 Police Responder replacement vehicle for $392,211 through National Auto Fleet Group, Inc, an awarded contract company of Sourcewell and direct the Budget Officer to appropriate the funds in Fund 606.

EXECUTIVE SUMMARY

Staff recommends that the City Council authorize the purchase of six Ford Police Interceptors and one Ford F150 Police Responder replacement vehicle with National Auto Fleet Group a Sourcewell-awarded contract company. A current need exists to replace antiquated vehicles and equipment, for the operation and maintenance of City infrastructure. This request seeks authorization to make the necessary purchases.

BACKGROUND AND LEGISLATIVE HISTORY

The Fleet Division of Operations is responsible for reviewing the use, acquisition, maintenance, replacement, and disposal of City vehicles and equipment. The goal of the Division is to deliver services while minimizing City expenditures and maximizing current resources efficiently and effectively. To deliver this efficient service, the City must replace vehicles in a timely manner.

The City Fleet Policy Section 12 – Vehicles & Equipment Replacement Criteria stated that the Fleet Supervisor will create a proposed vehicle replacement list each year and meet with the respective departments to discuss recommended replacements. The Fleet Supervisor reviews reports from the City's Fleet assets management program to generate this report. They consider mileage, service hours, age, condition, reliability, usage, department operational needs, life-to-date operational cost, the ability of funds, and resale value. Based on this review and discussion, a replacement budget is generated and presented to Council during the budget review process.

ANALYSIS

The Fleet Supervisor discovered that seven police pursuit vehicles had met the Policy replacement criteria. The vehicles that were selected will be the first hybrids for the Police Department. Hybrid vehicles will cut down on fuel consumption, idle times and the City's carbon footprint.

The proposed purchases are with National Auto Fleet Group, a Sourcewell-awarded contract company. Sourcewell (formerly NJPA) is a municipal contracting government agency that serves education and government agencies nationally through competitively bid and awarded contract purchasing solutions. The City of Tracy is an established customer of Sourcewell. The City is authorized to make purchases using the Sourcewell cooperative purchasing agreements, per Tracy Municipal Code section 2.20.220.

Below is a list of the vehicles and equipment that will be purchased and the vendors that will be used.

Description	Vendor	Total Cost	Reason for award
2023 Police Interceptor Utility (K8A) AWD Hybrid (6 ea.)	National Auto Fleet Group	$339,001	Sourcewell (NJPA) 091521-NAF
2023 F-150 Police Responder (W1P) 4WD (1 ea.)	National Auto Fleet Group	$53,210	Sourcewell (NJPA) 091521-NAF

FISCAL IMPACT

Funding for the replacement Police vehicles is included in the adopted FY2023-24 operating budget, (Fund 606)" to allow Fleet to execute the purchase after Council authorization.

COORDINATION

The City's Fleet Policy states that all vehicle replacements must be discussed with the respective Department to ensure proper upgrading of vehicles and department budget availability. The City engaged Lieutenant Mario Ysit regarding replacement vehicles. Lieutenant Ysit is assigned to manage the Police Department fleet. He has agreed to replace these vehicles to keep the City Police vehicles responsible for all public safety needs.

STRATEGIC PLAN

These purchases are aligned with the City Council's Strategic Priority of Public Safety to enhance community safety by promoting a responsive public safety system.

ACTION REQUESTED OF THE CITY COUNCIL

Staff recommends that the City Council adopt a Resolution authorizing the purchase of six Ford Police Interceptors and one Ford F150 Police Responder replacement vehicle for $392,211 through National Auto Fleet Group, Inc, an awarded contract company of Sourcewell and direct the Budget Officer to appropriate the funds in Fund 606.

Prepared by: Jim Thompson, Operations Superintendent

Reviewed by: James A. Jackson, Director of Operations & Utilities
Sara Cowell, Director of Finance
Karin Schnaider, Assistant City Manager

Approved by: Midori Lichtwardt, Interim City Manager

Attachment A – Sourcewell Solicitation Number RFP #091521

Solicitation Number: RFP #091521

CONTRACT

This Contract is between Sourcewell, 202 12th Street Northeast, P.O. Box 219, Staples, MN 56479 (Sourcewell) and 72 Hour LLC dba: National Auto Fleet Group, 490 Auto Center Drive, Watsonville, CA 95076 (Supplier).

Sourcewell is a State of Minnesota local government unit and service cooperative created under the laws of the State of Minnesota (Minnesota Statutes Section 123A.21) that offers cooperative procurement solutions to government entities. Participation is open to eligible federal, state/province, and municipal governmental entities, higher education, K-12 education, nonprofit, tribal government, and other public entities located in the United States and Canada. Sourcewell issued a public solicitation for Automobiles, SUVs, Vans, and Light Trucks with Related Equipment and Accessories from which Supplier was awarded a contract.

Supplier desires to contract with Sourcewell to provide equipment, products, or services to Sourcewell and the entities that access Sourcewell's cooperative purchasing contracts (Participating Entities).

1. TERM OF CONTRACT

A. EFFECTIVE DATE. This Contract is effective upon the date of the final signature below.

B. EXPIRATION DATE AND EXTENSION. This Contract expires November 8, 2025, unless it is cancelled sooner pursuant to Article 22. This Contract may be extended one additional year upon the request of Sourcewell and written agreement by Supplier.

C. SURVIVAL OF TERMS. Notwithstanding any expiration or termination of this Contract, all payment obligations incurred prior to expiration or termination will survive, as will the following: Articles 11 through 14 survive the expiration or cancellation of this Contract. All rights will cease upon expiration or termination of this Contract.

2. EQUIPMENT, PRODUCTS, OR SERVICES

A. EQUIPMENT, PRODUCTS, OR SERVICES. Supplier will provide the Equipment, Products, or Services as stated in its Proposal submitted under the Solicitation Number listed above.

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Supplier's Equipment, Products, or Services Proposal (Proposal) is attached and incorporated into this Contract.

All Equipment and Products provided under this Contract must be new and the current model. Supplier may offer close-out or refurbished Equipment or Products if they are clearly indicated in Supplier's product and pricing list. Unless agreed to by the Participating Entities in advance, Equipment or Products must be delivered as operational to the Participating Entity's site.

This Contract offers an indefinite quantity of sales, and while substantial volume is anticipated, sales and sales volume are not guaranteed.

B. WARRANTY. Supplier warrants that all Equipment, Products, and Services furnished are free from liens and encumbrances, and are free from defects in design, materials, and workmanship. In addition, Supplier warrants the Equipment, Products, and Services are suitable for and will perform in accordance with the ordinary use for which they are intended. Supplier's dealers and distributors must agree to assist the Participating Entity in reaching a resolution in any dispute over warranty terms with the manufacturer. Any manufacturer's warranty that extends beyond the expiration of the Supplier's warranty will be passed on to the Participating Entity.

C. DEALERS, DISTRIBUTORS, AND/OR RESELLERS. Upon Contract execution and throughout the Contract term, Supplier must provide to Sourcewell a current means to validate or authenticate Supplier's authorized dealers, distributors, or resellers relative to the Equipment, Products, and Services offered under this Contract, which will be incorporated into this Contract by reference. It is the Supplier's responsibility to ensure Sourcewell receives the most current information.

3. PRICING

All Equipment, Products, or Services under this Contract will be priced at or below the price stated in Supplier's Proposal.

When providing pricing quotes to Participating Entities, all pricing quoted must reflect a Participating Entity's total cost of acquisition. This means that the quoted cost is for delivered Equipment, Products, and Services that are operational for their intended purpose, and includes all costs to the Participating Entity's requested delivery location.

Regardless of the payment method chosen by the Participating Entity, the total cost associated with any purchase option of the Equipment, Products, or Services must always be disclosed in the pricing quote to the applicable Participating Entity at the time of purchase.

A. SHIPPING AND SHIPPING COSTS. All delivered Equipment and Products must be properly packaged. Damaged Equipment and Products may be rejected. If the damage is not readily apparent at the time of delivery, Supplier must permit the Equipment and Products to be

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returned within a reasonable time at no cost to Sourcewell or its Participating Entities. Participating Entities reserve the right to inspect the Equipment and Products at a reasonable time after delivery where circumstances or conditions prevent effective inspection of the Equipment and Products at the time of delivery. In the event of the delivery of nonconforming Equipment and Products, the Participating Entity will notify the Supplier as soon as possible and the Supplier will replace nonconforming Equipment and Products with conforming Equipment and Products that are acceptable to the Participating Entity.

Supplier must arrange for and pay for the return shipment on Equipment and Products that arrive in a defective or inoperable condition.

Sourcewell may declare the Supplier in breach of this Contract if the Supplier intentionally delivers substandard or inferior Equipment or Products.

B. SALES TAX. Each Participating Entity is responsible for supplying the Supplier with valid tax-exemption certification(s). When ordering, a Participating Entity must indicate if it is a tax-exempt entity.

C. HOT LIST PRICING. At any time during this Contract, Supplier may offer a specific selection of Equipment, Products, or Services at discounts greater than those listed in the Contract. When Supplier determines it will offer Hot List Pricing, it must be submitted electronically to Sourcewell in a line-item format. Equipment, Products, or Services may be added or removed from the Hot List at any time through a Sourcewell Price and Product Change Form as defined in Article 4 below.

Hot List program and pricing may also be used to discount and liquidate close-out and discontinued Equipment and Products as long as those close-out and discontinued items are clearly identified as such. Current ordering process and administrative fees apply. Hot List Pricing must be published and made available to all Participating Entities.

4. PRODUCT AND PRICING CHANGE REQUESTS

Supplier may request Equipment, Product, or Service changes, additions, or deletions at any time. All requests must be made in writing by submitting a signed Sourcewell Price and Product Change Request Form to the assigned Sourcewell Supplier Development Administrator. This approved form is available from the assigned Sourcewell Supplier Development Administrator. At a minimum, the request must:

- Identify the applicable Sourcewell contract number;
- Clearly specify the requested change;
- Provide sufficient detail to justify the requested change;

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- Individually list all Equipment, Products, or Services affected by the requested change, along with the requested change (e.g., addition, deletion, price change); and
- Include a complete restatement of pricing documentation in Microsoft Excel with the effective date of the modified pricing, or product addition or deletion. The new pricing restatement must include all Equipment, Products, and Services offered, even for those items where pricing remains unchanged.

A fully executed Sourcewell Price and Product Change Request Form will become an amendment to this Contract and will be incorporated by reference.

5. PARTICIPATION, CONTRACT ACCESS, AND PARTICIPATING ENTITY REQUIREMENTS

A. PARTICIPATION. Sourcewell's cooperative contracts are available and open to public and nonprofit entities across the United States and Canada; such as federal, state/province, municipal, K-12 and higher education, tribal government, and other public entities.

The benefits of this Contract should be available to all Participating Entities that can legally access the Equipment, Products, or Services under this Contract. A Participating Entity's authority to access this Contract is determined through its cooperative purchasing, interlocal, or joint powers laws. Any entity accessing benefits of this Contract will be considered a Service Member of Sourcewell during such time of access. Supplier understands that a Participating Entity's use of this Contract is at the Participating Entity's sole convenience and Participating Entities reserve the right to obtain like Equipment, Products, or Services from any other source.

Supplier is responsible for familiarizing its sales and service forces with Sourcewell contract use eligibility requirements and documentation and will encourage potential participating entities to join Sourcewell. Sourcewell reserves the right to add and remove Participating Entities to its roster during the term of this Contract.

B. PUBLIC FACILITIES. Supplier's employees may be required to perform work at government-owned facilities, including schools. Supplier's employees and agents must conduct themselves in a professional manner while on the premises, and in accordance with Participating Entity policies and procedures, and all applicable laws.

6. PARTICIPATING ENTITY USE AND PURCHASING

A. ORDERS AND PAYMENT. To access the contracted Equipment, Products, or Services under this Contract, a Participating Entity must clearly indicate to Supplier that it intends to access this Contract; however, order flow and procedure will be developed jointly between Sourcewell and Supplier. Typically, a Participating Entity will issue an order directly to Supplier or its authorized subsidiary, distributor, dealer, or reseller. If a Participating Entity issues a purchase order, it may use its own forms, but the purchase order should clearly note the applicable Sourcewell

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contract number. All Participating Entity orders under this Contract must be issued prior to expiration or cancellation of this Contract; however, Supplier performance, Participating Entity payment obligations, and any applicable warranty periods or other Supplier or Participating Entity obligations may extend beyond the term of this Contract.

Supplier's acceptable forms of payment are included in its attached Proposal. Participating Entities will be solely responsible for payment and Sourcewell will have no liability for any unpaid invoice of any Participating Entity.

B. ADDITIONAL TERMS AND CONDITIONS/PARTICIPATING ADDENDUM. Additional terms and conditions to a purchase order, or other required transaction documentation, may be negotiated between a Participating Entity and Supplier, such as job or industry-specific requirements, legal requirements (e.g., affirmative action or immigration status requirements), or specific local policy requirements. Some Participating Entities may require the use of a Participating Addendum; the terms of which will be negotiated directly between the Participating Entity and the Supplier. Any negotiated additional terms and conditions must never be less favorable to the Participating Entity than what is contained in this Contract.

C. SPECIALIZED SERVICE REQUIREMENTS. In the event that the Participating Entity requires service or specialized performance requirements not addressed in this Contract (such as e-commerce specifications, specialized delivery requirements, or other specifications and requirements), the Participating Entity and the Supplier may enter into a separate, standalone agreement, apart from this Contract. Sourcewell, including its agents and employees, will not be made a party to a claim for breach of such agreement.

D. TERMINATION OF ORDERS. Participating Entities may terminate an order, in whole or in part, immediately upon notice to Supplier in the event of any of the following events:

1. The Participating Entity fails to receive funding or appropriation from its governing body at levels sufficient to pay for the equipment, products, or services to be purchased; or
2. Federal, state, or provincial laws or regulations prohibit the purchase or change the Participating Entity's requirements.

E. GOVERNING LAW AND VENUE. The governing law and venue for any action related to a Participating Entity's order will be determined by the Participating Entity making the purchase.

7. CUSTOMER SERVICE

A. PRIMARY ACCOUNT REPRESENTATIVE. Supplier will assign an Account Representative to Sourcewell for this Contract and must provide prompt notice to Sourcewell if that person is changed. The Account Representative will be responsible for:

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- Maintenance and management of this Contract;
- Timely response to all Sourcewell and Participating Entity inquiries; and
- Business reviews to Sourcewell and Participating Entities, if applicable.

B. BUSINESS REVIEWS. Supplier must perform a minimum of one business review with Sourcewell per contract year. The business review will cover sales to Participating Entities, pricing and contract terms, administrative fees, sales data reports, supply issues, customer issues, and any other necessary information.

8. REPORT ON CONTRACT SALES ACTIVITY AND ADMINISTRATIVE FEE PAYMENT

A. CONTRACT SALES ACTIVITY REPORT. Each calendar quarter, Supplier must provide a contract sales activity report (Report) to the Sourcewell Supplier Development Administrator assigned to this Contract. Reports are due no later than 45 days after the end of each calendar quarter. A Report must be provided regardless of the number or amount of sales during that quarter (i.e., if there are no sales, Supplier must submit a report indicating no sales were made).

The Report must contain the following fields:

- Participating Entity Name (e.g., City of Staples Highway Department);
- Participating Entity Physical Street Address;
- Participating Entity City;
- Participating Entity State/Province;
- Participating Entity Zip/Postal Code;
- Participating Entity Contact Name;
- Participating Entity Contact Email Address;
- Participating Entity Contact Telephone Number;
- Sourcewell Assigned Entity/Participating Entity Number;
- Item Purchased Description;
- Item Purchased Price;
- Sourcewell Administrative Fee Applied; and
- Date Purchase was invoiced/sale was recognized as revenue by Supplier.

B. ADMINISTRATIVE FEE. In consideration for the support and services provided by Sourcewell, the Supplier will pay an administrative fee to Sourcewell on all Equipment, Products, and Services provided to Participating Entities. The Administrative Fee must be included in, and not added to, the pricing. Supplier may not charge Participating Entities more than the contracted price to offset the Administrative Fee.

The Supplier will submit payment to Sourcewell for the percentage of administrative fee stated in the Proposal multiplied by the total sales of all Equipment, Products, and Services purchased

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by Participating Entities under this Contract during each calendar quarter. Payments should note the Supplier's name and Sourcewell-assigned contract number in the memo; and must be mailed to the address above "Attn: Accounts Receivable" or remitted electronically to Sourcewell's banking institution per Sourcewell's Finance department instructions. Payments must be received no later than 45 calendar days after the end of each calendar quarter.

Supplier agrees to cooperate with Sourcewell in auditing transactions under this Contract to ensure that the administrative fee is paid on all items purchased under this Contract.

In the event the Supplier is delinquent in any undisputed administrative fees, Sourcewell reserves the right to cancel this Contract and reject any proposal submitted by the Supplier in any subsequent solicitation. In the event this Contract is cancelled by either party prior to the Contract's expiration date, the administrative fee payment will be due no more than 30 days from the cancellation date.

9. AUTHORIZED REPRESENTATIVE

Sourcewell's Authorized Representative is its Chief Procurement Officer.

Supplier's Authorized Representative is the person named in the Supplier's Proposal. If Supplier's Authorized Representative changes at any time during this Contract, Supplier must promptly notify Sourcewell in writing.

10. AUDIT, ASSIGNMENT, AMENDMENTS, WAIVER, AND CONTRACT COMPLETE

A. AUDIT. Pursuant to Minnesota Statutes Section 16C.05, subdivision 5, the books, records, documents, and accounting procedures and practices relevant to this Agreement are subject to examination by Sourcewell or the Minnesota State Auditor for a minimum of six years from the end of this Contract. This clause extends to Participating Entities as it relates to business conducted by that Participating Entity under this Contract.

B. ASSIGNMENT. Neither party may assign or otherwise transfer its rights or obligations under this Contract without the prior written consent of the other party and a fully executed assignment agreement. Such consent will not be unreasonably withheld. Any prohibited assignment will be invalid.

C. AMENDMENTS. Any amendment to this Contract must be in writing and will not be effective until it has been duly executed by the parties.

D. WAIVER. Failure by either party to take action or assert any right under this Contract will not be deemed a waiver of such right in the event of the continuation or repetition of the circumstances giving rise to such right. Any such waiver must be in writing and signed by the parties.

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E. CONTRACT COMPLETE. This Contract represents the complete agreement between the parties. No other understanding regarding this Contract, whether written or oral, may be used to bind either party.For any conflict between the attached Proposal and the terms set out in Articles 1-22 of this Contract, the terms of Articles 1-22 will govern.

F. RELATIONSHIP OF THE PARTIES. The relationship of the parties is one of independent contractors, each free to exercise judgment and discretion with regard to the conduct of their respective businesses. This Contract does not create a partnership, joint venture, or any other relationship such as master-servant, or principal-agent.

11. INDEMNITY AND HOLD HARMLESS

Supplier must indemnify, defend, save, and hold Sourcewell and its Participating Entities, including their agents and employees, harmless from any claims or causes of action, including attorneys' fees incurred by Sourcewell or its Participating Entities, arising out of any act or omission in the performance of this Contract by the Supplier or its agents or employees; this indemnification includes injury or death to person(s) or property alleged to have been caused by some defect in the Equipment, Products, or Services under this Contract to the extent the Equipment, Product, or Service has been used according to its specifications. Sourcewell's responsibility will be governed by the State of Minnesota's Tort Liability Act (Minnesota Statutes Chapter 466) and other applicable law.

12. GOVERNMENT DATA PRACTICES

Supplier and Sourcewell must comply with the Minnesota Government Data Practices Act, Minnesota Statutes Chapter 13, as it applies to all data provided by or provided to Sourcewell under this Contract and as it applies to all data created, collected, received, stored, used, maintained, or disseminated by the Supplier under this Contract.

13. INTELLECTUAL PROPERTY, PUBLICITY, MARKETING, AND ENDORSEMENT

A. INTELLECTUAL PROPERTY

1. *Grant of License.* During the term of this Contract:
   a. Sourcewell grants to Supplier a royalty-free, worldwide, non-exclusive right and license to use thetrademark(s) provided to Supplier by Sourcewell in advertising and promotional materials for the purpose of marketing Sourcewell's relationship with Supplier.
   b. Supplier grants to Sourcewell a royalty-free, worldwide, non-exclusive right and license to use Supplier's trademarks in advertising and promotional materials for the purpose of marketing Supplier's relationship with Sourcewell.
2. *Limited Right of Sublicense*. The right and license granted herein includes a limited right of each party to grant sublicenses to their respective subsidiaries, distributors, dealers,

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resellers, marketing representatives, and agents (collectively "Permitted Sublicensees") in advertising and promotional materials for the purpose of marketing the Parties' relationship to Participating Entities. Any sublicense granted will be subject to the terms and conditions of this Article. Each party will be responsible for any breach of this Article by any of their respective sublicensees.

3. *Use; Quality Control.*

a. Neither party may alter the other party's trademarks from the form provided and must comply with removal requests as to specific uses of its trademarks or logos.

b. Each party agrees to use, and to cause its Permitted Sublicensees to use, the other party's trademarks only in good faith and in a dignified manner consistent with such party's use of the trademarks. Upon written notice to the breaching party, the breaching party has 30 days of the date of the written notice to cure the breach or the license will be terminated.

4. As applicable, Supplier agrees to indemnify and hold harmless Sourcewell and its Participating Entities against any and all suits, claims, judgments, and costs instituted or recovered against Sourcewell or Participating Entities by any person on account of the use of any Equipment or Products by Sourcewell or its Participating Entities supplied by Supplier in violation of applicable patent or copyright laws.

5. Termination. Upon the termination of this Contract for any reason, each party, including Permitted Sublicensees, will have 30 days to remove all Trademarks from signage, websites, and the like bearing the other party's name or logo (excepting Sourcewell's pre-printed catalog of suppliers which may be used until the next printing). Supplier must return all marketing and promotional materials, including signage, provided by Sourcewell, or dispose of it according to Sourcewell's written directions.

B. PUBLICITY. Any publicity regarding the subject matter of this Contract must not be released without prior written approval from the Authorized Representatives. Publicity includes notices, informational pamphlets, press releases, research, reports, signs, and similar public notices prepared by or for the Supplier individually or jointly with others, or any subcontractors, with respect to the program, publications, or services provided resulting from this Contract.

C. MARKETING. Any direct advertising, marketing, or offers with Participating Entities must be approved by Sourcewell. Send all approval requests to the Sourcewell Supplier Development Administrator assigned to this Contract.

D. ENDORSEMENT. The Supplier must not claim that Sourcewell endorses its Equipment, Products, or Services.

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14. GOVERNING LAW, JURISDICTION, AND VENUE

The substantive and procedural laws of the State of Minnesota will govern this Contract. Venue for all legal proceedings arising out of this Contract, or its breach, must be in the appropriate state court in Todd County, Minnesota or federal court in Fergus Falls, Minnesota.

15. FORCE MAJEURE

Neither party to this Contract will be held responsible for delay or default caused by acts of God or other conditions that are beyond that party's reasonable control. A party defaulting under this provision must provide the other party prompt written notice of the default.

16. SEVERABILITY

If any provision of this Contract is found by a court of competent jurisdiction to be illegal, unenforceable, or void then both parties will be relieved from all obligations arising from that provision. If the remainder of this Contract is capable of being performed, it will not be affected by such determination or finding and must be fully performed.

17. PERFORMANCE, DEFAULT, AND REMEDIES

A. PERFORMANCE. During the term of this Contract, the parties will monitor performance and address unresolved contract issues as follows:

1. *Notification.* The parties must promptly notify each other of any known dispute and work in good faith to resolve such dispute within a reasonable period of time. If necessary, Sourcewell and the Supplier will jointly develop a short briefing document that describes the issue(s), relevant impact, and positions of both parties.
2. *Escalation.* If parties are unable to resolve the issue in a timely manner, as specified above, either Sourcewell or Supplier may escalate the resolution of the issue to a higher level of management. The Supplier will have 30 calendar days to cure an outstanding issue.
3. *Performance while Dispute is Pending*. Notwithstanding the existence of a dispute, the Supplier must continue without delay to carry out all of its responsibilities under the Contract that are not affected by the dispute. If the Supplier fails to continue without delay to perform its responsibilities under the Contract, in the accomplishment of all undisputed work, the Supplier will bear any additional costs incurred by Sourcewell and/or its Participating Entities as a result of such failure to proceed.

B. DEFAULT AND REMEDIES. Either of the following constitutes cause to declare this Contract, or any Participating Entity order under this Contract, in default:

1. Nonperformance of contractual requirements, or
2. A material breach of any term or condition of this Contract.

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The party claiming default must provide written notice of the default, with 30 calendar days to cure the default. Time allowed for cure will not diminish or eliminate any liability for liquidated or other damages. If the default remains after the opportunity for cure, the non-defaulting party may:

- Exercise any remedy provided by law or equity, or
- Terminate the Contract or any portion thereof, including any orders issued against the Contract.

18. INSURANCE

A. REQUIREMENTS. At its own expense, Supplier must maintain insurance policy(ies) in effect at all times during the performance of this Contract with insurance company(ies) licensed or authorized to do business in the State of Minnesota having an "AM BEST" rating of A- or better, with coverage and limits of insurance not less than the following:

1. *Workers' Compensation and Employer's Liability.*
Workers' Compensation: As required by any applicable law or regulation.
Employer's Liability Insurance: must be provided in amounts not less than listed below:
Minimum limits:
$500,000 each accident for bodily injury by accident
$500,000 policy limit for bodily injury by disease
$500,000 each employee for bodily injury by disease

2. *Commercial General Liability Insurance.* Supplier will maintain insurance covering its operations, with coverage on an occurrence basis, and must be subject to terms no less broad than the Insurance Services Office ("ISO") Commercial General Liability Form CG0001 (2001 or newer edition), or equivalent. At a minimum, coverage must include liability arising from premises, operations, bodily injury and property damage, independent contractors, products-completed operations including construction defect, contractual liability, blanket contractual liability, and personal injury and advertising injury. All required limits, terms and conditions of coverage must be maintained during the term of this Contract.
Minimum Limits:
$1,000,000 each occurrence Bodily Injury and Property Damage
$1,000,000 Personal and Advertising Injury
$2,000,000 aggregate for Products-Completed operations
$2,000,000 general aggregate

3. *Commercial Automobile Liability Insurance.* During the term of this Contract, Supplier will maintain insurance covering all owned, hired, and non-owned automobiles in limits of liability not less than indicated below. The coverage must be subject to terms

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no less broad than ISO Business Auto Coverage Form CA 0001 (2010 edition or newer), or equivalent.

Minimum Limits:
$1,000,000 each accident, combined single limit

4. *Umbrella Insurance*. During the term of this Contract, Supplier will maintain umbrella coverage over Employer's Liability, Commercial General Liability, and Commercial Automobile.

Minimum Limits:
$2,000,000

5. *Network Security and Privacy Liability Insurance*. During the term of this Contract, Supplier will maintain coverage for network security and privacy liability. The coverage may be endorsed on another form of liability coverage or written on a standalone policy. The insurance must cover claims which may arise from failure of Supplier's security resulting in, but not limited to, computer attacks, unauthorized access, disclosure of not public data – including but not limited to, confidential or private information, transmission of a computer virus, or denial of service.

Minimum limits:
$2,000,000 per occurrence
$2,000,000 annual aggregate

Failure of Supplier to maintain the required insurance will constitute a material breach entitling Sourcewell to immediately terminate this Contract for default.

B. CERTIFICATES OF INSURANCE. Prior to commencing under this Contract, Supplier must furnish to Sourcewell a certificate of insurance, as evidence of the insurance required under this Contract. Prior to expiration of the policy(ies), renewal certificates must be mailed to Sourcewell, 202 12th Street Northeast, P.O. Box 219, Staples, MN 56479 or sent to the Sourcewell Supplier Development Administrator assigned to this Contract. The certificates must be signed by a person authorized by the insurer(s) to bind coverage on their behalf.

Failure to request certificates of insurance by Sourcewell, or failure of Supplier to provide certificates of insurance, in no way limits or relieves Supplier of its duties and responsibilities in this Contract.

C. ADDITIONAL INSURED ENDORSEMENT AND PRIMARY AND NON-CONTRIBUTORY INSURANCE CLAUSE. Supplier agrees to list Sourcewell and its Participating Entities, including their officers, agents, and employees, as an additional insured under the Supplier's commercial general liability insurance policy with respect to liability arising out of activities, "operations," or "work" performed by or on behalf of Supplier, and products and completed operations of Supplier. The policy provision(s) or endorsement(s) must further provide that coverage is

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primary and not excess over or contributory with any other valid, applicable, and collectible insurance or self-insurance in force for the additional insureds.

D. WAIVER OF SUBROGATION. Supplier waives and must require (by endorsement or otherwise) all its insurers to waive subrogation rights against Sourcewell and other additional insureds for losses paid under the insurance policies required by this Contract or other insurance applicable to the Supplier or its subcontractors. The waiver must apply to all deductibles and/or self-insured retentions applicable to the required or any other insurance maintained by the Supplier or its subcontractors. Where permitted by law, Supplier must require similar written express waivers of subrogation and insurance clauses from each of its subcontractors.

E. UMBRELLA/EXCESS LIABILITY/SELF-INSURED RETENTION. The limits required by this Contract can be met by either providing a primary policy or in combination with umbrella/excess liability policy(ies), or self-insured retention.

19. COMPLIANCE

A. LAWS AND REGULATIONS. All Equipment, Products, or Services provided under this Contract must comply fully with applicable federal laws and regulations, and with the laws in the states and provinces in which the Equipment, Products, or Services are sold.

B. LICENSES. Supplier must maintain a valid and current status on all required federal, state/provincial, and local licenses, bonds, and permits required for the operation of the business that the Supplier conducts with Sourcewell and Participating Entities.

20. BANKRUPTCY, DEBARMENT, OR SUSPENSION CERTIFICATION

Supplier certifies and warrants that it is not in bankruptcy or that it has previously disclosed in writing certain information to Sourcewell related to bankruptcy actions. If at any time during this Contract Supplier declares bankruptcy, Supplier must immediately notify Sourcewell in writing.

Supplier certifies and warrants that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from programs operated by the State of Minnesota; the United States federal government or the Canadian government, as applicable; or any Participating Entity. Supplier certifies and warrants that neither it nor its principals have been convicted of a criminal offense related to the subject matter of this Contract. Supplier further warrants that it will provide immediate written notice to Sourcewell if this certification changes at any time.

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21. PROVISIONS FOR NON-UNITED STATES FEDERAL ENTITY PROCUREMENTS UNDER UNITED STATES FEDERAL AWARDS OR OTHER AWARDS

Participating Entities that use United States federal grant or FEMA funds to purchase goods or services from this Contract may be subject to additional requirements including the procurement standards of the Uniform Administrative Requirements, Cost Principles and Audit Requirements for Federal Awards, 2 C.F.R. § 200. Participating Entities may have additional requirements based on specific funding source terms or conditions. Within this Article, all references to "federal" should be interpreted to mean the United States federal government. The following list only applies when a Participating Entity accesses Supplier's Equipment, Products, or Services with United States federal funds.

A. EQUAL EMPLOYMENT OPPORTUNITY. Except as otherwise provided under 41 C.F.R. § 60, all contracts that meet the definition of "federally assisted construction contract" in 41 C.F.R. § 60-1.3 must include the equal opportunity clause provided under 41 C.F.R. §60-1.4(b), in accordance with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 C.F.R. §, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and implementing regulations at 41 C.F.R. § 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor." The equal opportunity clause is incorporated herein by reference.

B. DAVIS-BACON ACT, AS AMENDED (40 U.S.C. § 3141-3148). When required by federal program legislation, all prime construction contracts in excess of $2,000 awarded by non-federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. § 3141-3144, and 3146-3148) as supplemented by Department of Labor regulations (29 C.F.R. § 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-federal entity must report all suspected or reported violations to the federal awarding agency. The contracts must also include a provision for compliance with the Copeland "Anti-Kickback" Act (40 U.S.C. § 3145), as supplemented by Department of Labor regulations (29 C.F.R. § 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-federal entity must report all suspected or reported violations to the federal awarding agency. Supplier must be in compliance with all applicable Davis-Bacon Act provisions.

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C. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT (40 U.S.C. § 3701-3708). Where applicable, all contracts awarded by the non-federal entity in excess of $100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. §§ 3702 and 3704, as supplemented by Department of Labor regulations (29 C.F.R. § 5). Under 40 U.S.C. § 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. § 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence. This provision is hereby incorporated by reference into this Contract. Supplier certifies that during the term of an award for all contracts by Sourcewell resulting from this procurement process, Supplier must comply with applicable requirements as referenced above.

D. RIGHTS TO INVENTIONS MADE UNDER A CONTRACT OR AGREEMENT. If the federal award meets the definition of “funding agreement” under 37 C.F.R. § 401.2(a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that “funding agreement,” the recipient or subrecipient must comply with the requirements of 37 C.F.R. § 401, “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements,” and any implementing regulations issued by the awarding agency. Supplier certifies that during the term of an award for all contracts by Sourcewell resulting from this procurement process, Supplier must comply with applicable requirements as referenced above.

E. CLEAN AIR ACT (42 U.S.C. § 7401-7671Q.) AND THE FEDERAL WATER POLLUTION CONTROL ACT (33 U.S.C. § 1251-1387). Contracts and subgrants of amounts in excess of $150,000 require the non-federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. § 7401- 7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. § 1251- 1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA). Supplier certifies that during the term of this Contract will comply with applicable requirements as referenced above.

F. DEBARMENT AND SUSPENSION (EXECUTIVE ORDERS 12549 AND 12689). A contract award (see 2 C.F.R. § 180.220) must not be made to parties listed on the government wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 C.F.R. §180 that implement Executive Orders 12549 (3 C.F.R. § 1986 Comp., p. 189) and 12689 (3 C.F.R. § 1989 Comp., p. 235), “Debarment and Suspension.” SAM Exclusions contains the names

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of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549. Supplier certifies that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation by any federal department or agency.

G. BYRD ANTI-LOBBYING AMENDMENT, AS AMENDED (31 U.S.C. § 1352). Suppliers must file any required certifications. Suppliers must not have used federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Suppliers must disclose any lobbying with non-federal funds that takes place in connection with obtaining any federal award. Such disclosures are forwarded from tier to tier up to the non-federal award. Suppliers must file all certifications and disclosures required by, and otherwise comply with, the Byrd Anti-Lobbying Amendment (31 U.S.C. § 1352).

H. RECORD RETENTION REQUIREMENTS. To the extent applicable, Supplier must comply with the record retention requirements detailed in 2 C.F.R. § 200.333. The Supplier further certifies that it will retain all records as required by 2 C.F.R. § 200.333 for a period of 3 years after grantees or subgrantees submit final expenditure reports or quarterly or annual financial reports, as applicable, and all other pending matters are closed.

I. ENERGY POLICY AND CONSERVATION ACT COMPLIANCE. To the extent applicable, Supplier must comply with the mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.

J. BUY AMERICAN PROVISIONS COMPLIANCE. To the extent applicable, Supplier must comply with all applicable provisions of the Buy American Act. Purchases made in accordance with the Buy American Act must follow the applicable procurement rules calling for free and open competition.

K. ACCESS TO RECORDS (2 C.F.R. § 200.336). Supplier agrees that duly authorized representatives of a federal agency must have access to any books, documents, papers and records of Supplier that are directly pertinent to Supplier's discharge of its obligations under this Contract for the purpose of making audits, examinations, excerpts, and transcriptions. The right also includes timely and reasonable access to Supplier's personnel for the purpose of interview and discussion relating to such documents.

L. PROCUREMENT OF RECOVERED MATERIALS (2 C.F.R. § 200.322). A non-federal entity that is a state agency or agency of a political subdivision of a state and its contractors must comply with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation

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and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 C.F.R. § 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds $10,000 or the value of the quantity acquired during the preceding fiscal year exceeded $10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

M. FEDERAL SEAL(S), LOGOS, AND FLAGS. The Supplier not use the seal(s), logos, crests, or reproductions of flags or likenesses of Federal agency officials without specific pre-approval.

N. NO OBLIGATION BY FEDERAL GOVERNMENT. The U.S. federal government is not a party to this Contract or any purchase by an Participating Entity and is not subject to any obligations or liabilities to the Participating Entity, Supplier, or any other party pertaining to any matter resulting from the Contract or any purchase by an authorized user.

O. PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS OR RELATED ACTS. The Contractor acknowledges that 31 U.S.C. 38 (Administrative Remedies for False Claims and Statements) applies to the Supplier's actions pertaining to this Contract or any purchase by a Participating Entity.

P. FEDERAL DEBT. The Supplier certifies that it is non-delinquent in its repayment of any federal debt. Examples of relevant debt include delinquent payroll and other taxes, audit disallowance, and benefit overpayments.

Q. CONFLICTS OF INTEREST. The Supplier must notify the U.S. Office of General Services, Sourcewell, and Participating Entity as soon as possible if this Contract or any aspect related to the anticipated work under this Contract raises an actual or potential conflict of interest (as described in 2 C.F.R. Part 200). The Supplier must explain the actual or potential conflict in writing in sufficient detail so that the U.S. Office of General Services, Sourcewell, and Participating Entity are able to assess the actual or potential conflict; and provide any additional information as necessary or requested.

R. U.S. EXECUTIVE ORDER 13224. The Supplier, and its subcontractors, must comply with U.S. Executive Order 13224 and U.S. Laws that prohibit transactions with and provision of resources and support to individuals and organizations associated with terrorism.

S. PROHIBITION ON CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT. To the extent applicable, Supplier certifies that during the term of this Contract it will comply with applicable requirements of 2 C.F.R. § 200.216.

T. DOMESTIC PREFERENCES FOR PROCUREMENTS. To the extent applicable, Supplier certifies that during the term of this Contract will comply with applicable requirements of 2 C.F.R. § 200.322.

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22. CANCELLATION

Sourcewell or Supplier may cancel this Contract at any time, with or without cause, upon 60 days' written notice to the other party. However, Sourcewell may cancel this Contract immediately upon discovery of a material defect in any certification made in Supplier's Proposal. Cancellation of this Contract does not relieve either party of financial, product, or service obligations incurred or accrued prior to cancellation.

Sourcewell

By: DocuSigned by: Jeremy Schwartz C0FD2A139D06489...

Jeremy Schwartz

Title: Chief Procurement Officer

Date: 11/4/2021 | 1:28 PM CDT

72 Hour LLC dba: National Auto Fleet Group

By: DocuSigned by: Jesse Cooper FACBB5730C1E467...

Jesse Cooper

Title: Fleet Manager

Date: 11/4/2021 | 10:46 AM CDT

Approved:

By: DocuSigned by: Chad Coauette 7E42B8F817A64CC...

Chad Coauette

Title: Executive Director/CEO

Date: 11/4/2021 | 1:34 PM CDT

RFP 091521 - Automobiles, SUVs, Vans, and Light Trucks with Related Equipment and Accessories

Vendor Details

Company Name:	72 HOUR LLC
Does your company conduct business under any other name? If yes, please state:	National Auto Fleet Group
Address:	490 Auto Center Drive Watsonville, CA 95076
Contact:	Jesse Cooper
Email:	Jcooper@nationalautofleetgroup.com
Phone:	951-440-0585
Fax:	831-840-8497
HST#:	263297677

Submission Details

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Specifications

Table 1: Proposer Identity & Authorized Representatives

General Instructions (applies to all Tables) Sourcewell prefers a brief but thorough response to each question. Do not merely attach additional documents to your response without also providing a substantive response. Do not leave answers blank; respond "N/A" if the question does not apply to you (preferably with an explanation).

Line Item	Question	Response *	
1	Proposer Legal Name (one legal entity only): (In the event of award, will execute the resulting contract as "Supplier")	72 Hour LLC	*
2	Identify all subsidiary entities of the Proposer whose equipment, products, or services are included in the Proposal.	WCAF, LLC WCDJR, LLC Alan Jay Automotive Inc	*
3	Identify all applicable assumed names or DBA names of the Proposer or Proposer's subsidiaries in Line 1 or Line 2 above.	NAFG has numerous subsidiaries and DBA's including but not limited to: National Auto Fleet Group, Chevrolet of Watsonville, Watsonville Ford Watsonville CDJR Watsonville Fleet Group Alan Jay Chrysler Jeep Inc Alan Jay Chevrolet, Cadillac Alan Jay Buick, GMC Alan Jay Auto Outlet Clewiston Motor Company, Inc Alan Jay Chrysler Dodge Ram Jeep Alan Jay Lincoln Alan Jay Ford Alan Jay Nissan Alan Jay Toyota	*
4	Proposer Physical Address:	490 Auto Center Drive Watsonville, CA 95076	*
5	Proposer website address (or addresses):	www.NationalAutoFleetGroup.com	*
6	Proposer's Authorized Representative (name, title, address, email address & phone) (The representative must have authority to sign the "Proposer's Assurance of Compliance" on behalf of the Proposer and, in the event of award, will be expected to execute the resulting contract):	Jesse Cooper Fleet Manager 1-855-289-6572 490 Auto Center Drive Watsonville, CA 95076 Jcooper@nationalautofleetgroup.com	*
7	Proposer's primary contact for this proposal (name, title, address, email address & phone):	Jesse Cooper Fleet Manager 1-855-289-6572 490 Auto Center Drive Watsonville, CA 95076 Jcooper@nationalautofleetgroup.com	*
8	Proposer's other contacts for this proposal, if any (name, title, address, email address & phone):	Clarke Cooper Fleet Manger 1-855-289-6572 490 Auto Center Drive Watsonville, CA 95076 ClarkeCooper@watsonvillefleetgroup.com	

Table 2: Company Information and Financial Strength

Line Item	Question	Response *	

9	Provide a brief history of your company, including your company's core values, business philosophy, and industry longevity related to the requested equipment, products or services.	National Auto Fleet Group started as a new division of 72 Hour LLC, in the summer of 2010 in the heart of Southern California. We began our network with a single automobile dealership and have now grown our network to encompass numerous dealerships located in and outside of California. We stand by providing opportunities for advancement by hiring and promoting from within our organization. Many of the Fleet Managers who started with us in 2010 are still with us today. Through the years, we have evolved and adapted to the new technology driven trends that are revolutionizing the automotive industry today. However, our brand's fundamental core values have remained unchanged – We are committed to do right for the members. If we take care of them, they will in return take care of us. National Auto Fleet Group's operational blueprint and business philosophy has always been the "4 RIGHT's" for every member: We deliver the RIGHT vehicle, at the RIGHT time, to the RIGHT place at the RIGHT price. The integrity of our business stems on our deep family roots in the automotive industry. We are and always will be family owned and operated with our future generations already in their infant stages today. We are committed to pioneering our industry for decades to come.	*
10	What are your company's expectations in the event of an award?	If awarded, this would be our 5th Sourcewell Contract and we would execute as such. We will continue to serve your members and provide them with excellent customer service while continuing to advance customer satisfaction. Along with implementing new business growth strategies that will ultimately launch us into new heights once again. Furthermore, we will launch our Partner Program detailed in the attached "marketing Plan Compressed" Zip file. This next generation application will give members the power to select upfitters they would like NAFG to partner with in providing satisfactory quotes and service. We see tremendous value in building out these mutually beneficial partnerships, so we can provide 100% satisfactory turnkey solutions to the members.	*
11	Demonstrate your financial strength and stability with meaningful data. This could include such items as financial statements, SEC filings, credit and bond ratings, letters of credit, and detailed reference letters. Upload supporting documents (as applicable) in the document upload section of your response.	To demonstrate NAFG's financial strength and stability, we have uploaded Bank Commitment letters under the Financial Strength Section of the online application. We have a direct line of credit of $52,000,00.00 that we are currently utilizing with our current and past Sourcewell Contracts. However, this number is not capped as we have the freedom to extend the cap to accommodate the revolving needs of the members. Referenced below is a short register of some of our market success from awarded government contracts that encompass over $140,000,000.00 worth of products and goods under our current Sourcewell Contract. A. City of San Diego, CA $ 72,000,000 contract under our Sourcewell Contract 120716-NAF. B. City of San Diego, CA $ 55,400,000 contract under our Sourcewell Contract 081716-NAF. C. Government Fleet Article Highlighting our transaction with the City of San Diego, CA procuring over 100 Police vehicles through NAFG Sourcewell Contract 120716-NAF. D. City of Los Angeles World Airports, CA Contract for $ 24,003,500 under Sourcewell Contract 120716-NAF for the procurement of 400 vehicles. E. City of Los Angeles Harbor, CA Contract Extension to $ 4,500,000 contract under Sourcewell Contract 120716-NAF. F. City of Los Angeles Harbor, CA Contract for $1,500,000 under our Sourcewell Contract 120716-NAF. G. City of Los Angeles Harbor, CA Renewal for another $ 1,500,000 under Sourcewell Contract Class 6, 7 and 8 Contract 081716-NAF. H. City of Costa Mesa, CA Contract $1,023,220 under our Sourcewell Contract 120716-NAF. I. Blanket Contracts with the State of Maryland, MD off our current Class 6, 7 and 8 Chassis Contract 081716-NAF. J. Blanket Contracts with the State of Maryland, MD off our Current Sourcewell Contract 120716-NAF. We have also attached our Commitment Letter's for unparallel support from leading nationally recognized upfit suppliers such The Knapheide Manufacturing Company. Along with regional suppliers such as Brand FX and Phenix Truck Body located in Southern California serve as regional support locations, whom we often work alongside to fulfill all member needs with past, present, and future orders with NAFG. Included are also Upfitter Recommendation letters to illustrate how National Auto Fleet Group has taken a proactive interest in building mutually beneficial relationship with our upfitters. Mutuality and reciprocity relationships between body companies and our dealer's are two of the key components that help members receive what they need in a smooth and efficient fashion. In addition, the adoption of our Class 6, 7, and 8 Contract from Anne Arundel County in the state of Maryland is as an example of how National Auto Fleet Group attracts and retains new clients by demonstrating to them there's a better and more efficient way of finding turnkey solutions. Lastly, we have attached supporting documents that help emphasize and exemplify our growth since our first awarded Sourcewell Contract in 2012. We sincerely hope it helps portray our commitment to building lifelong rapport and trust with our partner upfitters and members.	*
12	What is your US market share for the solutions that you are proposing?	. Of our respective brands and OEM's we represent, the US market share is estimated to be 60 – 75%.	*
13	What is your Canadian market share for the solutions that you are proposing?	It is difficult to estimate the market share for the brands and OEM's we represent, however we estimate that it should be the same 60 -75 % of the US share.	*
14	Has your business ever petitioned for bankruptcy protection? If so, explain in detail.	No.	*

15	How is your organization best described: is it a manufacturer, a distributor/dealer/reseller, or a service provider? Answer whichever question (either a) or b) just below) best applies to your organization. a) If your company is best described as a distributor/dealer/reseller (or similar entity), provide your written authorization to act as a distributor/dealer/reseller for the manufacturer of the products proposed in this RFP. If applicable, is your dealer network independent or company owned? b) If your company is best described as a manufacturer or service provider, describe your relationship with your sales and service force and with your dealer network in delivering the products and services proposed in this RFP. Are these individuals your employees, or the employees of a third party?	National Auto Fleet Group is a dealer network best categorized as “A” - Distributer/Dealer/Reseller and Dealer Partner for (15) OEM Manufacturers including Ford Motor Company, Chevrolet, RAM, GMC, Buick, Chrysler, Dodge, Jeep, Toyota, Nissan, KIA, BMW, Honda, Cadillac and Volkswagen, All orders are placed with the franchised dealer and ultimately titled directly to the member. All appropriate certification certificates and authorized DMV/Factory licenses may be found in the “Related Certification” section uploaded to this RFP. It should be noted we do not sell used equipment to members.	*
16	If applicable, provide a detailed explanation outlining the licenses and certifications that are both required to be held, and actually held, by your organization (including third parties and subcontractors that you use) in pursuit of the business contemplated by this RFP.	Required licenses include a Dealer’s License, a Franchise issued by the Manufacture, a Department of Motor Vehicles License, as well as a Reseller’s permit license. All which NAFG and Dealer Partner’s hold. Please review our attachment documents in section “Related Certification” for licenses that we either solely own or are jointly owned by our partner dealers that pertain to this RFP. A list of all our licenses are below, some of which may not pertain to class 1-3 but to class 4-8. CA Certificate of Good Standing 200824810190 State of Florida License Certificates: VF/1000974/4 VF/1000950/1 VF/1046516/1 VF/1024619/2 VF/1024619/1 VF/1018615/1 VF/1021891/1 VF/1000974/3 VF/1105916/1 VF/1020705/1 VF/1000969/1 CA State Seller’s Permit 101-135239 CA State Seller’s Permit 245364864-00001 Department of Motor Vehicle, Vehicle Dealer/ License Number 97772 Department of Motor Vehicle, Vehicle Dealer License Number 97771 Department of Motor Vehicle, Vehicle Dealer License Number 43609 Bureau of Automotive repair Registration # ARD00296319 123120 CA State Seller’s Permit 232781952-00001 City of Watsonville Business License Number 1792 City of Watsonville Business License Number 4358 Fictitious Business Names from Santa Cruz County for National Auto Fleet Group FBN: 2017-0000138 California General Resale Certificate Dun & Bradstreet Number: 023680653 Government of The District of Columbia Certificate Government of the District of Columbia Tax Registration # 7815888160711 City of Los Angeles Tax Registration Government of The District of Columbia CLEAN HANDS CERTIFICATION San Diego Freightliner Seller’s Permit Commonwealth of Virginia State Corporation Commission Certificate State of Maryland Good Standing Certificate Kansas Department of Revenue for Kansas City Peterbilt New Jersey Department of Treasury Registration Certificate New Jersey Business Registration Notice of Compliance of the Canton City Codified Ordinance Employee Information Report for the State of New Jersey State of Maryland New Sales and Use tax License CA State Seller’s Permit 98-037902 00006 South Carolina Department of Motor Vehicles License Number 36133 State of South Carolina Retail License Commonwealth of Kentucky Vehicle Dealer License 1583 20 100 State of West Virginia Dealer License Commonwealth of Kentucky Vehicle Dealer License 1581 20 036 State of Tennessee Vehicle Dealer License	*
17	Provide all “Suspension or Debarment” information that has applied to your organization during the past ten years.	Not Applicable, none.	*

Table 3: Industry Recognition & Marketplace Success

Line Item	Question	Response *	
18	Describe any relevant industry awards or recognition that your company has received in the past five years	National Auto Fleet Group's received its most prestigious award for Top Placement within Ford Motor Company as the leading dealership in Government Sales. In addition, our Chevrolet brand was highly ranked and honored 4/5 consecutive years by General Motors.	*
19	What percentage of your sales are to the governmental sector in the past three years	Within our fleet division, 90% of our contracts within the past three years have been with government accounts.	*
20	What percentage of your sales are to the education sector in the past three years	Within the past 3 years 90% of our sales have been to government accounts, 20% of which are within the education sector.	*
21	List any state, provincial, or cooperative purchasing contracts that you hold. What is the annual sales volume for each of these contracts over the past three years?	We hold the State of California contract with volumes from 200 to 500 units a year over the past three years. In addition, our Sourcewell Contract's 091219, 081716 and 120716 that we have maintained over the past three years has sold combined north of 400 million of Combined Quarterly Sales.	*
22	List any GSA contracts or Standing Offers and Supply Arrangements (SOSA) that you hold. What is the annual sales volume for each of these contracts over the past three years?	National Auto Fleet Group's focus lies on the Sourcewell Contract. NAFG holds no other GSA contract, Standing Offers, or Supply Arrangements other than the State of California contract. Our annual sales volume is estimated to be north of $200 million.	*

Table 4: References/Testimonials

Line Item 23. Supply reference information from three customers who are eligible to be Sourcewell participating entities.

Entity Name *	Contact Name *	Phone Number *	
Port of Los Angeles, CA	Mr. Dave Comer	310-72-3794	*
County of Venture, CA	Mr. Jorge Bnilla	805-672-2044	*
City of Austin, TX	Mr. Matt Sager	512-978-2637	*
County of San Joaquin, CA	Mr. David Myers	209-468-9745	
City of Palo Alto, CA	Ms. Danitra Bahlman	650-496-5920	

Table 5: Top Five Government or Education Customers

Line Item 24. Provide a list of your top five government, education, or non-profit customers (entity name is optional), including entity type, the state or province the entity is located in, scope of the project(s), size of transaction(s), and dollar volumes from the past three years.

Entity Name	Entity Type *	State / Province *	Scope of Work *	Size of Transactions *	Dollar Volume Past Three Years *	
City of Austin	Government	Texas - TX	Purchaser	10-15 Vehicles at once, Vans and SUVs	Over 1M	*
Los Angeles Department of Water and Power	Government	California - CA	Purchaser	Over 120 Vehicles, Vans and SUVs	Over 3M	*
Port of Los Angeles	Government	California - CA	Purchaser	Over 80 Trucks, Vans and SUVs	Over 2M	*
Anne Arundel County	Government	Maryland - MD	Purchaser	Over 40 Trucks, Vans and SUVs	Over 1M	*
City of San Diego	Government	California - CA	Purchaser	Over 500 Trucks, Vans, SUV'	Over 15M	*

Table 6: Ability to Sell and Deliver Service

Describe your company's capability to meet the needs of Sourcewell participating entities across the US and Canada, as applicable. Your response should address in detail at least the following areas: locations of your network of sales and service providers, the number of workers (full-time equivalents) involved in each sector, whether these workers are your direct employees (or employees of a third party), and any overlap between the sales and service functions.

Line Item	Question	Response *	
25	Sales force.	Our sales force consists of direct and an indirect sales force. Our direct sales force consists of direct employees and partner dealers, which exceeds an employee count of 300 personnel both full time and part time. Many of our sales force are spread across the US and we leverage our relationships with our larger class dealerships to service the members lower class vehicle needs as well. A cross sales force. These individuals help support our dealerships and NAFG Fleet Division directly. On the other hand, our indirect sales force made up of upfitters and partner suppliers consists of over 100 personnel with our partner network and sales force growing annually. With both direct and indirect sales force staff working together, NAFG has been able to successfully grow, maintain and service the demand of the members. As the number of your members grow, we will continuously welcome more staff to not only meet customer demand, but also to exceed customer expectations.	*

26	Dealer network or other distribution methods.	Our franchise network in Canada and the U.S. is fortunately second to none. Our 15 proposed OEMS previously mentioned, all of which have established a presence nationwide with factory stores strategically placed where all members can receive service and complete warranty repairs with their respective products. Simple put the North American and Canadian automobile supply chain network is one of the best in the world. Of the 15 brands we represent, the OEMs have put in place a dealer network across all 50 states that will allow us to best serve all members.	*
27	Service force.	The 15 manufactures we represent have thousands of service locations that would be easily accessible to all your members. Service centers and warranty repair facilities for all 15 OEMs are ample and ready to help service our members and their needs. However, Alaska and Hawaii may be exceptions as they may have farther distances between franchises where members can utilize the repair services.	*
28	Describe the ordering process. If orders will be handled by distributors, dealers or others, explain the respective roles of the Proposer and others.	The member may order their vehicles by navigating to our website, www.NationalAutoFleetGroup.com and going through the step-by-step process to generate an online quote or by calling one of our representatives at 855-289-6572 or by sending NAFG an email at Fleet@NationalAutoFleetGroup.com. Orders are then processed directly to the manufacturer who will work to supply the vehicle to the ship-to location for upfittinig or end user desired delivery location.	*
29	Describe in detail the process and procedure of your customer service program, if applicable. Include your response-time capabilities and commitments, as well as any incentives that help your providers meet your stated service goals or promises.	To best demonstrate our Customer Service program, kindly reference the ZIP file “Member Walk Through” that is attached in the Additional Documents folder. Please begin with and review in order that is explained below: How Members Can Get Quotes Online: A member can obtain most quotes by visiting our website www.NationalAutoFleetGroup.com where a simple one step form is needed for registration. This is to protect the price information from nonmembers. Once a member registers they will receive an automated welcome email with a demo video on how to use our site. Members will gain access to there very own dashboard which will house all there quotes in one safe secure login. Member’s can select which brand they are looking for and model year. Our site shows all the categories the brand offers such as: Cars, Vans, SUV’s Trucks and Chassis Cabs. Members will then be able to drill down for the right selection by picking from the filter menu of what cab there looking for (Regular, Extended or Crew) to 2 wheel or 4 wheel drive down to the bed length there looking for. All factory options are then presented for the member to select from, this will show all current factory orderable options, taking the guess work out for the member. Once a member selects a desire build, they will see there Sourcewell Price report showing the MSRP, there contract price, the saving in real dollars and as a percentage. In the PDF example you can see a saving of $ 9,175.96 of 22.345% to the member showing a significant savings. Members then can chose to add extra’s to there order like extra keys’ service manuals, sales tax and even request an upfit to be added to there quote. Lastly they will be given a complete turn key quote package to print which will include there customized Quote ID, Description and Specifications of what they built. How Members and Upfitters can Partner with NAFG: Our dedicated website www.NAFGPartner.com was built to accommodate the member who would like a certain upfitter to upfit there vehicles. It was also built for upfitters to have a place to go where they can find information on how to partner with NAFG to better serve there local members. Example of A Member with Upfit Quote: This is an example of how we use our Cab Chassis and combine them with an upfit to provide a turnkey solution for the member in a simple to follow format. ETA System for Members Walk Through: This is where members can easily come to our website, the same website they built there chassis on and track there order like they would a UPS package. We have a very simple display on our homepage “Track your order” where members can enter one of the following: Purchase Order Number, Quote ID, Upfit Quote ID or vin to easily see there in the process there particular order is in. Courtesy Confirmation Explained: After NAFG receives an order from a Member, we always like to send them a Courtesy Confirmation. This is were the member will double check some particulars on there order like, Color, Quantity, Upfit and Specification’s are all correct before order placement. We also like to ask for title information at this point so we can help process the paperwork at delivery promptly. Factory Order Cut Off Notices: Here is were we like to highlight were members can access any upcoming factory order cut off dates. We walk them through the process step by step to ensure everyone knows the upcoming order cut off date, we even print this information (if known at the time) right on the cover page of there quotes. Validation Walk Through Example: To demonstrate a price validation, we show what a member would see when they build a truck on our site. At check out the member would see the Total Configured MSRP of $ 35,730.00, A Sourcewell Price of $ 27,331.68, Total Saving of $ 8,398.32 or 23.505% for a 2020 F-250 followed by the pricing page which shows the Minimum Discount of at least 18.50%. As you see we provided an additional 5% discount on top of the 18.50% contract discount. This would be the case in most instances.	*
30	Describe your ability and willingness to provide your products and services to Sourcewell participating entities in the United States.	Our willingness and ability to service members nationwide is unparalleled. We have dedicated staff 5 days a week, from 7am to 7pm standing by ready to assist any member help find the best solution for there needs even if helping assist them to the best Sourcewell Contract that could be a solution. We have a dedicated live chat feature on our online quote generating website in case any member has any trouble at all in building there quotes. NAFG has established a chain of suppliers who are at the ready to serve if called upon by any member. We are here to help.	*
31	Describe your ability and willingness to provide your products and services to Sourcewell participating entities in Canada.	We are willing and eager to soon extend our business model and network into Canada. We believe partnering with local Canadian based dealer groups is key to success in the Canadian market. NAFG’s competitive pricing as well as a simple US Dollar to Canadian conversation will help NAFG expand into the Canadian market for participating Sourcewell members.	*
32	Identify any geographic areas of the United States or Canada that you will NOT be fully serving through the proposed contract.	National Auto Fleet Group will handle servicing 100% of all geographic areas located in the United States. Although it is unclear what unseen obstacles we may face in Canada, NAFG is committed to building the same model to service Canada and providing the same level of customer satisfaction, service, and care as in the United States.	*

33	Identify any Sourcewell participating entity sectors (i.e., government, education, not-for-profit) that you will NOT be fully serving through the proposed contract. Explain in detail. For example, does your company have only a regional presence, or do other cooperative purchasing contracts limit your ability to promote another contract?	NAFG will continue to service all Sourcewell Members through our 24 hour a day, 7 days a week online portal with the exclusion of Non-Profits. Unfortunately, Non-Profits are often not eligible for the same discount's government entities are qualified for. However, Non-Profits are subject to a different pricing program and will be evaluated on a case to case basis.	*
34	Define any specific contract requirements or restrictions that would apply to our participating entities in Hawaii and Alaska and in US Territories.	The only possible logistical constraints we may face is the shipping constraints for shipments arriving in Alaska, Hawaii and US Territories. For example, we often provide members in Alaska or Hawaii with vehicles that often have upfits. To circumvent this potential issue, members allow us to add these extra shipping and port costs to their quotes.	*

Table 7: Marketing Plan

Line Item	Question	Response *	
35	Describe your marketing strategy for promoting this contract opportunity. Upload representative samples of your marketing materials (if applicable) in the document upload section of your response.	National Auto Fleet Group encompasses a variety of marketing strategies to promote our products and services to streamline the vehicle purchasing process for government entities. Below are a few strategies used to serve as the gateway between our business and public agencies. Website and Inbound Marketing: The creation of a professional customer-focused website is one of our main features to market our products and services. The NAFG website encourages our members to interact and browse through products offered along with pricing and information about National Auto Fleet Group. Inbound marketing is created when potential members are directed to the company website. With this method, we are able to not only connect with members but to put the purchasing ability into the hands of each member. Our inbound marketing strategy attracts members by creating valuable content and experiences tailored to the needs of each individual. Examples include email campaign flyers on our products, informative and how-to videos, social media and engaging members with top-notched customer service to build brand awareness. Email Marketing: One of the main strategies used to engage current and potential members is Email Marketing. Our emails include different types of flyers that consist of information of the Sourcewell contract, promoting manufacturer brands, holiday themed flyers, discounts offered to first time buyers, important cutoff date reminders and upcoming products and events. The use of marketing campaigns plays a major role in enhancing the growth of our client database. Emails are a big part of our daily lives due to government agency employees utilizing emails as their main source of communication. We use campaigner.com as the emailing platform to reach our target members. Videos and descriptive images are used on all flyers and are compatible with a desktop or mobile device. Messages are short and to the point with links leading to the Sourcewell and NAFG homepage. The Campaigner email system allows the ability to track email activity based on open rate, unsubscribes and link clicks which is beneficial to understanding email effectiveness. Once potential members are directed to our website, they are welcomed with a wide range of options to explore an array of our products and services. They are able to register to become a member, view pricing, explore available in-stock vehicles, view how-to-videos, build a vehicle online to request an immediate quote or use our live chat assistant or call/email for live support. Face to Face Marketing Strategies: This strategy has proven to be successful in generating leads and creating lasting relationships by developing genuine connections with prospective members. National Auto Fleet Group attends several trades shows per year to engage members and put a face to the company. This in person meeting aids to build the brand by nurturing relationships between members and other vendors associated through the process. Trade shows attended include GFX, IAPPO, NIGP, ACT, CAPPO, and CASBO throughout the United States. NAFG has many opportunities to make in person presentations to propose products, services offered and to answer any questions potential members may have. These PowerPoint Presentations include topics on NAFG/Sourcewell process, how to facilitate the vehicle purchasing without bidding, informational videos, and the brands and services we provide. These meetings have been held at local cities, counties, school districts, water districts and ports. Relationship Marketing is a vital strategy used in building and maintaining long-term relationships practiced by National Auto Fleet Group on a daily basis. NAFG strives to create a positive and supportive connection with members by providing personalized and responsive customer service practices. The sales team has worked tirelessly to focus on providing outstanding customer support to create a powerful rapport with existing and new members. By going above and beyond, they have enhanced existing relationships and executed customer loyalty with repeat businesses. They strive to deviate from the "Car Salesperson" mentality which is 100% sales driven to a more product and customer service approach by instilling a sense of confidence in our clients. The goal is to regularly assist clients and address any needs and concerns even after the purchase has occurred. The strive to focus on solution selling vs. product selling develops into a mutually beneficial agreement for members and the business. Below are a few examples on successful relationship marketing from our Fleet Department: We had a member call in to request financing/lease options for a truck needed through our National Auto Fleet Group/Sourcewell vehicle contract. I contacted another Sourcewell vendor, Matt Geiselhart from NCL Gov Capital and he was happy to assist with a financing quote. The member also requested to trade in a current vehicle in their fleet and was directed to Govdeals for assistance in removing the outdated unit through an auction. The member was able to utilize three Sourcewell contracts to complete his transaction which simplified the entire process. The member was very satisfied with the amount of care and ease through his experience and became a repeat customer. By utilizing a cross-selling strategy, National Auto Fleet Group became his one stop shop to fulfill all fleet vehicle purchasing needs. "I had a member call in desperate to obtain a new truck because an employee had gotten into a serious accident and had the truck totaled. Due to covid restrictions, most manufacturers are currently experiencing microchip shortages which relays to production delays at the factory. We were able to direct buyer to our in-stock inventory on the NAFG website and member was ecstatic to locate truck to meet their needs. Instead of having to wait 30 weeks to receive the new vehicle, member was able to obtain the new truck within 3 weeks."	*

"I once had a member contact us two years after purchasing a vehicle from us. They had a malfunction with the liftgate on the box truck which caused a logistical nightmare. I was able to contact one of our body vendors that upfitted the lift gate installation and a service technician was able to go onsite to resolve the liftgate issue at no additional cost. The member was very impressed with the quality of our customer service even after purchase. "

"I had a member request a ¾ ton truck pricing but was unsure about their budget at the time. I took the time to go through each option with the client to provide a Sourcewell pricing quote through multiple manufacturers from Ram, Chevrolet and Ford. This empowered the member to have multiple pricing options for review to align with their budget as well as eliminating the need to shop anywhere else. "

"We work with many body companies to assist customers with the body upfitting process. One of our members called in a request to expedite a particular vehicle that was held up at one of their local body upfitters. I contacted the body company representative and put in a request to expedite the upfitting per request of the member. The body company was able to comply with the request and delivery was made sooner than expected."

Word-of-Mouth Marketing: The positive quality of service has led to more sales based on previous customers' impressions on their experience. NAFG's goal is to provide exemplary customer service throughout the entire purchasing process to encourage repeat business and advocate services to other members. NAFG has been fortunate to experience multiple instances of leads generated based solely on word-of-mouth marketing though our existing customers.

Cross-promotion: National Auto Fleet Group is currently collaborating with another Sourcewell Vendor, NCL Government Capital to promote each other's products and services. NCL Government Capital specializes in providing competitive equipment financing programs for municipalities and public education entities across the United States. As a team, NCL and NAFG produced a variety of marketing materials such as videos, flyers and info graphs to promote purchasing and leasing opportunities.

Hoglund Bus Company is another cross-promotion vendor NAFG had the opportunity to create a partnership with. Flyers were created to advertise Chassis from NAFG along with a variety of bus bodies from Hoglund Bus Company.

With cross-promotion, companies exchange knowledge and provide endorsements on websites, social media, and email campaigns. This strategy creates an influx of new leads, brand awareness, increased sales and recurrence of customers. National Auto Fleet Group will continue to create new partnerships and facilitate more cross-promotion opportunities in the near future to provide turnkey solutions for a variety of vehicle purchasing needs.

Coming in 2022, National Auto Fleet Group will be launching a NAFG Partner Website to further increase business growth. The website www.nafgpartner.com is expected to launch next year in 2022. The site encourages body upfitting companies throughout the United States to partner up with NAFG to become a preferred member. The benefits of becoming a preferred member include endorsements on website and social media avenues along with word-of-mouth referral for clients with upfitting needs. Our dedicated public relations representative will conduct phone and in person meetings to discuss the advantages of partnering up with NAFG, therefore generating more cross-promotion opportunities.

Members from government agencies are encouraged to go on the site to search for local body upfitting companies they are interested in working with. As a prerequisite in becoming a preferred vendor, they are required to advertise NAFG and the Sourcewell contract on their business website and refer their clients to purchase their cab/chassis needs through NAFG. This establishes a partnership that will generate increased sales all around. We are still currently building the website and interacting with body companies across the United States that would be interested in partnering up with NAFG.

36	Describe your use of technology and digital data (e.g., social media, metadata usage) to enhance marketing effectiveness.	Social media plays a crucial element in the way people communicate and connect with each other. LinkedIn is the go-to platform used by NAFG as it offers a variety of ways to expand our network by locating and connecting with relevant professionals in the industry. National Auto Fleet Group has utilized LinkedIn to engage current and potential members through personalized messages and posts. Personalized messages include thanking them for registering on site as well as directing them to on our link to the website, LinkedIn, YouTube, Facebook and Instagram company pages. The goal is to unite with people already on our database as well as people that would benefit from our products and services. Current flyers or messages about our company are also posted on the LinkedIn site to generate and attract more business. Time is also spent on reading posts from connections and observe any needs that National Auto Fleet Group may assist with. National Auto Fleet Group has begun utilizing video marketing strategies to further promote and market products by engaging on social media channels and email flyers. Programs such as Vimeo, Video Scribe, Cartoon Animator, Adobe Animate, Illustrate, Captive, Photoshop and Movavi Video Editor Plus are employed to edit and create videos to assist in endorsing our company. The following videos were recently created by our marketing department along with outside video production companies: Explainer Video: The first video created was a 90 second explainer video about National Auto Fleet Group that used animated characters to visualize our products and services along with information on the Sourcewell awarded contract. The video has been incorporated into all our weekly email flyers and social media platforms as an informative video on our products and how to purchase vehicles off Sourcewell Government Contract. How To Videos: National Auto Fleet Group has also created step-by-step How-To videos on the process to purchase both Light Duty and Heavy-Duty vehicles off the contract. In Stock Vehicles: This video showcases our in-stock vehicles available and the process of requesting a quote. ETA Tracking System: This video was created to not only introduce but to encourage clients to self-track their vehicle status. Holiday Themed Videos: These amusing videos were created to celebrate the holidays and add humor and lightness to our company and products sold. Cross Promotion Video: This video markets our relationship with NCL Government Capital and Sourcewell to endorse EV vehicles. Videos for social media: Mini videos were created to advertise new vehicles available, pricing and cutoff date reminders. NAFG has recently introduced a newly built live chat feature on our website for customer convenience as well as improving customer service. Visitors have access to chat with a live sales representative 24 hours a day, 7 days a week. With this feature potential customers are provided with another avenue for assistance in addition to emailing and phone calls. The benefits of a live chat option include quicker response time to assist buyers in reaching a purchasing decision and answer their questions. Improving customer service will also lead to increased sales, customer loyalty and engagement. Many studies have shown a strong correlation between live chat and increase in conversion rates. Potential clients appreciate having their questions answered in real-time when trying to build a vehicle quote online and allowing the user to multi-task different projects.
37	In your view, what is Sourcewell's role in promoting contracts arising out of this RFP? How will you integrate a Sourcewell-awarded contract into your sales process?	Sourcewell's mission states: "Our commitment to service and exceeding client expectations." This statement integrates with our relationship marketing strategy with our commitment to go above and beyond for all our members. Sourcewell is a trusted brand that government entities can rely on to access a wide variety of products and services for their everyday needs. With over 40 years of partnerships and relationship building, they are the glue that connects government, education, and nonprofit agencies to companies of all sizes to offer turnkey solutions to their needs. Sourcewell is also a reliable resource for vendors by not only connecting with potential prospects but by providing valuable marketing materials readily available for download on their website. Resources and tools provided include flyers, vendor training videos along with compliance information. The Sourcewell brand integrates a thorough documentation review of all vendors prior to awarding their cooperative contracts to ensure products and services are from reputable vendors. The brand provides a sense of legitimacy of our company name and members recognize that products and services are from reliable sources that will meet their needs. Sourcewell's aim is to simplify the purchasing and procurement process of government entities by eliminating the costly bidding procedure. The process of researching the right vendor is not only stressful and time-consuming but can be expensive as well. Sourcewell has completed the bidding for government entities which simplifies the overall purchasing process by providing access to competitively bid contracts procured by a government agency. Sourcewell has provided NAFG with overwhelming opportunities to work with government agencies across the United States. The Sourcewell name represents a high standard of integrity and ethics which is a dynamic National Auto Fleet Group is proud to be part of. Sourcewell members have access to a contract that is more flexible than the standard bidding process. Sourcewell is an organization that aids government entities to stay competitive without the frustrations and issues involved with the traditional bidding process. This contract can be customized to meet the unique needs of each client. The sales team has incorporated not only this standard of integrity in their sales practice ensuring clients' purchasing needs will always be met. The cost savings and stress-free nature of the cooperative contracts favors that of the traditional bidding process. It enables vendors to work with qualifying government entities in a more efficient manner. We vow to maintain these levels of standards across the board throughout all departments within the company.

38	Are your products or services available through an e-procurement ordering process? If so, describe your e-procurement system and how governmental and educational customers have used it.	Our website provides a hands-on empowering approach to ordering vehicles online. Clients can search through many vehicles makes and models with the ability to customize a vehicle tailored to their specific needs of their agency. A personalized quote with pricing can be available in as little as 5 minutes depending on the complexity of the vehicle. If upfitting is needed, the buyer can list the details of the up-fit while building their vehicle on our website to receive a complete quote or a sales representative can be reached through phone, email or our new live chat feature built on our website. We have recently created and uploaded a “How-To Videos” section on the homepage of our website which highlights a step-by-step process on how to build an online quote. This informative video demonstrates how to navigate the website in how to generate a vehicle quote with or without upfitting options. It begins by explaining how to register on our website as a member and then details on how to select vehicle model and type and the factory options needed. Once a customized quote is built, clients have the option to finalize the sales transaction by submitting a purchase order to our sales team via email. This gives complete autonomy to the client to purchase vehicles without the need to speak to a sales rep. If assistance is needed, they can contact sales through email, live chat or phone. If assistance is required to build a quote, our sales rep is also available to walk a client through the e-procurement process step by step. This ensures someone is available to answer any questions if needed and empowering the client to make any future purchases on their own. Clients may also call or email the needs of the company and receive a customized vehicle quote.	*

Table 8: Value-Added Attributes

Line Item	Question	Response *	
39	Describe any product, equipment, maintenance, or operator training programs that you offer to Sourcewell participating entities. Include details, such as whether training is standard or optional, who provides training, and any costs that apply.	National Auto Fleet Group extends any and all product, equipment, maintenance and operating programs provided by the Manufacturer directly to Sourcewell participating entities during the quoting process. The manufacturer will provide quotes to the member based on the vehicles class and size, and geographic location. NAFG will always pass these quotes onto members and treat them like an upfit to the vehicle.	*
40	Describe any technological advances that your proposed products or services offer.	Technological accomplishments by Manufactures like Ford Motor Company and General Motors serve members by keeping many models available for members to choose from. Additionally, NAFG allows members the ability to choose to electrify their vehicle by opting into the Motive Power Systems we can still help supply this kind of an upfit. For more information, we have attached the product and pricing information within the “Upfits Available” and “All 15 Manufactures” ZIP files under the supporting documents portion of the application.	*
41	Describe any “green” initiatives that relate to your company or to your products or services, and include a list of the certifying agency for each.	. National Auto Fleet Group helped create the Climate Mayor Purchasing Collaborative by partnering with over 400 Mayors nationwide. This initiative was created for the benefit of members who wanted to create and sustain an all-electric fleet. We offer 100% purely electric vehicles your members to choose from. Some popular models include the Chevrolet Bolt, Ford Fusion, Ford Mustang Mach-E, as well as Ford’s all electric F-150. We are confident that as more OEM’s continue to manufacture new electric vehicles, we will provide them for members to select from. More information about this initiative can be found at www.Driveevfleet.org	*
42	Identify any third-party issued eco-labels, ratings or certifications that your company has received for the equipment or products included in your Proposal related to energy efficiency or conservation, life-cycle design (cradle-to-cradle), or other green/sustainability factors.	NAFG has the California Air Resource Board (CARB) Certificate as well as the Ford Qualified Vehicle Modifier Certificate on file with some of our partner suppliers and upfitters hold these certifications and these certifications help illustrate how each vehicle conserves energy and remains energy efficient.	*
43	Describe any Women or Minority Business Entity (WMBE), Small Business Entity (SBE), or veteran owned business certifications that your company or hub partners have obtained. Upload documentation of certification (as applicable) in the document upload section of your response.	NAFG holds a current partnership with many suppliers some of which are veteran owed such as Pacific Truck Body located in CA. Our Ford, Chevrolet and Ram,Jeep,Dodge,Chrysler stores are jointly owned and operated by Minorities.	*
44	What unique attributes does your company, your products, or your services offer to Sourcewell participating entities? What makes your proposed solutions unique in your industry as it applies to Sourcewell participating entities?	. National Auto Fleet Group was not only built on dedication and hard work, but also through quantifiable metrics that directly measure the results of our efforts to ensure real goals are being measured and met. Through measuring results, NAFG takes responsibility in ensuring we deliver only the best customer care to your members. NAFG offers members 24 hour website access to customer support to personably walk members through any questions they may have. No matter what the issue may be, we always think outside the box to help members find a solution.	*

Table 9A: Warranty

Describe in detail your manufacturer warranty program, including conditions and requirements to qualify, claims procedure, and overall structure. You may upload representative samples of your warranty materials (if applicable) in the document upload section of your response in addition to responding to the questions below.

Line Item	Question	Response *	
45	Do your warranties cover all products, parts, and labor?	Each of the 15 manufactures we represent cover their own products, parts, and labor. All warranty information may be found in our attachments under the ZIP File “All 15 Manufactures”.	*
46	Do your warranties impose usage restrictions or other limitations that adversely affect coverage?	Prior to purchase, members should be aware of each manufacturer’s restrictions. Such as improper use of the vehicle may result in disqualification of coverage under the OEM’s warranty. An example of this may be an F-350 being used for a police related pursuit, which may void certain warranties. Although, we always welcome and encourage members to contact us for their particular warranty coverage.	*
47	Do your warranties cover the expense of technicians’ travel time and mileage to perform warranty repairs?	In some cases, manufacturers will tow a member’s vehicle to the nearest warranty repair facility in case of a breakdown and cover expenses, but prior approval is required.	*
48	Are there any geographic regions of the United States or Canada (as applicable) for which you cannot provide a certified technician to perform warranty repairs? How will Sourcewell participating entities in these regions be provided service for warranty repair?	This may vary from manufacturer to manufacturer. Thus, we encourage members to call in prior to purchase and inquire about their specific region and how their warranty repairs will be covered with their manufacturer.	*
49	Will you cover warranty service for items made by other manufacturers that are part of your proposal, or are these warranties issues typically passed on to the original equipment manufacturer?	All warranties are typically passed on to the original equipment manufacturer and any upfit warranty will be passed on to the upfitter to perform.	*
50	What are your proposed exchange and return programs and policies?	If a member changes their mind, NAFG will quickly make every effort to change or cancel the order with the factory. However, once the manufacturer begins producing the vehicle, there are no changes, exchanges, or refunds available. The order is then deemed non-cancellable. This includes any upfit equipment an upfitter has ordered for the unit.	*
51	Describe any service contract options for the items included in your proposal.	NAFG offers any and all manufacturer service contracts for all members. There are several parameters in which a service contract may be customizable. These customized service contracts will be treated as add factory options and following the same discount schedule provided in the pricing file.	*

Table 9B: Performance Standards or Guarantees

Describe in detail your performance standards or guarantees, including conditions and requirements to qualify, claims procedure, and overall structure. You may upload representative samples of your performance materials (if applicable) in the document upload section of your response in addition to responding to the questions below.

Line Item	Question	Response *	
52	Describe any performance standards or guarantees that apply to your services	The only guarantee we can ever provide is the guarantee that we will treat and help every member that contacts with respect, integrity and professionalism.	*
53	Describe any service standards or guarantees that apply to your services (policies, metrics, KPIs, etc.)	NAFG and staff uphold high standards with how we provide service to the members, not only holding each other accountable but by embracing member feedback of how we can improve. Then we act upon it and implement improvements.	*

Table 10: Payment Terms and Financing Options

Line Item	Question	Response *	
54	Describe your payment terms and accepted payment methods?	Standard payment terms are Net 20, with a 10 – day grace period.	*
55	Describe any leasing or financing options available for use by educational or governmental entities.	. In order to provide leasing or financing options, NAFG has partnered with National Cooperative Leasing to offer leasing terms for Sourcewell members for all NAFG quotes under the Sourcewell contract. For further review, we have attached a PDF called “NCL Sample Lease” in the “Member Walk Through” Zip file.	*
56	Describe any standard transaction documents that you propose to use in connection with an awarded contract (order forms, terms and conditions, service level agreements, etc.). Upload a sample of each (as applicable) in the document upload section of your response.	National Auto Fleet Group’s transaction process (Purchase Order) is closely tracked, well documented, and neatly organized to monitor each transaction performed through our Sourcewell Contract. This way, NAFG may produce swift and accurate quarterly reporting.	*
57	Do you accept the P-card procurement and payment process? If so, is there any additional cost to Sourcewell participating entities for using this process?	Yes, NAFG accepts up to $2,500 per vehicle. However, any dollar amount higher than $2,500 will require a P-card/ Credit Card transactional fee that would be passed onto the member	*

Table 11: Pricing and Delivery

Provide detailed pricing information in the questions that follow below. Keep in mind that reasonable price and product adjustments can be made during the term of an awarded Contract as described in the RFP, the template Contract, and the Sourcewell Price and Product Change Request Form.

Line Item	Question	Response *	
58	Describe your pricing model (e.g., line-item discounts or product-category discounts). Provide detailed pricing data (including standard or list pricing and the Sourcewell discounted price) on all of the items that you want Sourcewell to consider as part of your RFP response. If applicable, provide a SKU for each item in your proposal. Upload your pricing materials (if applicable) in the document upload section of your response.	National Auto Fleet Group is offering Line-Item Discounts Off Manufacture Suggested Retail Price for 15 manufacturers that is detailed in the Price File. NAFG will also offer any Upfits to be added to any and all vehicles' that members wish to add. Details are located on the Price Summary Page in the Price File.	*
59	Quantify the pricing discount represented by the pricing proposal in this response. For example, if the pricing in your response represents a percentage discount from MSRP or list, state the percentage or percentage range.	NAFG has an provided offerings from 15 Brands/OEMS and there respective percentage off vary and are detailed in the "Price File" zip Each Manufacture Range is detailed in the tabs below, here is an overview Chevrolet from -.077 to 24.45 % Ford Motor Company from -5.19 to 23.31 % GMC from 6.14 to 22.45 % Ram from 4.99 to 14.23 % Dodge from 3.09 to 9.96 % Jeep from 1.38 to 4.17 % Chrysler from 1.65 to 4.55 % Toyota from .03 to 8.98 % Honda from 1.34 to 4.9 % Nissan from -.085 to 14.61 % Buick from 2.36 to6.08 Kia from .69 to 8.39 % BMW from 3.8 to 4.77 % Cadillac from 4.22 to 6.77 % Volkswagen from 2.17 to 2.46 %	*
60	Describe any quantity or volume discounts or rebate programs that you offer.	If clients are considering an order of 150 or more units, we encourage members to contact us for any additional discounted quotes.	*
61	Propose a method of facilitating "sourced" products or related services, which may be referred to as "open market" items or "nonstandard options". For example, you may supply such items "at cost" or "at cost plus a percentage," or you may supply a quote for each such request.	"Open Market" products or "Sourced Goods" will be considered and treated as regular upfits. However, they may be quoted up to a 10% mark up, if applicable.	*
62	Identify any element of the total cost of acquisition that is NOT included in the pricing submitted with your response. This includes all additional charges associated with a purchase that are not directly identified as freight or shipping charges. For example, list costs for items like pre-delivery inspection, installation, set up, mandatory training, or initial inspection. Identify any parties that impose such costs and their relationship to the Proposer.	All considerations have already been taken into account in its entirely. The Price Summary Page and Price Table contained in the price file includes all considered costs. Although if a member requested a specialized quote for a unique situation that requires special training, direction, or installation, the additional costs would be added as a part of the upfit and then included inside the member's quote.	*
63	If freight, delivery, or shipping is an additional cost to the Sourcewell participating entity, describe in detail the complete freight, shipping, and delivery program.	All manufactures charge a standard "Factory Destination Charge". However, that is separate from the freight/destination cost that members may incur to ship a vehicle to and from an installer, if applicable. These subsequent locational movements may bare additional freight costs that will be outlined within the members quote for their review prior to purchase.	*
64	Specifically describe freight, shipping, and delivery terms or programs available for Alaska, Hawaii, Canada, or any offshore delivery.	Freight, shipping, and delivery terms among these regions sometimes carry additional logistical charges for added ferry, port and driver costs from both to and from the mainland. These added costs will be disclosed on the quote for members to review and approve prior to purchase.	*
65	Describe any unique distribution and/or delivery methods or options offered in your proposal.	National Auto Fleet Group already has a well-established Automobile Franchise Distribution Network that allows for swift and relatively seamless delivery to members and their end users.	*

Table 12: Pricing Offered

Line Item	The Pricing Offered in this Proposal is: *	Comments
66	c. better than the Proposer typically offers to GPOs, cooperative procurement organizations, or state purchasing departments.	NAFG Strives to offer the best overall value to the member with each and every quote.

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Table 13: Audit and Administrative Fee

Line Item	Question	Response *	
67	Specifically describe any self-audit process or program that you plan to employ to verify compliance with your proposed Contract with Sourcewell. This process includes ensuring that Sourcewell participating entities obtain the proper pricing, that the Vendor reports all sales under the Contract each quarter, and that the Vendor remits the proper administrative fee to Sourcewell. Provide sufficient detail to support your ability to report quarterly sales to Sourcewell as described in the Contract template.	Sourcewell participating members are able to obtain proper pricing directly from our website, where they are able to use our user-friendly design to build and price their vehicles. The NAFG is updated daily to reflect updated manufacturer MSRP information. Our system will provide members with an accurate quote 99.99% of the time. In addition, NAFG has a stream line and organized process hat calculates administrative fees and allows NAFG to give a turnaround time of 15 – 30 days for quarterly reports.	*
68	If you are awarded a contract, provide a few examples of internal metrics that will be tracked to measure whether you are having success with the contract.	One of the internal metrics NAFG uses to track and measure success with the Sourcewell Contract is maintained through our website. Our website keeps a detailed log of quotes that members are generating. We oversee and keep track of how many quotes are being generated and which quotes are met with a purchase order. Every month we evaluate our sales indicators and closely monitor the volume and frequency of sales. One example is by evaluating which members are purchasing from our platform – new members or frequent members to ensure we are growing our member base. We use these metrics to measure our projected growth rate and work to exceed our expectations.	*
69	Identify a proposed administrative fee that you will pay to Sourcewell for facilitating, managing, and promoting the Sourcewell Contract in the event that you are awarded a Contract. This fee is typically calculated as a percentage of Vendor's sales under the Contract or as a per-unit fee; it is not a line-item addition to the Member's cost of goods. (See the RFP and template Contract for additional details.)	NAFG will submit $ 300 per vehicle purchased through NAFG and $ 200 per vehicle purchased though our partner dealer Alan Jay Automotive. For the purpose of an admin fee there are no other partner dealer groups considered.	*

Table 14A: Depth and Breadth of Offered Equipment Products and Services

Line Item	Question	Response *	
70	Provide a detailed description of the equipment, products, and services that you are offering in your proposal.	NAFG has provided a "Model Roll Out" Charts in the "Price File" zip, but of the 15 manufacturers we represent, they have over 100 makes and models for members to choose from that range from Class 1-3 and supporting Class 4 Cab and Chassis trucks. NAFG's platforms can add any upfit of their choosing, ranging from toolboxes to Line Mechanic Bodies. Any and all upfits can be added to any one of our vehicles through one of our upfit partner suppliers or by an upfit supplier of the members choosing. NAFG and the supplier will work together to supply members with turnkey quotes.	*
71	Within this RFP category there may be subcategories of solutions. List subcategory titles that best describe your products and services.	National Auto Fleet Group lists the makes and models of all 15 manufacturers we represent under the ZIP File "All 15 Manufactures". These 15 OEMs make up over 100 combined makes, models, and engine combinations for members to select from along with several subtitle "Upfits" detailed for members in the price file.	*

Table 14B: Depth and Breadth of Offered Equipment Products and Services

Indicate below if the listed types or classes of equipment, products, and services are offered within your proposal. Provide additional comments in the text box provided, as necessary.

Line Item	Category or Type	Offered *	Comments
72	Automobiles	(•) Yes ( ) No	15 Manufacturers totaling well above 700 makes and models
73	Sport Utility Vehicles	(•) Yes ( ) No	15 Manufacturers totaling well above 700 makes and models
74	Vans	(•) Yes ( ) No	15 Manufacturers totaling well above 700 makes and models
75	Trucks	(•) Yes ( ) No	15 Manufacturers totaling well above 700 makes and models
76	Vehicles described in Lines 72-75 above for Public Safety applications	(•) Yes ( ) No	15 Manufacturers totaling well above 700 makes and models
77	Conventional internal combustion models	(•) Yes ( ) No	15 Manufacturers totaling well above 700 makes and models
78	Natural gas or propane autogas, hybrid, or alternative fuel models	(•) Yes ( ) No	15 Manufacturers totaling well above 700 makes and models
79	Electric powered models	(•) Yes ( ) No	15 Manufacturers totaling well above 700 makes and models

Table 15: Exceptions to Terms, Conditions, or Specifications Form

Line Item 80. **NOTICE**: To identify any exception, or to request any modification, to the Sourcewell template Contract terms, conditions, or specifications, a Proposer must submit the exception or requested modification on the **Exceptions to Terms, Conditions, or Specifications Form** immediately below. The contract section, the specific text addressed by the exception or requested modification, and the proposed modification must be identified in detail. Proposer's exceptions and proposed modifications are subject to review and approval of Sourcewell and will not automatically be included in the contract.

Contract Section	Term, Condition, or Specification	Exception or Proposed Modification

Documents

Ensure your submission document(s) conforms to the following:

1. Documents in PDF format are preferred. Documents in Word, Excel, or compatible formats may also be provided.

2. Documents should NOT have a security password, as Sourcewell may not be able to open the file. It is your sole responsibility to ensure that the uploaded document(s) are not either defective, corrupted or blank and that the documents can be opened and viewed by Sourcewell.

3. Sourcewell may reject any response where any document(s) cannot be opened and viewed by Sourcewell.

4. If you need to upload more than one (1) document for a single item, you should combine the documents into one zipped file. If the zipped file contains more than one (1) document, ensure each document is named, in relation to the submission format item responding to. For example, if responding to the Marketing Plan category save the document as “Marketing Plan.”

- Pricing - NAFG Price File for Bid 091521.zip - Monday September 13, 2021 19:29:27
- Financial Strength and Stability - Market Success and Financial Stability.zip - Monday September 13, 2021 19:30:12
- Marketing Plan/Samples - Marketing Plan Compressed.zip - Tuesday September 14, 2021 11:38:30
- WMBE/MBE/SBE or Related Certificates - Insurance and Related Documents.zip - Tuesday September 14, 2021 11:40:18
- Warranty Information - Warranties RFP 091521.zip - Tuesday September 14, 2021 11:40:36
- Standard Transaction Document Samples - Standard Transaction.zip - Monday September 13, 2021 19:54:48
- Upload Additional Document - ALL 15 Makes and Upfits.zip - Tuesday September 14, 2021 11:35:54

Addenda, Terms and Conditions

PROPOSER AFFIDAVIT AND ASSURANCE OF COMPLIANCE

I certify that I am the authorized representative of the Proposer submitting the foregoing Proposal with the legal authority to bind the Proposer to this Affidavit and Assurance of Compliance:

1. The Proposer is submitting this Proposal under its full and complete legal name, and the Proposer legally exists in good standing in the jurisdiction of its residence.

2. The Proposer warrants that the information provided in this Proposal is true, correct, and reliable for purposes of evaluation for contract award.

3. The Proposer, including any person assisting with the creation of this Proposal, has arrived at this Proposal independently and the Proposal has been created without colluding with any other person, company, or parties that have or will submit a proposal under this solicitation; and the Proposal has in all respects been created fairly without any fraud or dishonesty. The Proposer has not directly or indirectly entered into any agreement or arrangement with any person or business in an effort to influence any part of this solicitation or operations of a resulting contract; and the Proposer has not taken any action in restraint of free trade or competitiveness in connection with this solicitation. Additionally, if Proposer has worked with a consultant on the Proposal, the consultant (an individual or a company) has not assisted any other entity that has submitted or will submit a proposal for this solicitation.

4. To the best of its knowledge and belief, and except as otherwise disclosed in the Proposal, there are no relevant facts or circumstances which could give rise to an organizational conflict of interest. An organizational conflict of interest exists when a vendor has an unfair competitive advantage or the vendor's objectivity in performing the contract is, or might be, impaired.

5. The contents of the Proposal have not been communicated by the Proposer or its employees or agents to any person not an employee or legally authorized agent of the Proposer and will not be communicated to any such persons prior to Due Date of this solicitation.

6. If awarded a contract, the Proposer will provide to Sourcewell Participating Entities the equipment, products, and services in accordance with the terms, conditions, and scope of a resulting contract.

7. The Proposer possesses, or will possess before delivering any equipment, products, or services, all applicable licenses or certifications necessary to deliver such equipment, products, or services under any resulting contract.

8. The Proposer agrees to deliver equipment, products, and services through valid contracts, purchase orders, or means that are acceptable to Sourcewell Members. Unless otherwise agreed to, the Proposer must provide only new and first-quality products and related services to Sourcewell Members under an awarded Contract.

9. The Proposer will comply with all applicable provisions of federal, state, and local laws, regulations, rules, and orders.

10. The Proposer understands that Sourcewell will reject RFP proposals that are marked "confidential" (or "nonpublic," etc.), either substantially or in their entirety. Under Minnesota Statutes Section 13.591, subdivision 4, all proposals are considered nonpublic data until the evaluation is complete and a Contract is awarded. At that point, proposals become public data. Minnesota Statutes Section 13.37 permits only certain narrowly defined data to be considered a "trade secret," and thus nonpublic data under Minnesota's Data Practices Act.

11. Proposer its employees, agents, and subcontractors are not:

    1. Included on the "Specially Designated Nationals and Blocked Persons" list maintained by the Office of Foreign Assets Control of the United States Department of the Treasury found at: https://www.treasury.gov/ofac/downloads/sdnlist.pdf;

    2. Included on the government-wide exclusions lists in the United States System for Award Management found at: https://sam.gov/SAM/; or

    3. Presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from programs operated by the State of Minnesota; the United States federal government or the Canadian government, as applicable; or any Participating Entity. Vendor certifies and warrants that neither it nor its principals have been convicted of a criminal offense related to the subject matter of this solicitation.

☑ By checking this box I acknowledge that I am bound by the terms of the Proposer's Affidavit, have the legal authority to submit this Proposal on behalf of the Proposer, and that this electronic acknowledgment has the same legal effect, validity, and enforceability as if I had hand signed the Proposal. This signature will not be denied such legal effect, validity, or enforceability solely because an electronic signature or electronic record was used in its formation. - Jesse Cooper, Fleet Manager, 72 Hour LLC

The Proposer declares that there is an actual or potential Conflict of Interest relating to the preparation of its submission, and/or the Proposer foresees an actual or potential Conflict of Interest in performing the contractual obligations contemplated in the bid.

○ **Yes** ◉ **No**

The Bidder acknowledges and agrees that the addendum/addenda below form part of the Bid Document.

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Check the box in the column "**I have reviewed this addendum"** below to acknowledge each of the addenda.

File Name	I have reviewed the below addendum and attachments (if applicable)	Pages
Addendum_6_ Autos_SUVs_Vans_Trucks_RFP_091521 Wed September 8 2021 06:27 PM	☑	1
Addendum_5_ Autos_SUVs_Vans_Trucks_RFP_091521 Tue September 7 2021 07:28 PM	☑	2
Addendum_4_ Autos_SUVs_Vans_Trucks_RFP_091521 Thu August 26 2021 05:55 PM	☑	1
Addendum_3_ Autos_SUVs_Vans_Trucks_RFP_091521 Mon August 23 2021 09:47 AM	☑	1
Addendum_2_ Autos_SUVs_Vans_Trucks_RFP_091521 Sun August 8 2021 09:02 PM	☑	1
Addendum_1_ Autos_SUVs_Vans_Trucks_RFP_091521 Thu August 5 2021 03:58 PM	☑	1

APPROVED AS TO FORM AND LEGALITY

_____
CITY ATTORNEY'S OFFICE

TRACY CITY COUNCIL

RESOLUTION NO. _____

RESOLUTION AUTHORIZING THE PURCHASE OF SIX FORD POLICE INTERCEPTORS AND ONE FORD F150 POLICE RESPONDER REPLACEMENT VEHICLE FOR $392,211 THROUGH NATIONAL AUTO FLEET GROUP, INC, AN AWARDED CONTRACT COMPANY OF SOURCEWELL AND DIRECT THE BUDGET OFFICER TO APPROPRIATE THE FUNDS IN FUND 606

WHEREAS, The Fleet Division of Operations is responsible for reviewing the use, acquisition, maintenance, replacement, and disposal of City vehicles and equipment; and

WHEREAS, The goal of the Division is to deliver services while minimizing City expenditures and maximizing current resources efficiently and effectively. To deliver this efficient service, the City must replace vehicles in a timely manner; and

WHEREAS, The City Fleet Policy Section 12 – Vehicles & Equipment Replacement Criteria stated that the Fleet Supervisor will create a proposed vehicle replacement list each year and meet with the respective departments to discuss recommended replacements; and

WHEREAS, The Fleet Supervisor discovered that seven police pursuit vehicles had met the Policy replacement criteria; and

WHEREAS, The vehicles that were selected will be the first hybrids for the Police Department. Hybrid vehicles will cut down on fuel consumption, idle times and the City's carbon footprint; and

WHEREAS, The proposed purchases are with National Auto Fleet Group, a Sourcewell-awarded contract company. Sourcewell (formerly NJPA) is a municipal contracting government agency that serves education and government agencies nationally through competitively bid and awarded contract purchasing solutions; and

WHEREAS, The City of Tracy is an established customer of Sourcewell and is authorized to make purchases using the Sourcewell cooperative purchasing agreements, per Tracy Municipal Code section 2.20.220; and

WHEREAS, The vehicles and equipment that will be purchased and the vendors that will be used are as follows; and

Description	**Vendor**	**Total Cost**	**Reason for award**
2023 Police Interceptor Utility (K8A) AWD Hybrid (6 ea.)	National Auto Fleet Group	$339,001	Sourcewell (NJPA) 091521-NAF
2023 F-150 Police Responder (W1P) 4WD (1 ea.)	National Auto Fleet Group	$53,210	Sourcewell (NJPA) 091521-NAF

WHEREAS, Replacement funding was approved from Police Internal Service Fund 10121101-5453 to pay for replacing the vehicles in the Fiscal Year 2024 budget. The Budget Officer must complete the transfer of funds from the Org to Fund (606) – "Replacement Vehicles" to allow Fleet to execute the purchase after Council authorization; and

WHEREAS, These purchases are aligned with the City Council's Strategic Priority of Public Safety to enhance community safety by promoting a responsive public safety system; now, therefore, be it

RESOLVED: That the City Council of the City of Tracy hereby authorizes the purchase of six Ford Police Interceptors and one Ford F150 Police Responder replacement vehicle for $392,211 through National Auto Fleet Group, Inc, an awarded contract company of Sourcewell and direct the Budget Officer to appropriate the funds in Fund 606.

* * * * * * * * * * * * * *

The foregoing Resolution 2023-_____ was adopted by the Tracy City Council on September 5, 2023, by the following vote:

AYES: COUNCIL MEMBERS:
NOES: COUNCIL MEMBERS:
ABSENT: COUNCIL MEMBERS:
ABSTENTION: COUNCIL MEMBERS:

_____
NANCY D. YOUNG
Mayor of the City of Tracy, California

ATTEST:_____
ADRIANNE RICHARDSON
City Clerk and Clerk of the Council of the
City of Tracy, California

September 5, 2023

Agenda Item 1.F

RECOMMENDATION

Staff recommends that the City Council adopt a resolution (1) approving Amendment No. 1 to the Master Professional Services Agreement (HA20-01) with Harris and Associates for program management services to extend the agreement through September 14, 2025, for a not-to-exceed amount of $800,000 per fiscal year, and (2) approving Amendment No. 1 to the Master Professional Services Agreement (HA20-02) with Harris and Associates for program management services to extend the agreement through September 14, 2025, for a not-to-exceed amount of $800,000 per fiscal year.

EXECUTIVE SUMMARY

On September 15, 2020, by Resolution No. 2020-167, the City Council authorized the execution of two Master Professional Services Agreements (Agreements), HA20-01 (Attachment A) and HA20-02 (Attachment C), with Harris and Associates (Consultant). The Agreements would terminate on September 14, 2023, if its not extended. The proposed Amendment No. 1 to the Agreements (Amendments) (Attachments A and C) will extend the Agreements for program management services through September 14, 2025, with a not-to-exceed amount of $800,000 per fiscal year.

BACKGROUND AND LEGISLATIVE HISTORY

The City issued a Request for Proposals (RFP) on July 10, 2020, for Program Management Services. The City and Consultant entered into the Agreements after City Council approval on September 15, 2020, by adopting Resolution No. 2020-167. During the initial term of the Agreement, Consultant has satisfactorily met all terms of the Agreement.

ANALYSIS

Consultant is currently providing program management services and is familiar with the City's impact fee programs. Program management services primarily involve updating development impact fees, preparing impact fee quotes, preparing revenue projections, tracking credits and reimbursements, updating Finance and Implementation Plans (FIPs), forecasting fee revenue and project expenses, updating construction cost estimates, forming benefit districts, assisting in acquisition of infrastructure through CFDs, calculating reimbursements and managing infrastructure master plans. The cost to provide such services are covered through development impact fees, other fees paid by developers, and administrative fees levied through the CFDs.

Due to an increasing level of development and the specialized nature of the scope of work, services of consultants are needed to continue providing effective program management services. The Agreements give the option of extending for two years upon satisfactory work provided by the Consultant. Staff would like to move forward with the extension of the Agreements.

FISCAL IMPACT

There is no fiscal impact associated with this action. These services are funded through the program management portion of development impact fees, other fees from developers, and administrative fees levied through CFDs.

PUBLIC OUTREACH / INTEREST

Not applicable.

COORDINATION

Not applicable.

CEQA DETERMINATION

Not applicable.

STRATEGIC PLAN

This agenda item supports the City of Tracy's Quality of Life Strategic Priority, which is to provide an outstanding quality of life by enhancing the City's amenities, business mix and services, and cultivating connections to promote positive change and progress in our community.

ACTION REQUESTED OF THE CITY COUNCIL

Staff recommends that the City Council adopt a Resolution (1) approving Amendment No. 1 to the Master Professional Services Agreement (HA20-01) with Harris and Associates for program management services to extend the agreement through September 14, 2025, for a not-to-exceed amount of $800,000 per fiscal year, and (2) approving Amendment No. 1 to the Master Professional Services Agreement (HA20-02) with Harris and Associates for program management services to extend the agreement through September 14, 2025, for a not-to-exceed amount of $800,000 per fiscal year.

Prepared by: Veronica Child, Management Analyst II

Reviewed by: Koosun Kim, PE, City Engineer / Assistant Director of Development Services
Sara Cowell, Finance Director
Karin Schnaider, Assistant City Manager

Approved by: Midori Lichtwardt, Interim City Manager

ATTACHMENTS

Attachment A – Amendment No. 1 to MPSA (HA20-01)
Attachment B – MPSA HA20-01
Attachment C – Amendment No. 1 to MPSA (HA20-02)
Attachment D – MPSA HA20-02

CITY OF TRACY
AMENDMENT NO. 1 TO
MASTER PROFESSIONAL SERVICES AGREEMENT WITH
HARRIS & ASSOCIATES, INC.
Program Management Services HA20-01

This Amendment No. 1 (**Amendment**) to the Master Professional Services Agreement (HA20-01) is entered into between the City of Tracy, a municipal corporation (**City**), and Harris & Associates, Inc., a California corporation (Consultant). City and Consultant are referred to individually as "**Party**" and collectively as "**Parties**."

Recitals

A. The City and Consultant entered into a Master Professional Services Agreement (HA20-01) (**Agreement**) for program management services for new development, which was approved by the City Council on September 15, 2020. The Agreement was executed by the Parties pursuant to Resolution No. 2020-167.

B. Section 2.1.1 entitled "Option to Extend" states, "This Agreement may be extended for an additional two (2) years by the City Manager following a written determination that Consultant has satisfactorily met all the requirements of this Agreement."

C. Consultant has satisfactorily met all requirements under the Agreement during the Agreement's initial term.

D. The parties seek to amend the Agreement to extend the Agreement through September 14, 2025.

C. This Amendment is being executed pursuant to Resolution No. ____, which was approved by Tracy City Council on _____, 2023.

Now therefore, in consideration of the foregoing, and the representations, warranties, covenants and conditions set forth below, and other good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, the Parties, intending to be legally bound, mutually agree as follows:

1. Incorporation by Reference. All capitalized terms used herein and not defined herein shall have the meanings set forth in the Agreement. Unless specifically modified by this Amendment, the Agreement shall remain unchanged and in full force and effect. By their signatures below, the Parties hereby ratify, approve, and confirm the Agreement remains in full force and effect.

2. Terms of Amendment.

A. Section 2.1 of the Agreement is hereby amended by deleting the text of Section 2.1 in its entirety and substituting in place thereof the following:

"The term of this Agreement Shall begin on September 15, 2020 and end on September 14, 2025, unless terminated for any reason, including a lack of appropriated funds to compensate services provided under this Agreement, in accordance with Section 6. Any such termination of this Agreement due to failure

of the City of Tracy Council to appropriate funds for payment for services under this Agreement shall not be a breach of the Agreement."

B. Section 2.1.1 is hereby deleted in its entirety.

3. Signatures. This Amendment may be executed in any number of counterparts, each of which shall be deemed to be an original and all of which taken together shall constitute one instrument. The individuals executing this Amendment represent and warrant that they have the right, power, legal capacity and authority to enter into and to execute this Amendment. This Amendment shall inure to the benefit of and be binding upon the parties and their respective successors and assigns.

The Parties agree to the full performance of the terms set forth here.

City of Tracy

By: _____
Nancy Young
Title: Mayor
Date: _____

Attest:

By: _____
Adrianne Richardson, City Clerk

Consultant

By: Alison Bouley
Alison Bouley
Title: Vice President
Date: 7/20/2023

By: Steve Winchester
Steven Winchester
Title: Chief Financial Officer
Date: 7/20/2023

Approved as to form

By: _____
Bijal M. Patel, City Attorney

CITY OF TRACY
MASTER PROFESSIONAL SERVICES AGREEMENT WITH
HARRIS & ASSOCIATES, INC.
Program Management Services HA20-01

This Master Professional Services Agreement (**Agreement**) is entered into between the City of Tracy, a municipal corporation (**City**), and HARRIS & ASSOCIATES, Inc., a California Corporation (Consultant). City and Consultant are referred to individually as "Party" and collectively as "Parties."

Recitals

A. City desires to retain Consultant to provide program management services for new development, including coordinating, managing and providing technical assistance, updating existing and completing new finance and implementation plans, assisting with City budget reviews, reimbursement assistance and a variety of other program management services.; and

B. On June 10, 2020, the City issued a Request for Proposals (RFP) for Program Management Services (**Project**). On July 10, 2020, Consultant submitted its proposal for the Project to the City. City has determined that Consultant possesses the skills, experience and certification required to provide the services.

C. After negotiations between the City and Consultant, the Parties have reached an agreement for the performance of services in accordance with the terms set forth in this Agreement.

D. This Agreement is being executed pursuant to Resolution No. 2020-167 approved by Tracy City Council on September 15, 2020.

Now therefore, the Parties mutually agree as follows:

1. **Scope of Work.** Consultant shall perform the services generally described in Exhibit "A" attached, and incorporated by reference, as directed by written Notice to Proceed by the City's Development Services Director or his designee. The services shall be performed by, or under the direct supervision of, Consultant's Authorized Representative: Alison Bouley. Consultant shall not replace its Authorized Representative, nor shall Consultant replace any of the personnel listed in Exhibit "A," nor shall Consultant use or replace any subcontractor or subconsultant, without City's prior written consent. A failure to obtain the City's prior written consent for any change or replacement in personnel or subcontractor/subconsultant may result in the termination of this Agreement.

1.1 Non-Exclusive Agreement. The City reserves the right to contract with other consultants providing the same or similar scope of services described above during the term of this Agreement. The City further reserves the right to, assign work, at its sole discretion, to consultants other than Consultant based on City's budget, experience, and skills of consultants based on the City's specific needs.

2. **Time of Performance.** Time is of the essence in the performance of services under this Agreement and the timing requirements set forth shall be strictly adhered to unless otherwise modified in writing in accordance with this Agreement. Consultant shall begin performance, and shall complete all required services no later than the dates set forth in each individual Notice to Proceed. Any services for which times for performance are not specified in each individual Notice to Proceed shall be started and completed by Consultant in a reasonably prompt and timely manner based upon the circumstances and direction communicated by the City to the Consultant. Consultant shall submit all requests for time extensions to the City in writing no later than ten days after the start of the condition which purportedly

caused the delay, and not later than the date on which performance is due. City shall grant or deny such requests at its sole discretion.

2.1 Term. The term of this Agreement shall begin on September 15, 2020 and end on September 14, 2023, unless terminated for any reason, including a lack of appropriated funds to compensate services provided under this Agreement, in accordance with Section 6. Any such termination of this Agreement due to failure of the City of Tracy Council to appropriate funds for payment for services under this Agreement shall not be a breach of the Agreement.

2.1.1 Option to Extend. This Agreement may be extended for an additional two (2) years by the City Manager following a written determination that Consultant has satisfactorily met all the requirements of this Agreement.

3. Compensation. City shall pay Consultant on a time and expense basis, at the billing rates set forth in Exhibit "B," attached and incorporated by reference for services performed under this Agreement.

3.1 Not to Exceed Amount. Consultant's total compensation under this Agreement shall not exceed $800,000 per fiscal year. Consultant's billing rates shall cover all costs and expenses for Consultant's performance of this Agreement. No work shall be performed by Consultant in excess of the total compensation amount provided in this section without the City's prior written approval. Effective January 1, 2022, Consultant's billing rates under this Agreement may be annually increased in January of each year by the lesser of 3% or the annual increase in the Cost of Living Index – All Items, for the Sacramento Metropolitan Region.

3.2 Invoices. Consultant shall submit monthly invoice(s) to the City that describe the services performed, including times, dates, and names of persons performing the services.

3.2.1 If Consultant is providing services in response to a development application, separate invoice(s) must be issued for each application and each invoice shall contain the City's designated development application number.

3.2.2 Consultant's failure to submit invoice(s) in accordance with these requirements may result in the City rejecting said invoice(s) and thereby delaying payment to Consultant.

3.3 Payment. Within 30 days after the City's receipt of invoice(s), City shall make payment to the Consultant based upon the services described on the invoice(s) and approved by the City.

4. Indemnification. Consultant shall, to the fullest extent permitted by law, indemnify, defend (with independent counsel approved by the City), and hold harmless the City from and against any claims to the extent arising out of Consultant's negligent performance of services or failure to comply with obligations under this Agreement, except to the extent caused by the sole, active negligence or willful misconduct of the City.

In this section, "City" means the City, its officials, officers, agents, employees and volunteers; "Consultant" means the Consultant, its employees, agents and subcontractors; "Claims" includes claims, demands, actions, losses, damages, injuries, and liability, direct or indirect (including any and all related costs and expenses); and "Arising out of" includes "pertaining to" and "relating to".

(The duty of a "design professional" to indemnify and defend the City is limited to claims that arise out of, pertain to, or relate to the negligence, recklessness or willful misconduct of the design professional, under Civ. Code § 2782.8.)

The provisions of this section survive completion of the services or the termination of this Agreement, and are not limited by the provisions of Section 5 relating to insurance.

5. Insurance. Consultant shall, throughout the duration of this Agreement, maintain insurance to cover Consultant, its agents, representatives, and employees in connection with the performance of services under this Agreement at the minimum levels set forth herein.

5.1 Commercial General Liability (with coverage at least as broad as ISO form CG 00 01 01 96) "per occurrence" coverage shall be maintained in an amount not less than $4,000,000 general aggregate and $2,000,000 per occurrence for general liability, bodily injury, personal injury, and property damage.

5.2 Automobile Liability (with coverage at least as broad as ISO form CA 00 01 07 97, for "any auto") "claims made" coverage shall be maintained in an amount not less than $1,000,000 per accident for bodily injury and property damage.

5.3 Workers' Compensation coverage shall be maintained as required by the State of California.

5.4 Professional Liability "claims made" coverage shall be maintained to cover damages that may be the result of errors, omissions, or negligent acts of Consultant in an amount not less than $1,000,000 per claim.

5.5 Endorsements. Consultant shall obtain endorsements to the automobile and commercial general liability insurance policies with the following provisions:

5.5.1 The City (including its elected officials, officers, employees, agents, and volunteers) shall be named as an additional "insured."

5.5.2 For any claims related to this Agreement, Consultant's coverage shall be primary insurance with respect to the City. Any insurance maintained by the City shall be excess of the Consultant's insurance and shall not contribute with it.

5.6 Notice of Cancellation. Consultant shall notify the City if the policy is canceled before the expiration date. For the purpose of this notice requirement, any material change in the policy prior to the expiration shall be considered a cancellation. Consultant shall immediately obtain a replacement policy.

5.7 Authorized Insurers. All insurance companies providing coverage to Consultant shall be insurance organizations authorized by the Insurance Commissioner of the State of California to transact the business of insurance in the State of California.

5.8 Insurance Certificate. Consultant shall provide evidence of compliance with the insurance requirements listed above by providing a certificate of insurance and endorsements, in a form satisfactory to the City, before the City signs this Agreement.

5.9 Substitute Certificates. Consultant shall provide a substitute certificate of insurance no later than 30 days prior to the policy expiration date of any insurance policy required by this Agreement.

5.10 Consultant's Obligation. Maintenance of insurance by the Consultant as specified in this Agreement shall in no way be interpreted as relieving the Consultant of any responsibility whatsoever (including indemnity obligations under this Agreement), and the Consultant may carry, at its own expense, such additional insurance as it deems necessary. Failure to provide or maintain any insurance policies or endorsements required herein may result in the City terminating this Agreement.

6. Termination. The City may terminate this Agreement by giving ten days' written notice to Consultant. Upon termination, Consultant shall give the City all original documents, including preliminary drafts and supporting documents, prepared by Consultant for this Agreement. The City shall pay Consultant for all services satisfactorily performed in accordance with this Agreement, up to the date notice is given.

7. Dispute Resolution. If any dispute arises between the City and Consultant that cannot be settled after engaging in good faith negotiations, City and Consultant agree to resolve the dispute in accordance with the following:

7.1 Each Party shall designate a senior management or executive level representative to negotiate the dispute;

7.2 The representatives shall attempt, through good faith negotiations, to resolve the dispute by any means within their authority.

7.3 If the issue remains unresolved after fifteen (15) days of good faith negotiations, the Parties shall attempt to resolve the disagreement by negotiations between legal counsel. If the aforementioned process fails, the Parties shall resolve any remaining disputes through mediation to expedite the resolution of the dispute.

7.4 The mediation process shall provide for the selection within fifteen (15) days by both Parties of a disinterested third person as mediator, shall be commenced within thirty (30) days and shall be concluded within fifteen (15) days from the commencement of the mediation.

7.5 The Parties shall equally bear the costs of any third party in any alternative dispute resolution process.

7.6 The dispute resolution process is a material condition to this Agreement and must be exhausted prior to either Party initiating legal action. This dispute resolution process is not intended to nor shall be construed to change the time periods for filing a claim or action specified by Government Code §§ 900 et seq.

8. Ownership of Work. All original documents prepared by Consultant for this Agreement, whether complete or in progress, are the property of the City, and shall be given to the City at the completion of Consultant's services, or upon demand from the City. No such documents shall be revealed or made available by Consultant to any third party without the City's prior written consent.

9. Independent Contractor Status. Consultant is an independent contractor and is solely responsible for the acts of its employees or agents, including any negligent acts or omissions. Consultant is not City's employee and Consultant shall have no authority, express or implied, to act on behalf of the City as an agent, or to bind the City to any obligation, unless the City provides prior written authorization. Consultant is free to work for other entities while under contract with the City. Consultant, and its agents or employees, are not entitled to City benefits.

10. Conflicts of Interest. Consultant (including its employees, agents, and subconsultants) shall not maintain or acquire any direct or indirect interest that conflicts with the performance of this Agreement. If Consultant maintains or acquires such a conflicting interest, the City may terminate any contract (including this Agreement) involving Consultant's conflicting interest.

11. Rebates, Kickbacks, or Other Unlawful Consideration. Consultant warrants that this Agreement was not obtained or secured through rebates, kickbacks, or other unlawful consideration either promised or paid to any City official or employee. For breach of this warranty, City shall have the right, in its sole discretion, to terminate this Agreement without liability; to pay only for the value of the work actually performed; or to deduct from the contract price; or otherwise recover the full amount of such rebate, kickback, or other unlawful consideration.

12. Notices. All notices, demands, or other communications which this Agreement contemplates or authorizes shall be in writing and shall be personally delivered or mailed to the other party to the addresses listed below. Communications shall be deemed to have been given and received on the first to occur of: (1) actual receipt at the address designated below, or (2) three working days after the deposit in the United States Mail of registered or certified mail, sent to the address designated below.

To City:
Robert Armijo
City Engineer
Development Services
333 Civic Center Plaza

To Consultant:
Alison Bouley
Senior Director
Harris & Associates
1401 Willow Pass Road, Suite 500

Tracy, CA 95376

Concord, CA 94520

With a copy to:
City Attorney
333 Civic Center Plaza
Tracy, CA 95376

13. Miscellaneous.

13.1 Standard of Care. Unless otherwise specified in this Agreement, the standard of care applicable to Consultant's services will be the degree of skill and diligence ordinarily used by reputable professionals performing in the same or similar time and locality, and under the same or similar circumstances.

13.2 Amendments. This Agreement may not be modified orally or in any manner other than by an agreement in writing signed by both Parties.

13.3 Waivers. Waiver of a breach or default under this Agreement shall not constitute a continuing waiver or a waiver of a subsequent breach of the same or any other provision of this Agreement.

13.4 Assignment and Delegation. Consultant may not assign, transfer or delegate this Agreement or any portion of it without the City's written consent. Any attempt to do so will be void. City's consent to one assignment shall not be deemed to be a consent to any subsequent assignment.

13.5 Jurisdiction and Venue. The interpretation, validity, and enforcement of the Agreement shall be governed by and construed under the laws of the State of California. Any suit, claim, or legal proceeding of any kind related to this Agreement shall be filed and heard in a court of competent jurisdiction in the County of San Joaquin.

13.6 Compliance with the Law. Consultant shall comply with all applicable local, state, and federal laws, whether or not those laws are expressly stated in this Agreement.

13.6.1 Prevailing Wage Laws. Consultant is aware of the requirements of California Labor Code Section 1720, et seq., and 1770, et seq., as well as California Code of Regulations, Title 8, Section 16000, et seq., ("Prevailing Wage Laws"), which require the payment of prevailing wage rates; employment of apprentices (§ 1777.5), certified payroll records (§1776), hours of labor (§1813 and §1815), debarment of contractors and subcontractors (§1777.1) and the performance of other requirements on "public works" and "maintenance" projects. If the services being performed under this Agreement are part of a "public works" or "maintenance" project, as defined in the Prevailing Wage Laws, and if the total compensation is $1,000 or more, Consultant agrees to fully comply with such Prevailing Wage Laws. These prevailing rates are on file with the City and are available online at http://www.dir.ca.gov/DLSR. Consultant shall defend, indemnify and hold the City, its officials, officers, employees and agents, harmless from any and all claims, costs, penalties, or interests arising out of any failure or alleged failure to comply with the Prevailing Wage Laws.

13.6.2 Non-discrimination. Consultant represents and warrants that it is an equal opportunity employer and it shall not discriminate against any subconsultant, employee or applicant for employment because of race, religion, color, national origin, handicap, ancestry, sex or age. Consultant shall also comply with all applicable anti-discrimination federal and state laws, including but not limited to, the California Fair Employment and Housing Act (Gov. Code 12990 (a-f) et seq.).

13.7 Business Entity Status. Consultant is responsible for filing all required documents and/or forms with the California Secretary of State and meeting all requirements of the Franchise Tax Board, to the extent such requirements apply to Consultant. By entering into this Agreement, Consultant represents that it is not a suspended corporation. If Consultant is a suspended corporation at the time it enters this Agreement, City may take steps to have this Agreement declared voidable.

13.8 Business License. Before the City signs this Agreement, Consultant shall obtain a City of Tracy Business License. Consultant shall maintain an active City of Tracy Business License during the term of this Agreement.

13.9 Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the Parties hereto and their respective successors and assigns.

13.10 Construction of Agreement. Each Party hereto has had an equivalent opportunity to participate in the drafting of this Agreement and/or to consult with legal counsel. Therefore, the usual construction of an agreement against the drafting Party shall not apply hereto.

13.11 Severability. If a term of this Agreement is held invalid by a court of competent jurisdiction, the Agreement shall be construed as not containing that term, and the remainder of this Agreement shall remain in effect.

13.12 Controlling Provisions. In the case of any conflict between the terms of this Agreement and the Exhibits hereto, and Consultant's proposal (if any), the Agreement shall control. In the case of any conflict between the Exhibits hereto and the Consultant's proposal (if any), the Exhibits shall control.

13.13 Entire Agreement. This Agreement and the attached Exhibits comprise the entire integrated understanding between the Parties concerning the services to be performed. This Agreement supersedes all prior negotiations, representations or agreements. All exhibits attached hereto are incorporated by reference herein.

14. Signatures. The individuals executing this Agreement on behalf of Consultant represent and warrant that they have the right, power, legal capacity and authority to enter into and to execute this Agreement on behalf of Consultant.

[SIGNATURES ON FOLLOWING PAGE]

The Parties agree to the full performance of the terms set forth here.

City of Tracy

By: Robert Rickman
Title: Mayor
Date: 11-8-2020

Attest:

Adrianne Richardson, City Clerk

Approved as to form:

Leticia M. Ramirez, City Attorney

Consultant

By: Michael McCormick
Title: Senior Vice President
Date: 8/27/2020

Federal Employer Tax ID No. 94-2385238

By: Steven Winchester
Title: Chief Financial Officer
Date: 8/27/2020

Exhibits:

A Scope of Work, including personnel and time of performance (See Agreement sections 1 and 2.)

B Compensation (See Agreement section 3.)

EXHIBIT A
MASTER PROFESSIONAL SERVICES AGREEMENT HA20-01
SCOPE OF SERVICES

SCOPE OF SERVICES. Services for various programs included in this MPSA will include but are not limited to the following development areas within the City and its sphere of influence:

- Plan C Development Area
- South MacArthur Development Area
- North East Industrial Phase I and Phase II
- ISP South
- Gateway
- Presidio
- Infill Development Area
- I-205 Specific Plan
- Citywide Master Plans
- New General Plan Areas
- Cordes Ranch
- Ellis Specific Plan
- Tracy Hills Specific Plan

The City reserves the right to add or delete any of the areas or Specific Plans listed above from the proposed scope of work at any time during the period of this Master Professional Services Agreement.

Work assignments will be issued by issuing a Notice to Proceed, which will specify the scope of services, schedule, duration, staffing, hourly rates, not-to-exceed fee, and other relevant items. Notices to Proceed may be amended in accordance with provisions of the MPSA. The specific scope of services for a Notice to Proceed may include, but are not limited to, the following tasks:

- Review and update Development Impact Fees.
- Assist in reconciliation of various funds related to Development Impact Fees.
- Assist in close-out of programs as requested by the City.
- Preparation and/or update of Finance and Implementation Plans for various Specific Plans.
- Coordinate with the infrastructure consultants, and manage, review and recommend City approval of various infrastructure studies/master plans.
- Assist in the formation of Benefit Districts.
- Prepare City Council agenda items and make presentations during City Council meetings.
- Meet with City staff, development community and other consultants to strategize and implement various elements of the programs.
- Prepare cost estimates of various infrastructure projects.

- Assist in calculating and monitoring reimbursements owed to developers for infrastructure design and construction.
- Assist in calculating and monitoring credits for infrastructure design and construction.
- Assist the City in the annual budget review of the CIP projects.
- Answer questions from developers and prepare fee estimates as needed.

PROJECT PERSONNEL. Consultant shall assign the following personnel to perform the tasks set forth in this agreement. Additional staff may be assigned subject to approval of City.

Project Director:	Alison Bouley, PE
Acquisition Audit Lead:	Adam Marston
Impact Fee Lead:	Joel Nagamine, PE
Nexus Study Lead:	Megan Quinn
Assessment District Lead:	Rick Clark
Senior Project Analyst:	Diana Sheng
Project Analyst	Arn Selorio
Acquisition Audit QA/QC	Anna Tan-Gatue, PE

EXHIBIT B - Compensation
MASTER PROFESSIONAL SERVICES AGREEMENT HA20-01
BILLING RATE SCHEDULE

Effective through December 31, 2021

Hourly Rates of Named "Key Team Members" (2020-2021):

Alison Bouley	Project Director	$240
Adam Marston	Acquisition Audit Lead	$155
Joel Nagamine	Impact Fee Lead	$155
Megan Quinn	Nexus Study Lead	$200
Rick Clark	Assessment District Lead	$175
Diana Sheng	Senior Project Analyst	$145
Arn Selorio	Project Analyst	$135
Anna Tan-Gatue	Acquisition Audit QA/QC	$175

FINANCIAL ENGINEERING SERVICES	Hourly Rate Range
Senior Directors	$240-280
Directors	$235-260
Senior Project Managers	$190-250
Project Managers	$175-220
Senior Project Engineers	$170-210
Project Engineers	$130-180
Senior Project Analyst	$115-165
Project Analyst	$95-145
Technical Support	$90-120
Administration	$85-100

CONSTRUCTION / PROGRAM MANAGEMENT SERVICES	Hourly Rate Range
Senior Directors	$250-280
Directors	$235-260
Senior Project Managers	$190-250
Project Managers	$180-220
Construction Managers	$145-230
Resident Engineers	$165-230
Construction Engineers	$125-230
Scheduling Engineers	$125-200
Cost Engineers	$125-200
Inspectors*	$105-170
Technicians	$105-170
Administration	$65-140

*Inspectors working in the State of California are subject to the Prevailing Wage Rates established for that area.

CITY OF TRACY
AMENDMENT NO. 1 TO
MASTER PROFESSIONAL SERVICES AGREEMENT WITH
HARRIS & ASSOCIATES, INC.
Program Management Services HA20-02

This Amendment No. 1 (**Amendment**) to the Master Professional Services Agreement (HA20-02) is entered into between the City of Tracy, a municipal corporation (**City**), and Harris & Associates, Inc., a California corporation (Consultant). City and Consultant are referred to individually as "**Party**" and collectively as "**Parties**."

Recitals

A. The City and Consultant entered into a Master Professional Services Agreement (HA20-02) (**Agreement**) for reimbursement audit services for new development, which was approved by the City Council on September 15, 2020. The Agreement was executed by the Parties pursuant to Resolution No. 2020-167.

B. Section 2.1.1 entitled "Option to Extend" states, "This Agreement may be extended for an additional two years by the City Manager following a written determination that Consultant has satisfactorily met all the requirements of this Agreement."

C. Consultant has satisfactorily met all requirements under the Agreement during the Agreement's initial term.

D. The parties seek to amend the Agreement to extend the Agreement through September 14, 2025.

C. This Amendment is being executed pursuant to Resolution No. ____, which was approved by Tracy City Council on _____, 2023.

Now therefore, in consideration of the foregoing, and the representations, warranties, covenants and conditions set forth below, and other good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, the Parties, intending to be legally bound, mutually agree as follows:

1. Incorporation by Reference. All capitalized terms used herein and not defined herein shall have the meanings set forth in the Agreement. Unless specifically modified by this Amendment, the Agreement shall remain unchanged and in full force and effect. By their signatures below, the Parties hereby ratify, approve, and confirm the Agreement remains in full force and effect

2. Terms of Amendment.

A. Section 2.1 of the Agreement is hereby amended by deleting the text of Section 2.1 in its entirety and substituting in place thereof following:

"The term of this Agreement Shall begin on September 15, 2020 and end on September 14, 2025, unless terminated for any reason, including a lack of appropriated funds to compensate services provided under this Agreement, in accordance with Section 6. Any such termination of this Agreement due to failure

of the City of Tracy Council to appropriate funds to payment for services under this Agreement shall not be a breach of the Agreement."

B. Section 2.1.1 is hereby deleted in its entirety.

3. Signatures. This Amendment may be executed in any number of counterparts, each of which shall be deemed to be an original and all of which taken together shall constitute one instrument. The individuals executing this Amendment represent and warrant that they have the right, power, legal capacity and authority to enter into and to execute this Amendment. This Amendment shall inure to the benefit of and be binding upon the parties and their respective successors and assigns.

The Parties agree to the full performance of the terms set forth here.

City of Tracy

By: _____
Nancy Young
Title: Mayor
Date: _____

Consultant

By: Alison Bouley
Alison Bouley
Title: Vice President
Date: 7/20/2023

Attest:

By: _____
Adrianne Richardson, City Clerk

By: Steve Winchester
Steven Winchester
Title: Chief Financial Officer
Date: 7/20/2023

Approved as to form

By: _____
Bijal M. Patel, City Attorney

CITY OF TRACY
MASTER PROFESSIONAL SERVICES AGREEMENT WITH
HARRIS & ASSOCIATES, INC.
Program Management Services HA20-02

This Master Professional Services Agreement (**Agreement**) is entered into between the City of Tracy, a municipal corporation (**City**), and HARRIS & ASSOCIATES, Inc., a California Corporation (**Consultant**). City and Consultant are referred to individually as "Party" and collectively as "Parties."

Recitals

A. City desires to retain Consultant to provide reimbursement audit services for new development which includes reviewing contracts, change order, invoices, checks, and lien releases to establish the acquisition price of developer constructed facilities; and

B. On June 10, 2020, the City issued a Request for Proposals (RFP) for Program Management Services (**Project**). On July 10, 2020, Consultant submitted its proposal for the Project to the City. City has determined that Consultant possesses the skills, experience and certification required to provide the services.

C. After negotiations between the City and Consultant, the Parties have reached an agreement for the performance of services in accordance with the terms set forth in this Agreement.

D. This Agreement is being executed pursuant to Resolution No. 2020-167 approved by Tracy City Council on September 15, 2020.

Now therefore, the Parties mutually agree as follows:

1. Scope of Work. Consultant shall perform the services generally described in Exhibit "A" attached, and incorporated by reference, as directed by written Notice to Proceed by the City's Development Services Director or his designee. The services shall be performed by, or under the direct supervision of, Consultant's Authorized Representative: Alison Bouley. Consultant shall not replace its Authorized Representative, nor shall Consultant replace any of the personnel listed in Exhibit "A," nor shall Consultant use or replace any subcontractor or subconsultant, without City's prior written consent. A failure to obtain the City's prior written consent for any change or replacement in personnel or subcontractor/subconsultant may result in the termination of this Agreement.

1.1 Non-Exclusive Agreement. The City reserves the right to contract with other consultants providing the same or similar scope of services described above during the term of this Agreement. The City further reserves the right to, assign work, at its sole discretion, to consultants other than Consultant based on City's budget, experience, and skills of consultants based on the City's specific needs.

2. Time of Performance. Time is of the essence in the performance of services under this Agreement and the timing requirements set forth shall be strictly adhered to unless otherwise modified in writing in accordance with this Agreement. Consultant shall begin performance, and shall complete all required services no later than the dates set forth in each individual Notice to Proceed. Any services for which times for performance are not specified in each individual Notice to Proceed shall be started and completed by Consultant in a reasonably prompt and timely manner based upon the circumstances and direction communicated by the City to the Consultant. Consultant shall submit all requests for time extensions to the City in writing no later than ten days after the start of the condition which purportedly

caused the delay, and not later than the date on which performance is due. City shall grant or deny such requests at its sole discretion.

2.1 Term. The term of this Agreement shall begin on September 15, 2020 and end on September 14, 2023, unless terminated for any reason, including a lack of appropriated funds to compensate services provided under this Agreement, in accordance with Section 6. Any such termination of this Agreement due to failure of the City of Tracy Council to appropriate funds for payment for services under this Agreement shall not be a breach of the Agreement.

2.1.1 Option to Extend. This Agreement may be extended for an additional two years by the City Manager following a written determination that Consultant has satisfactorily met all the requirements of this Agreement.

3. Compensation. City shall pay Consultant on a time and expense basis, at the billing rates set forth in Exhibit "B," attached and incorporated by reference for services performed under this Agreement.

3.1 Not to Exceed Amount. Consultant's total compensation under this Agreement shall not exceed $800,000 per fiscal year. Consultant's billing rates shall cover all costs and expenses for Consultant's performance of this Agreement. No work shall be performed by Consultant in excess of the total compensation amount provided in this section without the City's prior written approval. Effective January 1, 2022, Consultant's billing rates under this Agreement may be annually increased in January of each year by the lesser of 3% or the annual increase in the Cost of Living Index – All Items, for the Sacramento Metropolitan Region.

3.2 Invoices. Consultant shall submit monthly invoice(s) to the City that describe the services performed, including times, dates, and names of persons performing the services.

3.2.1 If Consultant is providing services in response to a development application, separate invoice(s) must be issued for each application and each invoice shall contain the City's designated development application number.

3.2.2 Consultant's failure to submit invoice(s) in accordance with these requirements may result in the City rejecting said invoice(s) and thereby delaying payment to Consultant.

3.3 Payment. Within 30 days after the City's receipt of invoice(s), City shall make payment to the Consultant based upon the services described on the invoice(s) and approved by the City.

4. Indemnification. Consultant shall, to the fullest extent permitted by law, indemnify, defend (with independent counsel approved by the City), and hold harmless the City from and against any claims to the extent arising out of Consultant's negligent performance of services or failure to comply with obligations under this Agreement, except to the extent caused by the sole, active negligence or willful misconduct of the City.

In this section, "City" means the City, its officials, officers, agents, employees and volunteers; "Consultant" means the Consultant, its employees, agents and subcontractors; "Claims" includes claims, demands, actions, losses, damages, injuries, and liability, direct or indirect (including any and all related costs and expenses) ; and "Arising out of" includes "pertaining to" and "relating to".

(The duty of a "design professional" to indemnify and defend the City is limited to claims that arise out of, pertain to, or relate to the negligence, recklessness or willful misconduct of the design professional, under Civ. Code § 2782.8.)

The provisions of this section survive completion of the services or the termination of this Agreement, and are not limited by the provisions of Section 5 relating to insurance.

5. Insurance. Consultant shall, throughout the duration of this Agreement, maintain insurance to cover Consultant, its agents, representatives, and employees in connection with the performance of services under this Agreement at the minimum levels set forth herein.

5.1 Commercial General Liability (with coverage at least as broad as ISO form CG 00 01 01 96) "per occurrence" coverage shall be maintained in an amount not less than $4,000,000 general aggregate and $2,000,000 per occurrence for general liability, bodily injury, personal injury, and property damage.

5.2 Automobile Liability (with coverage at least as broad as ISO form CA 00 01 07 97, for "any auto") "claims made" coverage shall be maintained in an amount not less than $1,000,000 per accident for bodily injury and property damage.

5.3 Workers' Compensation coverage shall be maintained as required by the State of California.

5.4 Professional Liability "claims made" coverage shall be maintained to cover damages that may be the result of errors, omissions, or negligent acts of Consultant in an amount not less than $1,000,000 per claim.

5.5 Endorsements. Consultant shall obtain endorsements to the automobile and commercial general liability insurance policies with the following provisions:

5.5.1 The City (including its elected officials, officers, employees, agents, and volunteers) shall be named as an additional "insured."

5.5.2 For any claims related to this Agreement, Consultant's coverage shall be primary insurance with respect to the City. Any insurance maintained by the City shall be excess of the Consultant's insurance and shall not contribute with it.

5.6 Notice of Cancellation. Consultant shall notify the City if the policy is canceled before the expiration date. For the purpose of this notice requirement, any material change in the policy prior to the expiration shall be considered a cancellation. Consultant shall immediately obtain a replacement policy.

5.7 Authorized Insurers. All insurance companies providing coverage to Consultant shall be insurance organizations authorized by the Insurance Commissioner of the State of California to transact the business of insurance in the State of California.

5.8 Insurance Certificate. Consultant shall provide evidence of compliance with the insurance requirements listed above by providing a certificate of insurance and endorsements, in a form satisfactory to the City, before the City signs this Agreement.

5.9 Substitute Certificates. Consultant shall provide a substitute certificate of insurance no later than 30 days prior to the policy expiration date of any insurance policy required by this Agreement.

5.10 Consultant's Obligation. Maintenance of insurance by the Consultant as specified in this Agreement shall in no way be interpreted as relieving the Consultant of any responsibility whatsoever (including indemnity obligations under this Agreement), and the Consultant may carry, at its own expense, such additional insurance as it deems necessary. Failure to provide or maintain any insurance policies or endorsements required herein may result in the City terminating this Agreement.

6. Termination. The City may terminate this Agreement by giving ten days' written notice to Consultant. Upon termination, Consultant shall give the City all original documents, including preliminary drafts and supporting documents, prepared by Consultant for this Agreement. The City shall pay Consultant for all services satisfactorily performed in accordance with this Agreement, up to the date notice is given.

7. Dispute Resolution. If any dispute arises between the City and Consultant that cannot be settled after engaging in good faith negotiations, City and Consultant agree to resolve the dispute in accordance with the following:

7.1 Each Party shall designate a senior management or executive level representative to negotiate the dispute;

7.2 The representatives shall attempt, through good faith negotiations, to resolve the dispute by any means within their authority.

7.3 If the issue remains unresolved after fifteen (15) days of good faith negotiations, the Parties shall attempt to resolve the disagreement by negotiations between legal counsel. If the aforementioned process fails, the Parties shall resolve any remaining disputes through mediation to expedite the resolution of the dispute.

7.4 The mediation process shall provide for the selection within fifteen (15) days by both Parties of a disinterested third person as mediator, shall be commenced within thirty (30) days and shall be concluded within fifteen (15) days from the commencement of the mediation.

7.5 The Parties shall equally bear the costs of any third party in any alternative dispute resolution process.

7.6 The dispute resolution process is a material condition to this Agreement and must be exhausted prior to either Party initiating legal action. This dispute resolution process is not intended to nor shall be construed to change the time periods for filing a claim or action specified by Government Code §§ 900 et seq.

8. Ownership of Work. All original documents prepared by Consultant for this Agreement, whether complete or in progress, are the property of the City, and shall be given to the City at the completion of Consultant's services, or upon demand from the City. No such documents shall be revealed or made available by Consultant to any third party without the City's prior written consent.

9. Independent Contractor Status. Consultant is an independent contractor and is solely responsible for the acts of its employees or agents, including any negligent acts or omissions. Consultant is not City's employee and Consultant shall have no authority, express or implied, to act on behalf of the City as an agent, or to bind the City to any obligation, unless the City provides prior written authorization. Consultant is free to work for other entities while under contract with the City. Consultant, and its agents or employees, are not entitled to City benefits.

10. Conflicts of Interest. Consultant (including its employees, agents, and subconsultants) shall not maintain or acquire any direct or indirect interest that conflicts with the performance of this Agreement. If Consultant maintains or acquires such a conflicting interest, the City may terminate any contract (including this Agreement) involving Consultant's conflicting interest.

11. Rebates, Kickbacks, or Other Unlawful Consideration. Consultant warrants that this Agreement was not obtained or secured through rebates, kickbacks, or other unlawful consideration either promised or paid to any City official or employee. For breach of this warranty, City shall have the right, in its sole discretion, to terminate this Agreement without liability; to pay only for the value of the work actually performed; or to deduct from the contract price; or otherwise recover the full amount of such rebate, kickback, or other unlawful consideration.

12. Notices. All notices, demands, or other communications which this Agreement contemplates or authorizes shall be in writing and shall be personally delivered or mailed to the other party to the addresses listed below. Communications shall be deemed to have been given and received on the first to occur of: (1) actual receipt at the address designated below, or (2) three working days after the deposit in the United States Mail of registered or certified mail, sent to the address designated below.

To City:
Robert Armijo
City Engineer
Development Services
333 Civic Center Plaza

To Consultant:
Alison Bouley
Senior Director
Harris & Associates
1401 Willow Pass Road, Suite 500

Tracy, CA 95376

Concord, CA 94520

With a copy to:
City Attorney
333 Civic Center Plaza
Tracy, CA 95376

13. Miscellaneous.

13.1 Standard of Care. Unless otherwise specified in this Agreement, the standard of care applicable to Consultant's services will be the degree of skill and diligence ordinarily used by reputable professionals performing in the same or similar time and locality, and under the same or similar circumstances.

13.2 Amendments. This Agreement may not be modified orally or in any manner other than by an agreement in writing signed by both Parties.

13.3 Waivers. Waiver of a breach or default under this Agreement shall not constitute a continuing waiver or a waiver of a subsequent breach of the same or any other provision of this Agreement.

13.4 Assignment and Delegation. Consultant may not assign, transfer or delegate this Agreement or any portion of it without the City's written consent. Any attempt to do so will be void. City's consent to one assignment shall not be deemed to be a consent to any subsequent assignment.

13.5 Jurisdiction and Venue. The interpretation, validity, and enforcement of the Agreement shall be governed by and construed under the laws of the State of California. Any suit, claim, or legal proceeding of any kind related to this Agreement shall be filed and heard in a court of competent jurisdiction in the County of San Joaquin.

13.6 Compliance with the Law. Consultant shall comply with all applicable local, state, and federal laws, whether or not those laws are expressly stated in this Agreement.

13.6.1 Prevailing Wage Laws. Consultant is aware of the requirements of California Labor Code Section 1720, et seq., and 1770, et seq., as well as California Code of Regulations, Title 8, Section 16000, et seq., ("Prevailing Wage Laws"), which require the payment of prevailing wage rates; employment of apprentices (§ 1777.5), certified payroll records (§1776), hours of labor (§1813 and §1815), debarment of contractors and subcontractors (§1777.1) and the performance of other requirements on "public works" and "maintenance" projects. If the services being performed under this Agreement are part of a "public works" or "maintenance" project, as defined in the Prevailing Wage Laws, and if the total compensation is $1,000 or more, Consultant agrees to fully comply with such Prevailing Wage Laws. These prevailing rates are on file with the City and are available online at http://www.dir.ca.gov/DLSR. Consultant shall defend, indemnify and hold the City, its officials, officers, employees and agents, harmless from any and all claims, costs, penalties, or interests arising out of any failure or alleged failure to comply with the Prevailing Wage Laws.

13.6.2 Non-discrimination. Consultant represents and warrants that it is an equal opportunity employer and it shall not discriminate against any subconsultant, employee or applicant for employment because of race, religion, color, national origin, handicap, ancestry, sex or age. Consultant shall also comply with all applicable anti-discrimination federal and state laws, including but not limited to, the California Fair Employment and Housing Act (Gov. Code 12990 (a-f) et seq.).

13.7 Business Entity Status. Consultant is responsible for filing all required documents and/or forms with the California Secretary of State and meeting all requirements of the Franchise Tax Board, to the extent such requirements apply to Consultant. By entering into this Agreement, Consultant represents that it is not a suspended corporation. If Consultant is a suspended corporation at the time it enters this Agreement, City may take steps to have this Agreement declared voidable.

13.8 Business License. Before the City signs this Agreement, Consultant shall obtain a City of Tracy Business License. Consultant shall maintain an active City of Tracy Business License during the term of this Agreement.

13.9 Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the Parties hereto and their respective successors and assigns.

13.10 Construction of Agreement. Each Party hereto has had an equivalent opportunity to participate in the drafting of this Agreement and/or to consult with legal counsel. Therefore, the usual construction of an agreement against the drafting Party shall not apply hereto.

13.11 Severability. If a term of this Agreement is held invalid by a court of competent jurisdiction, the Agreement shall be construed as not containing that term, and the remainder of this Agreement shall remain in effect.

13.12 Controlling Provisions. In the case of any conflict between the terms of this Agreement and the Exhibits hereto, and Consultant's proposal (if any), the Agreement shall control. In the case of any conflict between the Exhibits hereto and the Consultant's proposal (if any), the Exhibits shall control.

13.13 Entire Agreement. This Agreement and the attached Exhibits comprise the entire integrated understanding between the Parties concerning the services to be performed. This Agreement supersedes all prior negotiations, representations or agreements. All exhibits attached hereto are incorporated by reference herein.

14. Signatures. The individuals executing this Agreement on behalf of Consultant represent and warrant that they have the right, power, legal capacity and authority to enter into and to execute this Agreement on behalf of Consultant.

[SIGNATURES ON FOLLOWING PAGE]

The Parties agree to the full performance of the terms set forth here.

City of Tracy

By: Robert Rickman
Title: Mayor
Date: 11-8-2020

Attest:

Adrianne Richardson, City Clerk

Approved as to form:

Leticia M. Ramirez, City Attorney

Consultant

By: Michael McCormick
Title: Senior Vice President
Date: 8/27/2020

Federal Employer Tax ID No. 94-2385238

By: Steven Winchester
Title: Chief Financial Officer
Date: 8/27/2020

Exhibits:

- A Scope of Work, including personnel and time of performance (See Agreement sections 1 and 2.)
- B Compensation (See Agreement section 3.)

EXHIBIT A
MASTER PROFESSIONAL SERVICES AGREEMENT HA20-02
SCOPE OF SERVICES

SCOPE OF SERVICES. Harris will review reimbursement requests relating to the City's master plan/program fees received from developers and determine a recommended eligible reimbursement amount. This includes reviewing all invoices, proof of payment, cancelled checks, approved change orders, and construction documents. As required, Harris will prepare and submit an additional information request (AIR) to the developer in order to request missing documentation or clarify any information received.

Once all questions have been answered, Harris will prepare a written Audit Report that includes:

1. A summary of costs to be reimbursed by the improvement fund for each eligible facility and/or discrete component, as specified in the Acquisition Agreement
2. An executive summary and audit summary
3. Improvement location map
4. A summary listing of hard and soft costs by eligible facility
5. A contract summary outlining the original price, change orders (if any), final contract price, and the eligible portions for reimbursement
6. Verification that invoices, canceled checks, and unconditional lien releases have been submitted
7. A recommendation of the costs that are eligible and appropriate for reimbursement
8. A description of any cost that have been disallowed or determined to be ineligible for reimbursement

Harris will prepare and maintain a submittal tracking spreadsheet that will track dates of all submittals, due dates, and approved amounts. Harris will provide the spreadsheet to the City and developer as necessary and give status reports as requested.

Harris will participate in a conference call with the City and developer to review the audit report and recommendations as needed.

COMPENSATION. The total for all Notices to Proceed under the agreement shall not exceed Eight Hundred Thousand Dollars ($800,000.00) per fiscal year.

PROJECT PERSONNEL. Consultant shall assign the following personnel to perform the tasks set forth in this agreement. Additional staff may be assigned subject to approval of CITY.

Project Director: Alison Bouley, PE

Acquisition Audit Lead:	Adam Marston
Impact Fee Lead:	Joel Nagamine, PE
Nexus Study Lead:	Megan Quinn
Assessment District Lead:	Rick Clark
Senior Project Analyst:	Diana Sheng
Project Analyst	Arn Selorio
Acquisition Audit QA/QC	Anna Tan-Gatue, PE

EXHIBIT B - Compensation
MASTER PROFESSIONAL SERVICES AGREEMENT HA20-01
BILLING RATE SCHEDULE

Effective through December 31, 2021

Hourly Rates of Named "Key Team Members" (2020-2021):

Alison Bouley	Project Director	$240
Adam Marston	Acquisition Audit Lead	$155
Joel Nagamine	Impact Fee Lead	$155
Megan Quinn	Nexus Study Lead	$200
Rick Clark	Assessment District Lead	$175
Diana Sheng	Senior Project Analyst	$145
Arn Selorio	Project Analyst	$135
Anna Tan-Gatue	Acquisition Audit QA/QC	$175

FINANCIAL ENGINEERING SERVICES	Hourly Rate Range
Senior Directors	$240-280
Directors	$235-260
Senior Project Managers	$190-250
Project Managers	$175-220
Senior Project Engineers	$170-210
Project Engineers	$130-180
Senior Project Analyst	$115-165
Project Analyst	$95-145
Technical Support	$90-120
Administration	$85-100

CONSTRUCTION / PROGRAM MANAGEMENT SERVICES	Hourly Rate Range
Senior Directors	$250-280
Directors	$235-260
Senior Project Managers	$190-250
Project Managers	$180-220
Construction Managers	$145-230
Resident Engineers	$165-230
Construction Engineers	$125-230
Scheduling Engineers	$125-200
Cost Engineers	$125-200
Inspectors*	$105-170
Technicians	$105-170
Administration	$65-140

*Inspectors working in the State of California are subject to the Prevailing Wage Rates established for that area.

APPROVED AS TO FORM AND LEGALITY

_____
CITY ATTORNEY'S OFFICE

TRACY CITY COUNCIL

RESOLUTION 2023-_____

ADOPTING A RESOLUTION (1) APPROVING AMENDMENT NO. 1 TO THE MASTER PROFESSIONAL SERVICES AGREEMENT (HA20-01) WITH HARRIS AND ASSOCIATES TO PROVIDE PROGRAM MANAGEMENT SERVICES TO EXTEND THE AGREEMENT THROUGH SEPTEMBER 14, 2025, FOR A NOT-TO-EXCEED AMOUNT OF $800,000 PER FISCAL YEAR, AND (2) APPROVING AMENDMENT NO. 1 TO THE MASTER PROFESSIONAL SERVICES AGREEMENT (HA20-02) WITH HARRIS AND ASSOCIATES TO PROVIDE PROGRAM MANAGEMENT SERVICES TO EXTEND THE AGREEMENT THROUGH SEPTEMBER 14, 2025, FOR A NOT-TO-EXCEED AMOUNT OF $800,000 PER FISCAL YEAR

WHEREAS, the City issued a Request for Proposals (RFP) on July 10, 2020, for Program Management Services; and

WHEREAS, on September 15, 2020, by the adoption of Resolution No. 2020-167, City Council authorized the execution of the Master Professional Services Agreements (HA20-01 and HA20-02)(Agreements) with Harris and Associates (Consultant); and

WHEREAS, the Agreements will expire on September 14, 2023; and

WHEREAS, Section 2.1.1 of the Agreements provide that the Agreements may be extended for an additional two (2) years by the City Manager provided the City determines that Consultant has satisfactorily performed all obligations under the Agreements; and

WHEREAS, Consultant has satisfactorily met all of the terms of the Agreements; and

WHEREAS, City staff is currently using the services of the Consultant to assist staff in updating development impact fees, preparing impact fee quotes, preparing revenue projections, tracking credits and reimbursements, updating Finance and Implementation Plans (FIPs), forecasting fee revenue and project expenses, updating construction cost estimates, forming benefit districts, assisting in acquisition of infrastructure through CFDs, calculating reimbursements and managing infrastructure master plans; and

WHEREAS, the City and Consultant wish to amend the Agreements to extend through September 14, 2025; now, therefore, be it

RESOLVED: That the City Council of the City of Tracy hereby (1) approves Amendment No. 1 to the Master Professional Services Agreement (HA20-01) with Harris and Associates for program management services to extend the agreement through September 14, 2025, for a not-to-exceed amount of $800,000 per fiscal year, and (2) approves Amendment No. 1 to the

Master Professional Services Agreement (HA20-02) with Harris and Associates for program management services to extend the agreement through September 14, 2025, for a not-to-exceed amount of $800,000 per fiscal year; and be it

FURTHER RESOLVED: That this resolution takes effect immediately upon its adoption.

* * * * * * * * * * * * * *

The foregoing Resolution 2023-_____ was adopted by the Tracy City Council on the 5th day of September, 2023 by the following vote:

AYES: COUNCIL MEMBERS:
NOES: COUNCIL MEMBERS:
ABSENT: COUNCIL MEMBERS:
ABSTENTION: COUNCIL MEMBERS:

_____
NANCY D. YOUNG
Mayor of the City of Tracy, California

ATTEST:_____
ADRIANNE RICHARDSON
City Clerk and Clerk of the Council of the
City of Tracy, California

September 5, 2023

Agenda Item 1.G

RECOMMENDATION

Staff recommends that the City Council adopt a resolution approving (1) Amendment No. 1 to the Master Professional Services Agreement with Blackwater Consulting Engineers, Inc. for water pressure and capacity analyses, and engineering assistance to extend the agreement through December 31, 2024, for a not-to-exceed amount of $200,000 per calendar year.

EXECUTIVE SUMMARY

The proposed amendment (Attachment A) will extend the Master Professional Services Agreement (MPSA) with Blackwater Consulting Engineers, Inc. (Consultant) for water pressure and capacity analyses and engineering assistance through December 31, 2024. The amendment will keep the same compensation, a not-to-exceed amount of $200,000 per calendar year.

BACKGROUND AND LEGISLATIVE HISTORY

The City issued a Request for Proposals (RFP) for water pressure and capacity analyses on July 18, 2019. As a result, the City entered into a MPSA (Attachment B) with Consultant that was approved by Council on September 1, 2020, under Resolution No. 2020-161. The Consultant has satisfactorily met all terms of the MPSA.

ANALYSIS

Development Services Staff is working with various developers on a large number of entitlement applications, most of which include the need for water pressure and capacity analyses and/or other engineering assistance. Staff requires assistance from consultants to review development projects in terms of water pressure and capacity analyses. Staff requests the extension of the term of the MPSA through December 31, 2024. The extensions of the contracts will allow staff to continue with the necessary evaluations.

Staff is working on issuing a Request for Proposals (RFP) that will include the services in this agreement. The process of issuing the RFP, awarding contracts and taking those contracts to Council for approval will take 6 to 9 months. In order for the City to continue to provide these necessary water capacity analyses in the meantime, staff is asking the City Council to determine that this Amendment No. 1 to the Agreement with Consultant is in the best interest of the City pursuant to Tracy Municipal Code Section 2.20.140(b)(6).

FISCAL IMPACT

The cost of the work performed by Consultant will be captured through developer contributions. The developer contributions include Cost Recovery Agreements, plan-check fees, and/or other fees collected by the City. It should be noted that Cost Recovery Agreements cover the costs of staff time and consultant work related to each project.

PUBLIC OUTREACH / INTEREST

Not applicable.

COORDINATION

Not applicable.

CEQA DETERMINATION

Not applicable.

STRATEGIC PLAN

This agenda item supports the City of Tracy's Quality of Life Strategic Priority, which is to provide an outstanding quality of life by enhancing the City's amenities, business mix and services, and cultivating connections to promote positive change and progress in our community.

ACTION REQUESTED OF THE CITY COUNCIL

That the City Council adopt a resolution approving Amendment No. 1 to the Master Professional Services Agreement with Blackwater Consulting Engineers, Inc. for water pressure and capacity analyses, and engineering assistance to extend the agreement through December 31, 2024, for a not-to-exceed amount of $200,000 per calendar year.

Prepared by: Veronica Child, Management Analyst II

Reviewed by: Koosun Kim, PE, City Engineer / Assistant Director of Development Services
Sara Cowell, Finance Director
Karin Schnaider, Assistant City Manager

Approved by: Midori Lichtwardt, Interim City Manager

ATTACHMENTS

Attachment A – Amendment No. 1 Blackwater
Attachment B – MPSA Blackwater

CITY OF TRACY
AMENDMENT NO. 1 TO
MASTER PROFESSIONAL SERVICES AGREEMENT WITH BLACKWATER CONSULTING ENGINEERS, INC. FOR WATER PRESSURE AND CAPACITY ANALYSES, AND ENGINEERING SERVICES

This Amendment No. 1 (**Amendment**) to the Master Professional Service Agreement is entered into between the City of Tracy, a municipal corporation (**City**), and Blackwater Consulting Engineers, Inc. a California Corporation (**Consultant**). City and Consultant are referred to individually as "**Party**" and collectively as "**Parties**."

Recitals

A. The City and Consultant entered into a Master Professional Services Agreement (**Agreement**) for Water Pressure and Capacity Analyses, and Engineering Services (**Project**) on or about September 24, 2020 pursuant to Resolution No. 2020-161.

B. The City desires to extend the term of the Agreement through December 31, 2024.

C. This Amendment is being executed pursuant to Resolution No. ____, which was adopted by the City of Tracy City Council on _____, 2023.

Now therefore, the Parties mutually agree as follows:

1. Incorporation by Reference. All capitalized terms used herein and not defined herein shall have the meanings set forth in the Agreement. Unless specifically modified by this Amendment, the Agreement shall remain unchanged and in full force and effect. By their signatures below, the Parties hereby ratify, approve, and confirm the Agreement remains in full force and effect.

2. Terms of Amendment.

A. Section 2.1 of the Agreement is hereby amended by deleting the text of Section 2.1 in its entirety and substituting in place thereof the following:

"The term of this Agreement shall begin on July 1, 2020 and end on December 31, 2024, unless terminated in accordance with Section 6."

B. Exhibit "B-1," attached hereto, shall replace and supersede Exhibit "B" of the Agreement. All references in the Agreement to "Exhibit B" shall be to "Exhibit B-1."

4. Signatures. This Amendment may be executed in any number of counterparts, each of which shall be deemed to be an original and all of which taken together shall constitute one instrument. The individuals executing this Amendment represent and warrant that they have the right, power, legal capacity and authority to enter into and to execute this Amendment. This Amendment shall inure to the benefit of and be binding upon the parties and their respective successors and assigns. Notwithstanding the foregoing, this Amendment is contingent on the approval by the City's City Council. Without such approval, the Agreement has no legal effect.

The Parties agree to the full performance of the terms set forth here.

City of Tracy

By: _____
Nancy Young
Title: Mayor
Date: _____

Attest:

By: _____
Adrianne Richardson, City Clerk

Approved as to form

By: _____
Bijal M. Patel, City Attorney

Consultant
West Yost & Associates

By: _____
Aja Verburg, P.E.
Title: Vice President
Date: 07/20/23

Federal Employer ID No. 68-0370826

By: _____
Jeff Black, P.E.
Title: President
Date: 07/20/23

Exhibit B-1

Rate Schedule

	Hourly Rate
ENGINEERING:	
PRINCIPAL	$250.00
PROJECT MANAGER	$228.00
ASSOCIATE ENGINEER	$198.00
ASSISTANT ENGINEER	$160.00
ENGINEER TECHNICIAN	$150.00
TECHNICAL STAFF:	
SENIOR CAD TECHNICIAN	$155.00
CAD TECHNICIAN	$135.00
FIELD SERVICES:	
CONSTRUCTION MANAGER	$228.00
CONSTRUCTION INSPECTOR	$184.00
ADMINISTRATION:	
ADMINISTRATION	$98.00
EXPERT WITNESS:	$325.00

DIRECT COSTS:	COST PLUS 10 PERCENT
SUBCONSULTANTS:	COST PLUS 10 PERCENT
MILEAGE:	IRS RATE

CITY OF TRACY
MASTER PROFESSIONAL SERVICES AGREEMENT WITH BLACK WATER CONSULTING ENGINEERS, INC. FOR WATER PRESSURE AND CAPACITY ANALYSES, AND ENGINEERING ASSISTANCE

This Master Professional Services Agreement (**Agreement**) is entered into between the City of Tracy, a municipal corporation (**City**), and **Black Water Consulting Engineers, Inc.** a California corporation (**Consultant**). City and Consultant are referred to individually as "Party" and collectively as "Parties."

Recitals

A. City desires to retain Consultant for water pressure and capacity analyses engineering assistance for land development projects; and

B. On July 18, 2019, the City issued a Request for Proposals (RFP) for Water Pressure and Capacity Analyses (**Project**). On August 27, 2019, Consultant submitted its proposal for the Project to the City. City has determined that Consultant possesses the skills, experience and certification required to provide the services.

C. After negotiations between the City and Consultant, the Parties have reached an agreement for the performance of services in accordance with the terms set forth in this Agreement.

D. This Agreement is being executed pursuant to Resolution No. 2020-161 approved by Tracy City Council on Sept. 1, 2020.

Now therefore, the Parties mutually agree as follows:

1. **Scope of Work.** Consultant shall perform the services generally described in Exhibit "A" attached, and incorporated by reference, as directed by written Notice to Proceed by the City's Development Services Director. The services shall be performed by, or under the direct supervision of, Consultant's Authorized Representative: Jeffrey Madsen Black, P.E.. Consultant shall not replace its Authorized Representative, nor shall Consultant replace any of the personnel listed in Exhibit "A," nor shall Consultant use or replace any subcontractor or subconsultant, without City's prior written consent. A failure to obtain the City's prior written consent for any change or replacement in personnel or subcontractor/subconsultant may result in the termination of this Agreement.

1.1 Non-Exclusive Agreement. The City reserves the right to contract with other consultants providing the same or similar scope of services described above during the term of this Agreement. The City further reserves the right to, assign work, at its sole discretion, to consultants other than Consultant based on City's budget, experience, and skills of consultants based on the City's specific needs.

2. **Time of Performance.** Time is of the essence in the performance of services under this Agreement and the timing requirements set forth shall be strictly adhered to unless otherwise modified in writing in accordance with this Agreement. Consultant shall begin performance, and shall complete all required services no later than the dates set forth in each individual Notice to Proceed. Any services for which times for performance are not specified in each individual Notice to Proceed shall be started and completed by Consultant in a reasonably prompt and timely manner based upon the circumstances and direction communicated by the City to the Consultant. Consultant shall submit all requests for time extensions to the City in writing no later than ten days after the start of the condition which purportedly

caused the delay, and not later than the date on which performance is due. City shall grant or deny such requests at its sole discretion.

2.1 Term. The term of this Agreement shall begin on July 1, 2020 and end on June 30, 2023, unless terminated in accordance with Section 6.

3. Compensation. City shall pay Consultant on a time and expense basis, at the billing rates set forth in Exhibit "B," attached and incorporated by reference for services performed under this Agreement.

3.1 Not to Exceed Amount. Consultant's total compensation under this Agreement shall not exceed $200,000 per calendar year. Consultant's billing rates shall cover all costs and expenses for Consultant's performance of this Agreement. Effective January 1, 2021, Consultant's billing rates under this Agreement may be annually increased in January of each year by the lesser of 3% or the annual increase in the Cost of Living Index – All Items, for the Sacramento Metropolitan Region. No work shall be performed by Consultant in excess of the total compensation amount provided in this section without the City's prior written approval.

3.2 Invoices. Consultant shall submit monthly invoice(s) to the City that describe the services performed, including times, dates, and names of persons performing the services.

3.2.1 If Consultant is providing services in response to a development application, separate invoice(s) must be issued for each application and each invoice shall contain the City's designated development application number.

3.2.2 Consultant's failure to submit invoice(s) in accordance with these requirements may result in the City rejecting said invoice(s) and thereby delaying payment to Consultant.

3.3 Payment. Within 30 days after the City's receipt of invoice(s), City shall make payment to the Consultant based upon the services described on the invoice(s) and approved by the City.

4. Indemnification. Consultant shall, to the fullest extent permitted by law, indemnify, defend (with independent counsel approved by the City), and hold harmless the City from and against any claims arising out of Consultant's performance or failure to comply with obligations under this Agreement, except to the extent caused by the sole, active negligence or willful misconduct of the City.

In this section, "City" means the City, its officials, officers, agents, employees and volunteers; "Consultant" means the Consultant, its employees, agents and subcontractors; "Claims" includes claims, demands, actions, losses, damages, injuries, and liability, direct or indirect (including any and all related costs and expenses) and any allegations of these; and "Arising out of" includes "pertaining to" and "relating to".

(The duty of a "design professional" to indemnify and defend the City is limited to claims that arise out of, pertain to, or relate to the negligence, recklessness or willful misconduct of the design professional, under Civ. Code § 2782.8.)

The provisions of this section survive completion of the services or the termination of this Agreement, and are not limited by the provisions of Section 5 relating to insurance.

5. Insurance. Consultant shall, throughout the duration of this Agreement, maintain insurance to cover Consultant, its agents, representatives, and employees in connection with the performance of services under this Agreement at the minimum levels set forth herein.

5.1 Commercial General Liability (with coverage at least as broad as ISO form CG 00 01 01 96) "per occurrence" coverage shall be maintained in an amount not less than $4,000,000 general aggregate and $2,000,000 per occurrence for general liability, bodily injury, personal injury, and property damage.

5.2 Automobile Liability (with coverage at least as broad as ISO form CA 00 01 07 97, for "any auto") "claims made" coverage shall be maintained in an amount not less than $1,000,000 per accident for bodily injury and property damage.

5.3 Workers' Compensation coverage shall be maintained as required by the State of California.

5.4 Professional Liability "claims made" coverage shall be maintained to cover damages that may be the result of errors, omissions, or negligent acts of Consultant in an amount not less than $1,000,000 per claim.

5.5 Endorsements. Consultant shall obtain endorsements to the automobile and commercial general liability insurance policies with the following provisions:

5.5.1 The City (including its elected officials, officers, employees, agents, and volunteers) shall be named as an additional "insured."

5.5.2 For any claims related to this Agreement, Consultant's coverage shall be primary insurance with respect to the City. Any insurance maintained by the City shall be excess of the Consultant's insurance and shall not contribute with it.

5.6 Notice of Cancellation. Consultant shall notify the City if the policy is canceled before the expiration date. For the purpose of this notice requirement, any material change in the policy prior to the expiration shall be considered a cancellation. Consultant shall immediately obtain a replacement policy.

5.7 Authorized Insurers. All insurance companies providing coverage to Consultant shall be insurance organizations authorized by the Insurance Commissioner of the State of California to transact the business of insurance in the State of California.

5.8 Insurance Certificate. Consultant shall provide evidence of compliance with the insurance requirements listed above by providing a certificate of insurance and endorsements, in a form satisfactory to the City, before the City signs this Agreement.

5.9 Substitute Certificates. Consultant shall provide a substitute certificate of insurance no later than 30 days prior to the policy expiration date of any insurance policy required by this Agreement.

5.10 Consultant's Obligation. Maintenance of insurance by the Consultant as specified in this Agreement shall in no way be interpreted as relieving the Consultant of any responsibility whatsoever (including indemnity obligations under this Agreement), and the Consultant may carry, at its own expense, such additional insurance as it deems necessary. Failure to provide or maintain any insurance policies or endorsements required herein may result in the City terminating this Agreement.

6. Termination. The City may terminate this Agreement by giving ten days' written notice to Consultant. Upon termination, Consultant shall give the City all original documents, including preliminary drafts and supporting documents, prepared by Consultant for this Agreement. The City shall pay Consultant for all services satisfactorily performed in accordance with this Agreement, up to the date notice is given.

7. Dispute Resolution. If any dispute arises between the City and Consultant that cannot be settled after engaging in good faith negotiations, City and Consultant agree to resolve the dispute in accordance with the following:

7.1 Each Party shall designate a senior management or executive level representative to negotiate the dispute;

7.2 The representatives shall attempt, through good faith negotiations, to resolve the dispute by any means within their authority.

7.3 If the issue remains unresolved after fifteen (15) days of good faith negotiations, the Parties shall attempt to resolve the disagreement by negotiations between legal counsel. If the aforementioned process fails, the Parties shall resolve any remaining disputes through mediation to expedite the resolution of the dispute.

7.4 The mediation process shall provide for the selection within fifteen (15) days by both Parties of a disinterested third person as mediator, shall be commenced within thirty (30) days and shall be concluded within fifteen (15) days from the commencement of the mediation.

7.5 The Parties shall equally bear the costs of any third party in any alternative dispute resolution process.

7.6 The dispute resolution process is a material condition to this Agreement and must be exhausted prior to either Party initiating legal action. This dispute resolution process is not intended to nor shall be construed to change the time periods for filing a claim or action specified by Government Code §§ 900 et seq.

8. Ownership of Work. All original documents prepared by Consultant for this Agreement, whether complete or in progress, are the property of the City, and shall be given to the City at the completion of Consultant's services, or upon demand from the City. No such documents shall be revealed or made available by Consultant to any third party without the City's prior written consent.

9. Independent Contractor Status. Consultant is an independent contractor and is solely responsible for the acts of its employees or agents, including any negligent acts or omissions. Consultant is not City's employee and Consultant shall have no authority, express or implied, to act on behalf of the City as an agent, or to bind the City to any obligation, unless the City provides prior written authorization. Consultant is free to work for other entities while under contract with the City. Consultant, and its agents or employees, are not entitled to City benefits.

10. Conflicts of Interest. Consultant (including its employees, agents, and subconsultants) shall not maintain or acquire any direct or indirect interest that conflicts with the performance of this Agreement. If Consultant maintains or acquires such a conflicting interest, the City may terminate any contract (including this Agreement) involving Consultant's conflicting interest.

11. Rebates, Kickbacks, or Other Unlawful Consideration. Consultant warrants that this Agreement was not obtained or secured through rebates, kickbacks, or other unlawful consideration either promised or paid to any City official or employee. For breach of this warranty, City shall have the right, in its sole discretion, to terminate this Agreement without liability; to pay only for the value of the work actually performed; or to deduct from the contract price; or otherwise recover the full amount of such rebate, kickback, or other unlawful consideration.

12. Notices. All notices, demands, or other communications which this Agreement contemplates or authorizes shall be in writing and shall be personally delivered or mailed to the other party to the addresses listed below. Communications shall be deemed to have been given and received on the first to occur of: (1) actual receipt at the address designated below, or (2) three working days after the deposit in the United States Mail of registered or certified mail, sent to the address designated below.

To City:
Development Services Department
Attn: City Engineer
333 Civic Center Plaza
Tracy, CA 95337

With a copy to:
City Attorney
333 Civic Center Plaza
Tracy, CA 95376

To Consultant:
Black Water Consulting Engineers, INC.
Attn: Jeffrey Madsen Black, P.E.
602 Lyell Drive
Modesto, CA 95356

13. Miscellaneous.

13.1 Standard of Care. Unless otherwise specified in this Agreement, the standard of care applicable to Consultant's services will be the degree of skill and diligence ordinarily used by reputable professionals performing in the same or similar time and locality, and under the same or similar circumstances.

13.2 Amendments. This Agreement may not be modified orally or in any manner other than by an agreement in writing signed by both Parties.

13.3 Waivers. Waiver of a breach or default under this Agreement shall not constitute a continuing waiver or a waiver of a subsequent breach of the same or any other provision of this Agreement.

13.4 Assignment and Delegation. Consultant may not assign, transfer or delegate this Agreement or any portion of it without the City's written consent. Any attempt to do so will be void. City's consent to one assignment shall not be deemed to be a consent to any subsequent assignment.

13.5 Jurisdiction and Venue. The interpretation, validity, and enforcement of the Agreement shall be governed by and construed under the laws of the State of California. Any suit, claim, or legal proceeding of any kind related to this Agreement shall be filed and heard in a court of competent jurisdiction in the County of San Joaquin.

13.6 Compliance with the Law. Consultant shall comply with all applicable local, state, and federal laws, whether or not those laws are expressly stated in this Agreement.

13.6.1 Prevailing Wage Laws. Consultant is aware of the requirements of California Labor Code Section 1720, et seq., and 1770, et seq., as well as California Code of Regulations, Title 8, Section 16000, et seq., ("Prevailing Wage Laws"), which require the payment of prevailing wage rates; employment of apprentices (§ 1777.5), certified payroll records (§1776), hours of labor (§1813 and §1815), debarment of contractors and subcontractors (§1777.1) and the performance of other requirements on "public works" and "maintenance" projects. If the services being performed under this Agreement are part of a "public works" or "maintenance" project, as defined in the Prevailing Wage Laws, and if the total compensation is $1,000 or more, Consultant agrees to fully comply with such Prevailing Wage Laws. These prevailing rates are on file with the City and are available online at http://www.dir.ca.gov/DLSR. Consultant shall defend, indemnify and hold the City, its officials, officers, employees and agents, harmless from any and all claims, costs, penalties, or interests arising out of any failure or alleged failure to comply with the Prevailing Wage Laws.

13.6.2 Non-discrimination. Consultant represents and warrants that it is an equal opportunity employer and it shall not discriminate against any subconsultant, employee or applicant for employment because of race, religion, color, national origin, handicap, ancestry, sex or age. Consultant shall also comply with all applicable anti-discrimination federal and state laws, including but not limited to, the California Fair Employment and Housing Act (Gov. Code 12990 (a-f) et seq.).

13.7 Business Entity Status. Consultant is responsible for filing all required documents and/or forms with the California Secretary of State and meeting all requirements of the Franchise Tax Board, to the extent such requirements apply to Consultant. By entering into this Agreement, Consultant represents that it is not a suspended corporation. If Consultant is a suspended corporation at the time it enters this Agreement, City may take steps to have this Agreement declared voidable.

13.8 Business License. Before the City signs this Agreement, Consultant shall obtain a City of Tracy Business License. Consultant shall maintain an active City of Tracy Business License during the term of this Agreement.

13.9 Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the Parties hereto and their respective successors and assigns.

13.10 Construction of Agreement. Each Party hereto has had an equivalent opportunity to participate in the drafting of this Agreement and/or to consult with legal counsel. Therefore, the usual construction of an agreement against the drafting Party shall not apply hereto.

13.11 Severability. If a term of this Agreement is held invalid by a court of competent jurisdiction, the Agreement shall be construed as not containing that term, and the remainder of this Agreement shall remain in effect.

13.12 Controlling Provisions. In the case of any conflict between the terms of this Agreement and the Exhibits hereto, and Consultant's proposal (if any), the Agreement shall control. In the case of any conflict between the Exhibits hereto and the Consultant's proposal (if any), the Exhibits shall control.

13.13 Entire Agreement. This Agreement and the attached Exhibits comprise the entire integrated understanding between the Parties concerning the services to be performed. This Agreement supersedes all prior negotiations, representations or agreements. All exhibits attached hereto are incorporated by reference herein.

14. Signatures. The individuals executing this Agreement on behalf of Consultant represent and warrant that they have the right, power, legal capacity and authority to enter into and to execute this Agreement on behalf of Consultant.

[SIGNATURES ON FOLLOWING PAGE]

The Parties agree to the full performance of the terms set forth here.

City of Tracy

By: Robert Rickman
Title: Mayor
Date: 9-24-2020

Attest:

Adrianne Richardson, City Clerk

Approved as to form:

for Leticia M. Ramirez, City Attorney

Consultant
Black Water Consulting Engineers, Inc.

By: Jeffrey Madsen Black, P.E.
Title: Chief Executive
Date: 7/28/2020

Federal Employer Tax ID No.
46-1504431

_ By: Jeffrey Madsen Black, P.E.
Title: Chief Financial Officer
Date: 7/28/2020

Exhibits:

A Scope of Work, including personnel and time of performance (See Agreement sections 1 and 2.)
B Compensation (See Agreement section 3.)

EXHIBIT A
SCOPE OF SERVICES

MASTER PROFESSIONAL SERVICES AGREEMENT WITH BLACK WATER CONSULTING ENGINEERS, INC.. FOR WATER PRESSURE AND CAPACITY ANALYSES, AND ENGINEERING ASSISTANCE

Consultant shall provide Professional Services for the following:

1 Conduct/perform water pressure and capacity studies, in connection with private land development projects within City limits and its sphere of influence, of off-site water plans, assess a development's water infrastructure impacts on the City's water system, assure adequate pressure and flow for domestic use and fire safety. The Consultant may be tasked to perform the following professional services, among others:

a. Conduct/perform water pressure and capacity modeling and calculations. The studies shall conform with the Water System Master Plan, any edition, its Updates, associated Specific Plan, if any, the Urban Water Management Plan, and City of Tracy Design Documents.
b. Conduct/perform water supplies studies.
c. Conduct/perform the feasibility of a Project's ability to use recycled water infrastructure.

2 Peer-review water pressure and capacity studies including review for technical accuracy of data and analyses methods and proposed mitigations provided by private land development projects against the items cited below. The Consultant may be tasked to perform the following professional services, among others:

a. Review water pressure and capacity modeling and calculations. Confirm that the Developer's studies conforms with the Water System Master Plan, any edition, its Updates, associated Specific Plan, if any, the Urban Water Management Plan, and City of Tracy Design Documents.
b. Review water supplies studies.
c. Review the feasibility of a Project's ability to use recycled water infrastructure.

3 In both conducted/performed and peer-reviewed studies, Consultant shall identify potential trigger points requiring construction of off-site Water System Master Plan ("Program") capital improvements within the pressure zone and the City and determine project's fair share of such capital improvements.

4 In both conducted/performed and peer-reviewed studies, Consultant shall identify and recommend Project on-site water pipeline infrastructure sizing and alignment modifications and/or other off-site system modifications to mitigate any Project design deficiencies identified above.

5 To properly document the findings of the Project's water pressure and capacity studies, the Consultant will deliver a Technical Memorandum to the CITY summarizing the project, the methodology, document any recommended system modifications, identify potential impacts on drainage infrastructure, and recommend mitigations of those impacts.

5 Consultant may have to attend meetings, Public Hearings, Planning Commission, and/or City Council meetings.

6 Plan-check developer's improvement plans to confirm compliance with the water pressure and capacity study and required mitigations. Review project plans and specifications for technical accuracy and conformance with the City of Tracy Design Standards, Standard Plans, and Standard Specifications.

7 If requested, Consultant may be requested to inspect during construction and after construction.

8 Other tasks as assigned.

Deadlines:
Responses to Request for Quotes with delivery schedule: seven (7) calendar days
Submittal of Deliverables: By the delivery date on the Consultant provided delivery schedule. If needed, Consultant will be given a seven (7) calendar day grace period.

Staff Members:
Jeffrey Madsen Black, P.E.
Aja Verburg, P.E.
Bao Cha, E.I.T.
Tyler Lee, E.I.T
Christiana Geidd, E.I.T
Bryce Bondi, E.I.T
Stacy Mason
Krystel Lozares

Exhibit B

BLACKWATER
CONSULTING ENGINEERS, INC.

2020 Hourly Rate Schedule

	Hourly Rate
ENGINEERING:	
PRINCIPAL/PROJECT MANAGER	$189.00
SENIOR ENGINEER	$172.00
ASSISTANT ENGINEER	$135.00
ENGINEER TECHNICIAN	$115.00
TECHNICAL STAFF:	
SENIOR DESIGNER	$115.00
DESIGNER	$105.00
CAD TECHNICIAN	$95.00
FIELD SERVICES:	
CONSTRUCTION MANAGER	$172.00
CONSTRUCTION INSPECTOR	$120.00
ADMINISTRATION:	
OFFICE / CLERICAL	$65.00
EXPERT WITNESS:	$275.00

DIRECT COSTS:	COST PLUS 10 PERCENT
SUBCONSULTANTS:	COST PLUS 10 PERCENT
MILEAGE:	IRS RATE

The above rate schedule is effective January 1, 2020 and is subject to adjustment January 1, 2021.

602 LYELL DRIVE, MODESTO, CA 95356
p: (209) 322-1820 f: (209) 222-4088
www.blackwater-eng.com

APPROVED AS TO FORM AND LEGALITY

_____
CITY ATTORNEY'S OFFICE

TRACY CITY COUNCIL

RESOLUTION 2023-_____

ADOPTING A RESOLUTION APPROVING AMENDMENT NO. 1 TO THE MASTER PROFESSIONAL SERVICES AGREEMENT WITH BLACKWATER CONSULTING ENGINEERS, INC. FOR WATER PRESSURE AND CAPACITY ANALYSES AND ENGINEERING ASSISTANCE TO EXTEND THE AGREEMENT THROUGH DECEMBER 31, 2024, FOR A NOT-TO-EXCEED AMOUNT OF $200,000 PER CALENDAR YEAR

WHEREAS, the City issued a Request for Proposals (RFP) for water pressure and capacity analyses on July 18, 2019; and

WHEREAS, the City entered into a Master Professional Services Agreement (MPSA) with Blackwater Consulting Engineers, Inc. (Consultant) on September 1, 2020, under Resolution No. 2020-161; and

WHEREAS, Consultant has satisfactorily met all terms of the MPSA; and

WHEREAS, Development Services Staff is working with various developers on a large number of entitlement applications, most of which include the need for water pressure and capacity analyses; and

WHEREAS, Staff requests the extension of the term of the MPSA through December 31, 2024; and

WHEREAS, Staff is working on issuing a Request for Proposals (RFP) that will include the services in this agreement. The process of issuing the RFP, awarding contracts and taking those contracts to Council for approval will take 6 to 9 months. In order for the City to continue to provide these necessary water capacity analyses in the meantime, staff is asking the City Council to determine that this Amendment No. 1 to the Agreement with Consultant is in the best interest of the City pursuant to Tracy Municipal Code Section 2.20.140(b)(6); now, therefore, be it

RESOLVED: That the City Council of the City of Tracy hereby adopts a resolution approving Amendment No. 1 to the Master Professional Services Agreement with Blackwater Consulting Engineers, Inc. for water pressure and capacity analyses, and engineering assistance to extend the agreement through December 31, 2024, for a not-to-exceed amount of $200,000 per calendar year.

* * * * * * * * * * * * * *

The foregoing Resolution 2023-_____ was adopted by the Tracy City Council on the 5th day of September 2023 by the following vote:

AYES: COUNCIL MEMBERS:
NOES: COUNCIL MEMBERS:
ABSENT: COUNCIL MEMBERS:
ABSENTION: COUNCIL MEMBERS:

_____
NANCY D. YOUNG
Mayor of the City of Tracy, California

ATTEST:_____
ADRIANNE RICHARDSON
City Clerk and Clerk of the Council of the
City of Tracy, California

September 5, 2023

Agenda Item 1.H

RECOMMENDATION

Staff recommends that the City Council (1) approve a new not-to-exceed project budget of $175,750 for the Annual Water Valve Replacement Project, CIP 75168, and (2) authorize the City Manager to approve change orders up to the contingency amount of $66,000, if needed.

EXECUTIVE SUMMARY

City staff is requesting that the City Council approve an increase in project budget to pay for additional work caused by unforeseen circumstances identified during construction. The additional funding will increase the not-to-exceed project budget from $99,750 to $175,750. City staff also requests the City Council to authorize the City Manager to approve change orders up to a new contingency amount of $66,000, if needed.

BACKGROUND AND LEGISLATIVE HISTORY

CIP 75168 for the Annual Water Valve Replacement Project (Project) was established by Resolution No. 2022-085 as part of the FY 2022-2023 Budget with a project budget of $100,000. On April 18, 2023, City Council approved, by Resolution No. 2023-063, awarding a construction contract to Tracy Grading & Paving, Inc. of Tracy, California, in the amount of $79,800 with a contingency amount of $7,980 for change orders and a total project cost of $99,750.

The Project is under construction to replace eight (8) aging water valves in Golden Springs Drive between Kavanagh Avenue and Camellia Drive, and one fire hydrant valve in Atlanta Drive at Kavanagh Avenue. The Project includes restoration of impacted pavement and striping upon completion of the valve replacement work.

Water valve locations were selected by the City's Operations Division based on the greatest needs.

Due to unforeseen site conditions discovered during construction, City staff estimates the cost to complete the additional repairs will be approximately $55,000. The requested amount is based upon information provided by the contractor, visual inspection of the uncovered sites by staff, and estimations calculated through staff review. To pay for these repairs, City staff recommends the project budget be increased to $175,750.

ANALYSIS

The total estimated cost of this change order, if approved, is as follows:

Original Construction Contract Amount	$ 79,800
Construction Management (10%)	$ 7,980
Design Support During Construction (5%)	$ 3,990
Construction Contingency - Original Contract (10%)	$ 7,980
Total Approved Budget	$ 99,750
Estimated Change Order (CO1)	$ 55,000
Estimated Construction Management (9%)	$ 5,000
Estimated Design Support During Construction (9%)	$ 5,000
Estimated Construction Contingency (20%)	$ 11,000
Estimated Project Cost Increase:	$ 76,000
Total Revised Project Cost:	$175,750

The Tracy Municipal Code Section 2.20.090(b) authorizes the City Manager to approve change orders up to the approved contingency amount when awarding the bid. The value of the estimated change order exceeds the approved standard 10% contingency, and an additional contingency approval amount is required in the amount of $66,000 for this Project.

FISCAL IMPACT

The total estimated project cost is $175,750 and will be funded by CIP 75168, Annual Water Valve Replacement Project. CIP 75168 has a current available budget of $200,00.

	FUND	BUDGET	EXPENSES	BALANCE
Water Fund	513	$ 200,000	$ 7,303	$ 192,697
CURRENT BUDGET		$ 200,000	$ 7,303	$ 192,697

PUBLIC OUTREACH / INTEREST

Residents adjacent to the project have and will continue to be notified by the contractor of the construction schedule and any service interruptions.

COORDINATION

Engineering Staff coordinated with the Operations Division, as well as Tracy Unified School District's Jacobson Elementary School.

CEQA DETERMINATION

The project is categorically exempt from CEQA pursuant to CEQA Guidelines Section 15301, which pertains to the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of an existing facility.

STRATEGIC PLAN

This agenda item supports the City of Tracy's Quality of Life Strategic Priority.

ACTION REQUESTED OF THE CITY COUNCIL

That City Council, by resolution, (1) approve a new not-to-exceed project budget of $175,750 for the Annual Water Valve Replacement Project, CIP 75168, and (2) authorize the City Manager to approve change orders up to the contingency amount of $66,000, if needed.

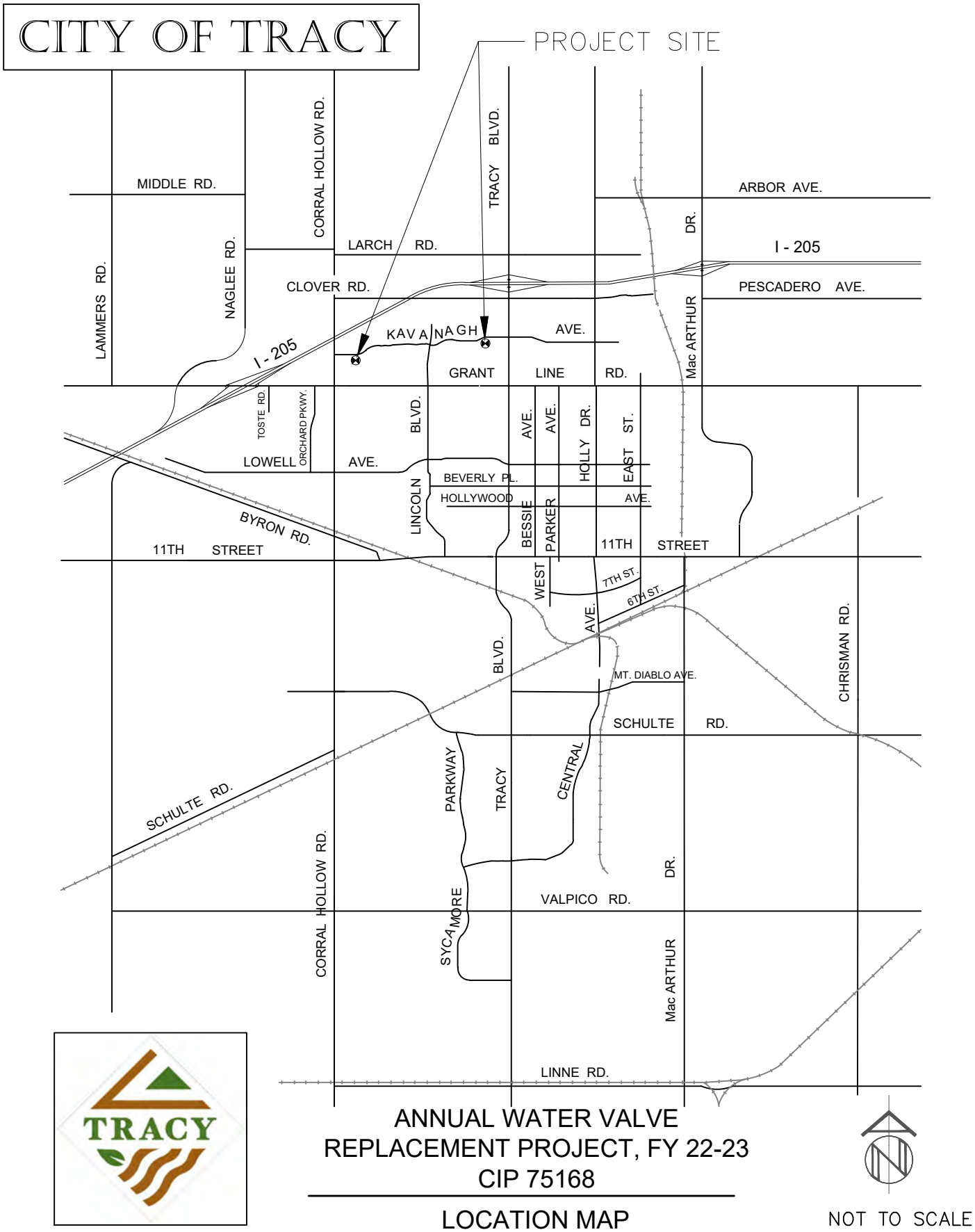
Prepared by: D'Evelyn Spekner, Associate Engineer
Sharat Bandugula, PE, Senior Civil Engineer

Reviewed by: Koosun Kim, PE, City Engineer / Assistant Director of Development Services
Sara Cowell, Finance Director
Karin Schnaider, Assistant City Manager

Approved by: Midori Lichtwardt, Interim City Manager

ATTACHMENTS

Attachment A – Location Map


CITY OF TRACY
PROJECT SITE
MIDDLE RD.
CORRAL HOLLOW RD.
TRACY BLVD.
ARBOR AVE.
LARCH RD.
I - 205
CLOVER RD.
PESCADERO AVE.
LAMMERS RD.
NAGLEE RD.
KAVANAGH AVE.
GRANT LINE RD.
Mac ARTHUR DR.
TOSTE RD.
ORCHARD PKWY.
LOWELL AVE.
BEVERLY PL.
HOLLYWOOD AVE.
LINCOLN BLVD.
BESSIE AVE.
PARKER AVE.
HOLLY DR.
EAST ST.
BYRON RD.
11TH STREET
WEST 7TH ST.
6TH ST.
MT. DIABLO AVE.
CHRISMAN RD.
SCHULTE RD.
PARKWAY
TRACY BLVD.
CENTRAL DR.
VALPICO RD.
SYCAMORE
LINNE RD.
TRACY
ANNUAL WATER VALVE
REPLACEMENT PROJECT, FY 22-23
CIP 75168
LOCATION MAP
NOT TO SCALE

APPROVED AS TO FORM AND LEGALITY

_____
CITY ATTORNEY'S OFFICE

TRACY CITY COUNCIL

RESOLUTION 2023-_____

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(1) APPROVING A NEW NOT-TO-EXCEED PROJECT BUDGET OF $175,750 FOR THE ANNUAL WATER VALVE REPLACEMENT PROJECT, CIP 75168, AND (2) AUTHORIZING THE CITY MANAGER TO APPROVE CHANGE ORDERS UP TO THE CONTINGENCY AMOUNT OF $66,000, IF NEEDED

WHEREAS, the Annual Water Valve Replacement Project, CIP 75168, is an approved project; and

WHEREAS, the Tracy Municipal Code Section 2.20.090(b) authorizes the City Manager to approve change orders up to the contingency amount approved by City Council; and

WHEREAS, due to unforeseen site conditions discovered during construction, the recommended contingency amount for this project is now $66,000; and

WHEREAS, the total estimated project cost is now $175,750; and

WHEREAS, the Annual Water Valve Replacement Project, CIP 75168, has a currently available budget of $200,000; now, therefore, be it

RESOLVED: That the City Council of the City of Tracy hereby approves the Annual Water Valve Replacement Project, CIP 75168, with a new not-to-exceed project budget of $175,750 and authorizes the City Manager to approve change orders up to the contingency amount of $66,000, if needed.

* * * * * * * * * * * * * *

The foregoing Resolution 2023-_____ was adopted by the Tracy City Council on the 5th day of September 2023 by the following vote:

AYES: COUNCIL MEMBERS:
NOES: COUNCIL MEMBERS:
ABSENT: COUNCIL MEMBERS:
ABSTENTION: COUNCIL MEMBERS:

_____
NANCY D. YOUNG
Mayor of the City of Tracy, California

ATTEST:_____
ADRIANNE RICHARDSON
City Clerk and Clerk of the Council of the
City of Tracy, California

September 5, 2023

Agenda Item 1.I

RECOMMENDATION

Staff recommends that the City Council adopt a list of proposed projects for Fiscal Year 2023-2024 funded by SB1: The Road Repair and Accountability Act of 2017.

EXECUTIVE SUMMARY

City staff is requesting that the City Council adopt a list of proposed projects for Fiscal Year 2023-2024 funded by Senate Bill 1 (SB 1): The Road Repair and Accountability Act of 2017. Once adopted, the list will be submitted to the California Transportation Commission (CTC) for anticipated funding of $2,290,805. This amount is based on revenues that the City anticipates receiving from the Road Maintenance and Rehabilitation Account (RMRA) as part of SB 1.

BACKGROUND AND LEGISLATIVE HISTORY

The Road Repair and Accountability Act of 2017 (Act) is a significant investment in California's transportation system. The Act was passed by the California Legislature and signed into law by the Governor in April of 2017 to address the significant multi-modal transportation funding shortfalls statewide. SB 1 includes accountability and transparency provisions that will ensure the residents are aware of the projects proposed for funding and which projects have been completed each fiscal year.

The Act increased per gallon fuel excise taxes, diesel fuel sales taxes, and vehicle registration fees. A portion of this new revenue is allocated to the Road Maintenance and Rehabilitation Account (RMRA). Pursuant to Streets and Highways Code Section 2030(b), RMRA local streets and roads allocations must be used for projects "that include, but are not limited to," the following:

1. Road maintenance and rehabilitation
2. Safety projects
3. Railroad grade separations
4. Traffic control devices
5. Complete street components

Attachment A shows the RMRA Projections for the City for FY 22-23 & FY 23-24 from the website CaliforniaCityFinance.com, the California Local Government Finance Almanac. According to the projections, City will receive $2,290,805 for FY 23-24 from the RMRA.

In order to receive said funds from the CTC, the City of Tracy must adopt, by resolution, a list of projects proposed to receive fiscal year funding from the RMRA, which must include a description and the location of each proposed project, an estimated project start date, an estimated project completion date, and the estimated useful life of the improvement. The resolution is then submitted to CTC before the deadline of September 30th, 2023. This is the seventh year in which the City of Tracy is receiving SB 1 funding. The funding will enable the City of Tracy to continue essential road maintenance and rehabilitation projects, safety improvements, repairing and replacing aging bridges, and increasing access and mobility options for the traveling public that would not have been possible without the funding.

Pursuant to California Streets and Highway Code (SHC) Section 2034(a)(1), the project list shall not limit the flexibility of an eligible city or county to fund projects in accordance with local needs and priorities, so long as the projects are consistent with SHC Section 2030(b). After submittal of the project list to the CTC, in the event a city or county elects to make changes to the project list pursuant to the statutory provision noted above, formal notification of the CTC is not required. However, standard reporting forms will provide an opportunity for jurisdictions to annually communicate such changes to the CTC as part of the Annual Expenditure Reporting process.

ANALYSIS

On May 2, 2023, staff presented the PMP (Pavement Management Program) Project Prioritization Workshop, an overview of the proposed pavement projects for the next few fiscal years, to City Council. The locations were selected based on the City's Pavement Management System, coordination with the Operations Division of Operations and Utilities Department, Engineering staff's visual inspection, planned transportation projects, public comment review, and available funds. The locations selected for SB1 project list in this staff report were part of the locations presented at the PMP Workshop for Fiscal Year 2023-24. The other locations presented in the PMP workshop for FY 2023-24 will have other funding sources, namely General Fund, Measure K, Gas Tax, and RSTP grants and/or were accommodated in the SB1 project list for FY 2022-23.

Attachment B includes the proposed project List which will utilize the SB1 funds for Fiscal Year 2023-24.

FISCAL IMPACT

Adoption of this Resolution will allow the City to receive SB1 funding estimated by the State of California to be $2,290,805 for Fiscal Year 2023-24. Funds will be allocated to Capital Improvement Project (CIP) 73193, FY2023-24 Pavement Rehabilitation. The City can carry over unexpended SB 1 RMRA funds to subsequent fiscal years.

STRATEGIC PLAN

This agenda item supports the City of Tracy's Quality of Life Strategic Priority and specifically implements the following goal:

Goal 1: Advance green and roadway infrastructure projects that improve connectivity, including bike lanes.

ACTION REQUESTED OF THE CITY COUNCIL

Staff recommends that the City Council by resolution, adopt the proposed list of projects for Fiscal Year 2023-2024 funded by SB 1: The Road Repair and Accountability Act of 2017.

Prepared by: Anju Pillai, PE, Senior Civil Engineer

Reviewed by: Koosun Kim, PE, City Engineer / Assistant Development Services Director
Sara Cowell, Finance Director
Karin Schnaider, Assistant City Manager

Approved by: Midori Lichtwardt, Interim City Manager

ATTACHMENTS

Attachment A – CaliforniaCityFinance.com RMRA Projections for FY 22-23 and FY 23-24
Attachment B – Proposed Project List for FY 2023-2024 to be funded by SB 1
Attachment C – SB 1 FY 2023-24 Location Map

Local Streets and Roads - Projected Revenues

Based on State Dept of Finance statewide Estimated May 2023

	2022-23			2023-24		
	Hwy Users Tax Account	Road Mntnc Rehab Acct	TOTAL	Hwy Users Tax Account	Road Mntnc Rehab Acct	TOTAL
SAN DIEGO COUNTY						
CARLSBAD	2,877,707	2,463,686	5,341,393	3,154,032	2,800,806	5,954,838
CHULA VISTA	6,870,446	5,899,651	12,770,097	7,532,144	6,706,936	14,239,081
CORONADO	593,800	502,563	1,096,363	650,167	571,332	1,221,499
DEL MAR	103,414	84,002	187,416	112,836	95,497	208,332
EL CAJON	2,644,533	2,263,027	4,907,560	2,898,352	2,572,690	5,471,043
ENCINITAS	1,535,956	1,311,188	2,847,143	1,683,017	1,490,605	3,173,622
ESCONDIDO	3,751,453	3,215,591	6,967,044	4,112,111	3,655,599	7,767,710
IMPERIAL BEACH	667,373	565,016	1,232,389	730,744	642,331	1,373,075
LA MESA	1,510,345	1,289,148	2,799,493	1,654,934	1,465,550	3,120,484
LEMON GROVE	687,361	582,217	1,269,578	752,662	661,885	1,414,547
NATIONAL CITY	1,534,866	1,310,250	2,845,116	1,681,822	1,489,539	3,171,361
OCEANSIDE	4,301,000	3,688,505	7,989,505	4,714,699	4,193,225	8,907,924
POWAY	1,218,504	1,039,294	2,257,799	1,335,070	1,181,507	2,516,578
SAN DIEGO	34,216,908	29,424,145	63,641,053	37,517,089	33,450,427	70,967,516
SAN MARCOS	2,343,495	2,006,118	4,349,613	2,568,499	2,280,627	4,849,126
SANTEE	1,482,083	1,264,828	2,746,911	1,623,945	1,437,902	3,061,847
SOLANA BEACH	327,244	274,899	602,142	358,076	312,515	670,591
VISTA	2,498,893	2,137,695	4,636,588	2,738,654	2,430,209	5,168,863
County of San Diego	66,723,712	50,828,912	117,552,624	72,952,772	57,784,136	130,736,909
Total Cities & County: San Diego	135,889,092	110,150,735	246,039,827	148,771,625	125,223,320	273,994,945
SAN FRANCISCO COUNTY						
SAN FRANCISCO - City Allocation	20,263,049	18,628,498	38,891,547	22,242,845	21,177,547	43,420,393
SAN FRANCISCO - County Allocation	10,976,856	9,644,252	20,621,108	12,029,355	10,963,933	22,993,288
Total San Francisco	31,239,905	28,272,750	59,512,655	34,272,201	32,141,480	66,413,680
SAN JOAQUIN COUNTY						
ESCALON	188,082	158,562	346,644	205,635	180,259	385,894
LATHROP	774,311	667,818	1,442,129	848,239	759,199	1,607,438
LODI	1,634,557	1,418,935	3,053,491	1,791,634	1,613,096	3,404,730
MANTECA	2,128,983	1,851,393	3,980,376	2,333,934	2,104,730	4,438,664
RIPON	398,195	340,591	738,786	435,899	387,196	823,095
STOCKTON	7,897,159	6,894,440	14,791,599	8,660,379	7,837,848	16,498,227
TRACY	2,316,114	2,015,070	4,331,184	2,539,184	2,290,805	4,829,988
County of San Joaquin	18,342,254	15,574,994	33,917,248	20,090,666	17,706,214	37,796,880
Total Cities & County: San Joaquin	33,679,655	28,921,803	62,601,458	36,905,570	32,879,347	69,784,917

ATTACHMENT B

Proposed Project List for FY 2023-2024 to be Funded by SB 1

Newly Proposed Projects:

Project Title	Project Description	Approximate Project Location	Estimated Project Useful Life	Estimated Project Start Date	Estimated Project Completion Date
Pavement Rehabilitation FY 23-24 CIP 73193	Paving rehab/repair of about 7.0 lane miles of streets.	Tracy Blvd (Lowell Avenue to Grant Line Road) Spot Patching at Corral Hollow Road (11th Street to Parkside Drive) MacArthur Drive (11th Street to Grant Line Road)	10-15 years	September 2023	April 2024

Attachment C

FY2023-24

VON SOSTEN RD

GRANT LINE RD

ELEVENTH ST

SAN JOAQUIN
COUNTY LINE

HANSEN RD

LAMMERS RD

CORRAL HOLLOW RD

TRACY BL

MACARTHUR DR

CHRISMAN RD

BANTA RD

SCHULTE RD

SCHULTE RD

VALPICO RD

TRACY BL

SCALE: 1" = 5000'

TRACY

CITY OF TRACY

PAVEMENT REHABILITATION FY2023-24:

1. TRACY BLVD (FROM LOWELL AVENUE TO GRANT LINE ROAD

SPOT PATCHING:

2. CORRAL HOLLOW ROAD (FROM 11th STREET TO PARKSIDE DRIVE)
3. MACARTHUR DRIVE (FROM 11 th STREET TO GRANT LINE ROAD)

APPROVED AS TO FORM AND LEGALITY

_____
CITY ATTORNEY'S OFFICE

TRACY CITY COUNCIL

RESOLUTION 2023-_____

ADOPTING A LIST OF PROPOSED PROJECTS FOR FISCAL YEAR 2023-2024 FUNDED BY SB1: THE ROAD REPAIR AND ACCOUNTABILITY ACT OF 2017

WHEREAS, Senate Bill 1 (SB 1), the Road Repair and Accountability Act of 2017 (Chapter 5, Statutes of 2017), was passed by the Legislature and Signed into law by the Governor in April 2017 to address the significant multi-modal transportation funding shortfalls statewide; and

WHEREAS, SB 1 includes accountability and transparency provisions that will ensure the residents of Tracy are aware of the projects proposed for funding in our community and which projects have been completed each fiscal year; and

WHEREAS, the City of Tracy must adopt by resolution a list of projects proposed to receive fiscal year funding from the Road Maintenance and Rehabilitation Account (RMRA), created by SB 1, which must include a description and the location of each proposed project, a proposed schedule for the project's completion, and the estimated useful life of the improvement; and

WHEREAS, the City of Tracy will receive an estimated $2,290,805 in RMRA funding in Fiscal Year 2023-24 from SB 1; and

WHEREAS, this is the seventh year in which the City of Tracy is receiving SB 1 funding and will enable the City of Tracy to continue essential road maintenance and rehabilitation projects, safety improvements, repairing and replacing aging bridges, and increasing access and mobility options for the traveling public that would not have otherwise been possible without SB 1; and

WHEREAS, the City of Tracy has undergone a robust public process to ensure public input into our community's transportation priorities/the project list; and

WHEREAS, the City of Tracy used a Pavement Management System coupled with planned transportation projects and Staff's review to develop the SB 1 project list to ensure revenues are being used on the most high-priority and cost-effective projects that also meet the community's priorities for transportation investment; and

WHEREAS, the funding from SB 1 will help the City of Tracy maintain and rehabilitate 4 streets/roads throughout the City this year; and

WHEREAS, the 2021 California Statewide Local Streets and Roads Needs Assessment found that the City of Tracy's streets and roads are in a "low risk" condition and this revenue will

help us increase the overall quality of our road system and over the next decade will bring our streets and roads into a “good” condition; and

WHEREAS, the SB 1 project list and overall investment in our local streets and roads infrastructure with a focus on basic maintenance and safety, investing in complete streets infrastructure, and using cutting-edge technology, materials and practices, will have significant positive co-benefits statewide; now therefore, be it

RESOLVED: That the City Council of the City of Tracy hereby declares the following:

1. The foregoing recitals are true and correct.

2. The following list of newly proposed projects will be funded in-part or solely with Fiscal Year 2023-24 Road Maintenance and Rehabilitation Account revenues:

Project Title	Project Description	Approximate Project Location	Estimated Project Useful Life	Estimated Project Start Date	Estimated Project Completion Date
Pavement Rehabilitation FY 23-24 (CIP 73193)	Paving rehab/repair of about 7 lane miles of streets	Tracy Blvd. (Lowell Avenue to Grant Line Road) Spot Patching at Corral Hollow Road (11th Street to Parkside Drive) MacArthur Drive (11th Street to Grant Line Road)	10-15 years	September 2023	April 2024

* * * * * * * * * * * * * *

The foregoing Resolution 2023-_____ was adopted by the Tracy City Council on the 5th of September 2023 by the following vote:

AYES: COUNCIL MEMBERS:
NOES: COUNCIL MEMBERS:
ABSENT: COUNCIL MEMBERS:
ABSTENTION: COUNCIL MEMBERS:

_____
NANCY D. YOUNG
Mayor of the City of Tracy, California

ATTEST:_____
ADRIANNE RICHARDSON
City Clerk and Clerk of the Council of the
City of Tracy, California

September 5, 2023

Agenda Item 1.J

RECOMMENDATION

Staff recommends that the City Council adopt a resolution (1) accepting public improvements as complete for Holly Commerce Center for a 12" water line, roadway, drainage, and frontage improvements constructed by Olliix, LLC, a California Limited Liability Company, and assuming responsibility for the future maintenance and repair, (2) authorizing the City Engineer to release performance and payment bonds, (3) authorizing the City Clerk to file the Notice of Completion with the San Joaquin County Recorder's Office, and (4) determining that the recommended actions are exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15061(b)3.

EXECUTIVE SUMMARY

Olliix, LLC, a California Limited Liability Company (Developer), has completed public improvements for Holly Commerce Center including a 12" water line, roadway, drainage, and frontage improvements in accordance with the Offsite Improvement Agreement (Agreement), project plans, and specifications. Staff recommends City Council accept the improvements as completed to enable the City to file a Notice of Completion and release the Developer's bonds.

BACKGROUND AND LEGISLATIVE HISTORY

The offsite improvements have been constructed to serve the Holly Commerce Center project, which consists of a 981,430-square-foot warehouse facility located at 9375 W. Sugar Road (APN 212-160-17) in the jurisdiction of San Joaquin County. On January 7, 2021, the City Manager, through emergency authority, approved the Offsite Improvement Agreement (Agreement) for Holly Commerce Center for a 12" water line, roadway, drainage, and frontage improvements. The offsite improvements are generally located on Holly Drive north of Arbor Road, Arbor Road between Holly Drive and N MacArthur Drive, and N. MacArthur Drive between Arbor Road and I-205. The offsite improvements support the Holly Commerce Center, a recently constructed commercial project located inside San Joaquin County, outside of the Tracy city limits. However, the project site has frontage along Holly Drive, which is within City limits. The Holly Commerce Center was conditioned by San Joaquin County to make improvements to the City street in compliance with City Standards. The Agreement includes the work required within the City limits.

Siegfried Engineers Inc. prepared the improvement plans entitled "Offsite Improvement Plans Holly Commerce Center," on behalf of the Developer. The improvement plans were approved by the City Engineer, and bonds were provided by Developer to assure the completion of the public improvements. The estimated cost of the public improvements is as follows:

Cost Breakdown:	
Roadway Improvements	$ 1,356,458
Water	$ 243,118
Storm Drainage	$ 373,098
Street Lighting	$ 53,708
Total	**$ 2,026,382**

Developer has completed all work required to be done in accordance with the Agreement and has requested acceptance of the public improvements. The City Engineer has inspected the completed work and confirmed that the improvements conform to the Agreement and City specifications and plans. Notice of Completion should be filed by the City Clerk, to be recorded at San Joaquin County Recorder's Office. Subsequently, performance and materials and labor bonds may be released per Tracy Municipal Code 12.36.080. The project carries a one-year warranty bond for all public improvements.

The developer was required by the City to dedicate additional right-of-way along the Holly Drive frontage to accommodate the master plan cross-section of that street. A total of 12,240 square feet (0.281 acres) was dedicated in fee by deed recorded as Document No. 2021-212200 with the San Joaquin County Recorder and accepted by the City Clerk. Land value of the dedicated public right-of-way is estimated at $28,100. In addition, a public utility easement was dedicated to the City along the project frontage on Holly Drive and Sugar Road containing 8,889 square feet, and accepted by the City Clerk, recorded as Document No. 2021-212201 with the San Joaquin County Recorder.

FISCAL IMPACT

All improvements were completed by the Developer in accordance with the Offsite Improvement Agreements and there is no fiscal impact associated with the requested actions.

PUBLIC OUTREACH / INTEREST

Not applicable.

COORDINATION

Project construction activities were coordinated with City of Tracy Public Works and Utilities Departments.

CEQA DETERMINATION

San Joaquin County adopted a Mitigated Negative Declaration for the Holly Commerce Center project in September 2018. The City's acceptance of the offsite improvements is categorically exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15061(b)3, which pertains to activities covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is exempt from environmental review under CEQA. In this instance, the development and operation of the warehouse facility, including the construction of the offsite improvements, have already been analyzed under CEQA. The mere act of the City's acceptance of the offsite improvements has no potential for biological or other environmental impacts associated with construction in the ROW. As such, there is no potential for recommended actions by the City Council to result in significant environmental impacts, and it is therefore exempt from CEQA review. No further environmental assessment is necessary.

STRATEGIC PLAN

This agenda item is consistent with the Council-approved Economic Development Strategy to ensure physical infrastructure necessary for development.

ACTION REQUESTED OF THE CITY COUNCIL

That City Council, adopt a resolution to, (1) accept the public improvements as complete in accordance with the Offsite Improvement Agreement for Holly Commerce Center (Olliix) for a 12" water line, roadway, drainage, and frontage improvements, and assume responsibility for their future maintenance and repair, (2) authorize the City Engineer to release the performance and payment bonds, (3) authorize the City Clerk to file Notice of Completion with the San Joaquin County Recorder's office, and (4) determine that the foregoing actions are categorically exempt from environmental review under CEQA pursuant to CEQA Guidelines Section 15061(b)3.

Prepared by: Leisser P. Mazariegos, Associate Engineer

Reviewed by: Koosun Kim, PE, City Engineer / Assistant Director of Development Services
Sara Cowell, Finance Director
Karin Schnaider, Assistant City Manager

Approved by: Midori Lichtwardt, Interim City Manager

APPROVED AS TO FORM AND LEGALITY

_____
CITY ATTORNEY'S OFFICE

TRACY CITY COUNCIL

RESOLUTION 2023-_____

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(1) ACCEPTING IMPROVEMENTS FOR HOLLY COMMERCE CENTER (OLLIIX) FOR A 12" WATER LINE, ROADWAY, DRAINAGE, AND FRONTAGE IMPROVEMENTS AND ASSUMING RESPONSIBILITY FOR THE FUTURE MAINTENANCE AND REPAIR; AND

(2) AUTHORIZING THE CITY ENGINEER TO RELEASE PERFORMANCE, PAYMENT, AND MONUMENTATION BONDS; AND

(3) AUTHORIZING THE CITY CLERK TO FILE NOTICE OF COMPLETION; AND

(4) DETERMINING THAT THE ACTIONS AUTHORIZED BY THIS RESOLUTION ARE CATEGORICALLY EXEMPT FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) PURSUANT TO CEQA GUIDELINES SECTION 15061(b)3.

WHEREAS, on January 7, 2021, City Manager approved an Offsite Improvement Agreement (Agreement) with Olliix, LLC, a California Limited Liability Company (Developer) for construction of public improvements associated with the Holly Commerce Center; and

WHEREAS, the City Engineer has inspected the completed work and recommends acceptance of all the improvements completed in accordance with the Agreement; and

WHEREAS, Developer furnished performance, payment, and warranty bonds assuring completion of the work. The estimated cost of the improvements is as follows:

Roadway Improvements	$ 1,356,458
Water	$ 243,118
Storm Drainage	$ 373,098
Street Lighting	$ 53,708
Total Improvements	$ 2,026,382
Dedicated Land Value	$ 28,100; and

WHEREAS, 12,240 square feet (0.281 acres) was previously dedicated in fee as public right-of-way and accepted by the City Clerk; and

WHEREAS, the actions authorized by this resolution are categorically exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15061(b)3, because it can be seen with certainty that there is no possibility that said actions may have a significant effect on the environment; and be it

RESOLVED: That the City Council of the City of Tracy hereby accepts the improvements for Holly Commerce Center (Olliix) for a 12" water line, roadway, drainage, and frontage improvements in accordance with the Agreement and assumes responsibility for their future maintenance and repair; and be it

FURTHER RESOLVED: That the City Council authorizes the City Engineer to release the performance and payment bonds in accordance with the terms of the Agreement; and be it

FURTHER RESOLVED: That City Council authorizes the City Clerk to file a notice of completion with San Joaquin County Recorder's Office; and be it

FURTHER RESOLVED: That the City Council determines that the actions authorized by this resolution are categorically exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15061(b)3.

* * * * * * * * * * * * * *

The foregoing Resolution 2023-_____ was adopted by the Tracy City Council on the 5th day of September 2023, by the following vote:

AYES: COUNCIL MEMBERS:
NOES: COUNCIL MEMBERS:
ABSENT: COUNCIL MEMBERS:
ABSTENTION: COUNCIL MEMBERS:

_____
NANCY D. YOUNG
Mayor of the City of Tracy, California

ATTEST: _____
ADRIANNE RICHARDSON
City Clerk and Clerk of the Council of the
City of Tracy, California

September 5, 2023

Agenda Item 1.K

RECOMMENDATION

The Tracy Homelessness Advisory Committee recommends that the City Council adopt a resolution (1) making a determination that compliance with standard procurement process is not in the best interest of the City and (2) approving general services agreement with Bicsec Security, Inc. for fire alarm and smoke alarm systems to be installed as part of the site improvements for the Phase IV Custom Containers at the Temporary Emergency Housing Facility, CIP 71112, at 370 Arbor Avenue.

EXECUTIVE SUMMARY

The Tracy Homelessness Advisory Committee recommends that the City Council adopt a Resolution ratifying, pursuant to Tracy Municipal Code Section 2.20.180(B)(1), contracts for goods and general services agreements executed by the City Manager to implement Emergency Interim Housing solutions for the unsheltered with Bicsec Security, Inc.

This agenda item is to provide a summary of several actions followed by staff to implement emergency interim housing solutions for the unsheltered, and to receive ratification by City Council of the various contracts for goods and general services. On August 16, 2022, the City Council adopted Resolution No. 2022-121 (Resolution), which reaffirmed an emergency shelter crisis as the City of Tracy continues to experience an increasing number of unsheltered individuals. Due to the declaration of an emergency, the Resolution authorized the City Manager to take requisite actions needed to expeditiously provide interim housing solutions.

This agenda item is to approve general services agreement for specialty services with the service provider, Bicsec Security, Inc., to provide the design and installation of monitored fire alarm and smoke alarm systems to the Custom Containers.

The Tracy Homelessness Advisory Committee (THAC) heard this item on June 15, 2023, and recommended that the City Council adopt the proposed Resolution.

BACKGROUND AND LEGISLATIVE HISTORY

On September 1, 2020, City Council authorized the creation of a Capital Improvement Project (CIP) for the Temporary Emergency Housing Project on Arbor Avenue, CIP 71112 (Project) to create a safe and dignified facility for residents experiencing homelessness.

On June 15, 2023, THAC was presented with an item to discuss and provide direction regarding Phase IV – Custom Containers at the Temporary Emergency Housing Facility Project. THAC members agreed to make a motion, during Council Items at the next City Council meeting, that the City Council hear the item directly on July 5, 2023.

On July 5, 2023, as part of the Phase IV interim shelter facility improvements, City Council authorized the purchase of eight (8) custom container dormitories from Linked Equipment under Resolution 2023-140.

In order to comply with Fire and Building Codes, the eight dormitory units must include monitored fire alarm systems and smoke alarm systems that require contractors with state licenses for those specialty services.

ANALYSIS

The Resolution, adopted on August 16, 2022, directed the City Manager to take immediate and emergency actions necessary to implement interim housing solutions for Tracy's unsheltered population until the completion and opening of the Temporary Emergency Housing Project on Arbor Road. As noted above, at the time of adopting Resolution No. 2022-121, the City was exploring the leasing of fully constructed modular units to locate on Arbor Road and did not anticipate undertaking additional construction activities at the site beyond what had already been completed as part of Phase I of the Temporary Emergency Housing Project. As directed, per the Resolution, the City mobilized rapidly to undertake certain activities to install the interim housing solutions and operate them with adequate health and safety protections.

Tracy Municipal Code Section 2.20.180 (b)(4) states that exceptions to standard procurement procedures is allowable "When, in the determination of the City Council, compliance with the procedure is not in the best interest of the City for those commodities, equipment or general services the costs of which equal or exceed Fifty Thousand and no/100ths ($50,000.00) Dollars."

Bicsec Security, Inc. currently provides all fire, smoke, and burglar alarm systems for City facilities and provides constant monitoring of those system, coordinating with Police and Fire dispatchers when required. The Bicsec Security system is proprietary and City staff have been trained on those systems for routine maintenance and testing.

At the July 5, 2023, City Council meeting, staff mentioned that additional trades will be required to complete the design and installation of the fire sprinkler systems, complete undergrounding, and complete electrical work. Staff anticipates requesting authorization of these additional trades at a later date.

Due to the imminent need to provide housing solutions, the following general services agreements have been prepared to expedite installation for the Custom Container:

Vendor	**Summary**	**Amount**	**Not to Exceed Amount**
Bicsec Security, Inc.	Fire Alarm System Installation for custom containers	$60,000	$60,000
	TOTAL	$60,000	$60,000

The above-mentioned agreement for goods and general services agreement total is $60,000 as part of this request.

FISCAL IMPACT

The City secured a grant of $1.2 Million dollars from Health Plan of San Joaquin for the costs of the custom containers and interim site expenses related to Phase III and Phase IV. In addition, the City has committed funding from American Rescue Plan Act (ARPA) for the operations costs at the Temporary Housing Emergency Shelter. Per City Council's approval of the $1.2 Million dollar grant from Health Plan of San Joaquin, below is a breakdown of the funding allocation. Funding for the contract with Bicsec Security, Inc. is covered by the grant funds from Health Plan of San Joaquin.

Health Plan of San Joaquin Grant

Modulars (Phase III first year)	$120,000
Custom Containers (Phase IV)	$716,320
Operating (Supplies, Fuel) (Phase III and IV first year)	$363,680
Total Health Plan of San Joaquin Grant Funding	**$1,200,000**

CEQA DETERMINATION

Government Code section 8698.4 exempts the application of the California Environmental Quality Act (CEQA) to various actions taken by public agencies to implement the construction of a homeless shelter in response to a declared shelter crisis. In addition, the interim solutions taken thus far are in furtherance of and related to the permanent solution that will be implemented, referred to as the Temporary Emergency Housing Project on Arbor Avenue (CIP 71112). A Notice of Exemption was issued on October 16, 2020, for the Temporary Emergency Housing site at 500 Arbor Avenue in accordance with Government Code sections 65660-65662 for Low Barrier Navigation Centers and Section 15269(c) of the CEQA Guidelines (14 Cal. Code Regs. 15269(c) for (Emergency Projects). No environmental impacts beyond those already analyzed for the CIP exist; accordingly, no further CEQA analysis is needed.

STRATEGIC PLAN

This agenda item supports the Public Safety Strategic Priority, *Implement the adopted Homelessness Strategic Plan*.

ACTION REQUESTED OF THE CITY COUNCIL

The Tracy Homelessness Advisory Committee recommends that the City Council adopt a resolution (1) making a determination that compliance with standard procurement process is not in the best interest of the City and (2) approving general services agreement with Bicsec Security, Inc. for fire alarm and smoke alarm systems to be installed as part of the site improvements for the Phase IV Custom Containers at the Temporary Emergency Housing Facility, CIP 71112, at 370 Arbor Avenue.

Prepared by: Virginia Carney, Homeless Services Manager

Reviewed by: Adriana Castaneda, Director of Mobility and Housing
Sara Cowell, Director of Finance
Brian MacDonald, Interim Assistant City Manager

Approved by: Midori Lichtwardt, Interim City Manager

ATTACHMENTS:

Attachment A- General Services Agreement

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CITY OF TRACY
GENERAL SERVICES AGREEMENT WITH
B.I.C.SEC Security, Inc. – Temporary Emergency Housing Facility Fire Alarm System and Installation

This General Services Agreement (**Agreement**) is entered into between the City of Tracy, a municipal corporation (**City**), and B.I.C.SEC Security, Inc., a California corporation (**Contractor**). City and Contractor are referred to individually as "Party" and collectively as "Parties."

Recitals

A. City desires to retain Contractor to provide the Temporary Emergency Housing Facility (TEHF) with Fire Alarm System and Installation; and

B. After negotiations between the City and Contractor, the Parties have reached an agreement for the performance of services in accordance with the terms set forth in this Agreement.

C. Pursuant to Resolution No. _____, the City Council dispensed the procurement requirements for this Agreement under Tracy Municipal Code section 2.20.180, subsection (b)(4), and authorized execution of this Agreement.

D. This Agreement is being executed pursuant to Resolution No. _____.

Now therefore, the Parties mutually agree as follows:

1. Scope of Work. Contractor shall perform the services described in Exhibit "A" attached and incorporated by reference. The services shall be performed by, or under the direct supervision of, Contractor's Authorized Representative: B.I.C.SEC Security, Inc. Contractor shall not replace its Authorized Representative, nor shall Contractor use or replace any subcontractors or subconsultants, without City's prior written consent. A failure to obtain the City's prior written consent for any change or replacement in personnel or subcontractor may result in the termination of this Agreement.

2. Time of Performance. Time is of the essence in the performance of services under this Agreement and the timing requirements set forth shall be strictly adhered to unless otherwise modified in writing in accordance with this Agreement. Any services for which times for performance are not specified in this Agreement shall be started and completed by Contractor in a reasonably prompt and timely manner based upon the circumstances and direction communicated to the Contractor. Contractor shall submit all requests for time extensions to the City in writing no later than ten days after the start of the condition which purportedly caused the delay, and not later than the date on which performance is due. City shall grant or deny such requests at its sole discretion.

2.1 Term. The term of this Agreement shall begin on April 18, 2023, and end on October 31, 2023, unless terminated in accordance with Section 6.

3. Compensation. City shall pay Contractor a fixed amount as set forth in Exhibit "B" attached and incorporated by reference for services performed under this Agreement.

3.1 Not to Exceed Amount. Contractor's total compensation under this Agreement shall not exceed $60,000. Contractor's billing rates shall cover all costs and expenses for Contractor's performance of this Agreement. No work shall be performed by Contractor in excess of the total compensation amount provided in this section without the City's prior written approval.

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3.2 Invoices. Contractor shall submit monthly invoices to the City that describe the services performed, including times, dates, and names of persons performing the services.

3.2.1. Contractor's failure to submit invoices in accordance with these requirements may result in the City rejecting said invoices and thereby delaying payment to Contractor.

3.3 Payment. Within 30 days after the City's receipt of invoice, City shall make payment to the Contractor based upon the services described on the invoice and approved by the City.

4. Indemnification. Contractor shall, to the fullest extent permitted by law, indemnify, defend (with independent counsel approved by the City), and hold harmless the City from and against any claims arising out of Contractor's performance or failure to comply with obligations under this Agreement, except to the extent caused by the sole, active negligence or willful misconduct of the City.

In this section, "City" means the City, its officials, officers, agents, employees and volunteers; "Contractor" means the Contractor, its employees, agents and subcontractors; "Claims" includes claims, demands, actions, losses, damages, injuries, and liability, direct or indirect (including any and all related costs and expenses) and any allegations of these; and "Arising out of" includes "pertaining to" and "relating to".

The provisions of this section survive completion of the services or the termination of this Agreement, and are not limited by the provisions of Section 5 relating to insurance.

5. Insurance. Contractor shall, throughout the duration of this Agreement, maintain insurance to cover Contractor, its agents, representatives, and employees in connection with the performance of services under this Agreement at the minimum levels set forth herein.

5.1 Commercial General Liability (with coverage at least as broad as ISO form CG 00 01 01 96) "per occurrence" coverage shall be maintained in an amount not less than $4,000,000 general aggregate and $2,000,000 per occurrence for general liability, bodily injury, personal injury, and property damage.

5.2 Automobile Liability (with coverage at least as broad as ISO form CA 00 01 07 97, for "any auto") "claims made" coverage shall be maintained in an amount not less than $1,000,000 per accident for bodily injury and property damage.

5.3 Workers' Compensation coverage shall be maintained as required by the State of California.

5.4 Professional Liability "claims made" coverage shall be maintained to cover damages that may be the result of errors, omissions, or negligent acts of Contractor in an amount not less than $1,000,000 per claim.

5.5 Endorsements. Contractor shall obtain endorsements to the automobile and commercial general liability insurance policies with the following provisions:

5.5.1 The City (including its elected officials, officers, employees, agents, and volunteers) shall be named as an additional "insured."

5.5.2 For any claims related to this Agreement, Contractor's coverage shall be primary insurance with respect to the City. Any insurance maintained by the City shall be excess of the Contractor's insurance and shall not contribute with it.

5.6 Notice of Cancellation. Contractor shall notify the City if the policy is canceled before the expiration date. For the purpose of this notice requirement, any material change in the policy prior to the expiration shall be considered a cancellation. Contractor shall immediately obtain a replacement policy.

5.7 Authorized Insurers. All insurance companies providing coverage to Contractor shall be insurance organizations authorized by the Insurance Commissioner of the State of California to transact the business of insurance in the State of California.

5.8 Insurance Certificate. Contractor shall provide evidence of compliance with the insurance requirements listed above by providing a certificate of insurance and endorsements, in a form satisfactory to the City, before the City signs this Agreement.

5.9 Substitute Certificates. Contractor shall provide a substitute certificate of insurance no later than 30 days prior to the policy expiration date of any insurance policy required by this Agreement.

5.10 Contractor's Obligation. Maintenance of insurance by the Contractor as specified in this Agreement shall in no way be interpreted as relieving the Contractor of any responsibility whatsoever (including indemnity obligations under this Agreement), and the Contractor may carry, at its own expense, such additional insurance as it deems necessary. Failure to provide or maintain any insurance policies or endorsements required herein may result in the City terminating this Agreement.

6. Termination. The City may terminate this Agreement by giving ten days' written notice to Contractor. Upon termination, Contractor shall give the City all original documents, including preliminary drafts and supporting documents, prepared by Contractor for this Agreement. The City shall pay Contractor for all services satisfactorily performed in accordance with this Agreement, up to the date notice is given.

7. Dispute Resolution. If any dispute arises between the City and Contractor that cannot be settled after engaging in good faith negotiations, City and Contractor agree to resolve the dispute in accordance with the following:

7.1 Each Party shall designate a senior management or executive level representative to negotiate the dispute;

7.2 The representatives shall attempt, through good faith negotiations, to resolve the dispute by any means within their authority.

7.3 If the issue remains unresolved after fifteen (15) days of good faith negotiations, the Parties shall attempt to resolve the disagreement by negotiations between legal counsel. If the aforementioned process fails, the Parties shall resolve any remaining disputes through mediation to expedite the resolution of the dispute.

7.4 The mediation process shall provide for the selection within fifteen (15) days by both Parties of a disinterested third person as mediator, shall be commenced within thirty (30) days and shall be concluded within fifteen (15) days from the commencement of the mediation.

7.5 The Parties shall equally bear the costs of any third party in any alternative dispute resolution process.

7.6 The dispute resolution process is a material condition to this Agreement and must be exhausted prior to either Party initiating legal action. This dispute resolution process is not intended to nor shall be construed to change the time periods for filing a claim or action specified by Government Code §§ 900 et seq.

8 Labor Code Compliance. Contractor is aware of the requirements of Chapter 1 of Part 7 of Division 2 of the California Labor Code and applicable regulations which require the payment of prevailing wage rates (§1771, §1774, and §1775); employment of apprentices (§1777.5), certified payroll records (§1776), hours of labor (§1813 and §1815), debarment of contractors and subcontractors (§1777.1) and the performance of other requirements on "public works" and "maintenance" projects. The services being performed under this Agreement are part of a "public works" or "maintenance" project, as defined in the Prevailing Wage Laws, Contractor agrees to fully comply with such Prevailing Wage Laws.

8.1 Rates. These prevailing wage rates are on file with the City and are available online at http://www.dir.ca.gov/DLSR. Each Contractor and Subcontractor must pay no less than the specified rates to all workers employed to perform the services described herein. The schedule of per diem wages is based upon a working day of eight hours. The rate for holiday and overtime work must be at least time and one-half. Contractor assumes all responsibility for such payments and shall defend,

indemnify and hold the City harmless from any and all claims made by the State of California, the Department of Industrial Relations, any subcontractor, any worker, or any other third party.

8.2 Registration with DIR. Contractor warrants that it is registered with the Department of Industrial Relations and qualified to perform the services consistent with Labor Code section 1725.5.

8.3 Monitoring. This Agreement will be subject to compliance monitoring and enforcement by the DIR, under Labor Code section 1771.4.

9. Ownership of Work. All original documents prepared by Contractor for this Agreement, whether complete or in progress, are the property of the City, and shall be given to the City at the completion of Contractor's services, or upon demand from the City. No such documents shall be revealed or made available by Contractor to any third party without the City's prior written consent.

10. Independent Contractor Status. Contractor is an independent contractor and is solely responsible for the acts of its employees or agents, including any negligent acts or omissions. Contractor is not City's employee and Contractor shall have no authority, express or implied, to act on behalf of the City as an agent, or to bind the City to any obligation, unless the City provides prior written authorization. Contractor is free to work for other entities while under contract with the City. Contractor, and its agents or employees, are not entitled to City benefits.

11. Conflicts of Interest. Contractor (including its employees, agents, and subcontractors) shall not maintain or acquire any direct or indirect interest that conflicts with the performance of this Agreement. If Contractor maintains or acquires such a conflicting interest, the City may terminate any contract (including this Agreement) involving Contractor's conflicting interest.

12. Rebates, Kickbacks, or Other Unlawful Consideration. Contractor warrants that this Agreement was not obtained or secured through rebates, kickbacks, or other unlawful consideration either promised or paid to any City official or employee. For breach of this warranty, City shall have the right, in its sole discretion, to terminate this Agreement without liability; to pay only for the value of the work actually performed; or to deduct from the contract price; or otherwise recover the full amount of such rebate, kickback, or other unlawful consideration.

13. Notices. All notices, demands, or other communications which this Agreement contemplates or authorizes shall be in writing and shall be personally delivered or mailed to the other party to the addresses listed below. Communications shall be deemed to have been given and received on the first to occur of: (1) actual receipt at the address designated below, or (2) three working days after the deposit in the United States Mail of registered or certified mail, sent to the address designated below.

To City:

Karin Schnaider
Assistant City Manager
City of Tracy
333 Civic Center Plaza
Tracy, Ca 95376

With a copy to:
City Attorney
333 Civic Center Plaza
Tracy, CA 95376

To Contractor:

B.I.C.SEC Security, Inc.
1656 Herndon Road
Ceres, CA 95307

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14. Miscellaneous.

14.1 Standard of Care. Unless otherwise specified in this Agreement, the standard of care applicable to Contractor's services will be the degree of skill and diligence ordinarily used by reputable professionals performing in the same or similar time and locality, and under the same or similar circumstances.

14.2 Amendments. This Agreement may not be modified orally or in any manner other than by an agreement in writing signed by both Parties.

14.3 Waivers. Waiver of a breach or default under this Agreement shall not constitute a continuing waiver or a waiver of a subsequent breach of the same or any other provision of this Agreement.

14.4 Assignment and Delegation. Contractor may not assign, transfer or delegate this Agreement or any portion of it without the City's written consent. Any attempt to do so will be void. City's consent to one assignment shall not be deemed to be a consent to any subsequent assignment.

14.5 Jurisdiction and Venue. The interpretation, validity, and enforcement of the Agreement shall be governed by and construed under the laws of the State of California. Any suit, claim, or legal proceeding of any kind related to this Agreement shall be filed and heard in a court of competent jurisdiction in the County of San Joaquin.

14.6 Compliance with the Law. Contractor shall comply with all applicable local, state, and federal laws, whether or not those laws are expressly stated in this Agreement.

14.6.1 Hazardous Materials. Contractor is responsible for all costs of clean up and/or removal of hazardous and toxic substances spilled as a result of performing their services.

14.6.2 Non-discrimination. Contractor represents and warrants that it is an equal opportunity employer and it shall not discriminate against any subcontractor, employee or applicant for employment because of race, religion, color, national origin, handicap, ancestry, sex or age. Contractor shall also comply with all applicable anti-discrimination federal and state laws, including but not limited to, the California Fair Employment and Housing Act (Gov. Code 12990 (a-f) et seq.).

14.7 Business Entity Status. Contractor is responsible for filing all required documents and/or forms with the California Secretary of State and meeting all requirements of the Franchise Tax Board, to the extent such requirements apply to Contractor. By entering into this Agreement, Contractor represents that it is not a suspended corporation. If Contractor is a suspended corporation at the time it enters this Agreement, City may take steps to have this Agreement declared voidable.

14.8 Business License. Before the City signs this Agreement, Contractor shall obtain a City of Tracy Business License. Contractor shall maintain an active City of Tracy Business License during the term of this Agreement.

14.9 Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the Parties hereto and their respective successors and assigns.

14.10 Construction of Agreement. Each Party hereto has had an equivalent opportunity to participate in the drafting of this Agreement and/or to consult with legal counsel. Therefore, the usual construction of an agreement against the drafting Party shall not apply hereto.

14.11. **Severability.** If a term of this Agreement is held invalid by a court of competent jurisdiction, the Agreement shall be construed as not containing that term, and the r**e**mainder of this Agreement shall remain in effect.

14.12 Controlling Provisions. In the case of any conflict between the terms of this Agreement and the Exhibits hereto, and Contractor's proposal (if any), the Agreement shall control. In the case of any conflict between the Exhibits hereto and the Contractor's proposal (if any), the Exhibits shall control.

14.13 Entire Agreement. This Agreement and the attached Exhibits comprise the entire integrated understanding between the Parties concerning the services to be performed. This Agreement supersedes all prior negotiations, representations or agreements. All exhibits attached hereto are incorporated by reference herein.

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15. Signatures. The individuals executing this Agreement on behalf of Contractor represent and warrant that they have the right, power, legal capacity and authority to enter into and to execute this Agreement on behalf of Contractor.

[SIGNATURES ON FOLLOWING PAGE]

The Parties agree to the full performance of the terms set forth here.

City of Tracy

_____
By: Nancy D. Young
Title: Mayor
Date: _____

Attest:

_____
Adrianne Richardson, City Clerk

Approved as to form:

_____
Bijal M. Patel, City Attorney

B.I.C.SEC Security, Inc.

DocuSigned by:
Paul Butler
D8EC3B24C8C9459...
By: Paul Harlen Butler
Title: Chief Executive Officer
Date: 7/19/2023 | 2:31 PM PDT

Federal Employer Tax ID No.

DocuSigned by:
Alicia Oliver
466A7C8EC8FE4BA...
By: Alicia Oliver
Title: Office Manager
Date: 7/19/2023 | 2:23 PM PDT

Exhibits:

A Scope of Work, including personnel and time of performance (See Agreement sections 1 and 2.)
B Compensation (See Agreement section 3.)

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EXHIBIT A - Scope of Work

Installation of Fire Alarm System as follows:
(8) Outdoor Horn/Strobes
(8) Pull Stations
(40) Smoke Detectors
(34) LF Ceiling Homs
(5) LF Ceiling Hom/Strobes
(8) Waterflows (To be provided and installed by others)
(8) Gate Valve Tampers (To be provided and installed by others)
(2) OS& Y Tampers (To be provided and installed by BIC)
(1) NAC Panel
City contractor to provide conduit and pull strings
Excludes connection, programming, access to others Fire Alarm Control Panels.

Excludes any OSHPD related fees or costs
Excludes any demo or removal of wire or fire alarm devices
Excludes any fire alarm shut-down fees OR Fire Watch costs (if applicable)
Excludes any devices for pump houses, tanks, pump rooms, or back-up generators. Does not include any two-way communication or radio equipment.

City contractors are responsible for providing CAD drawing (via email to B.I.C. Security) and dedicated 120 V power. All conduit, including underground conduit, in wall conduit, in ceiling conduit, pathways and pull cords between buildings, and outside sprinkler back-flow preventer/ PIV's to be provided by City contractor, not by B.I.C. Security. All governmental fees to be provided by City contractor.

All design and installation work shall be inspected and permitted by South San Joaquin Fire Authority.

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EXHIBIT B - Compensation

Total Cost of Installation: $59,296.24

B.I.C. Security to provide and run all wire for Fire Alarm devices.
Cost for drawings to Fire Marshall - Included
Local Fire Agency Fee – Not Included

APPROVED AS TO FORM AND LEGALITY

_____
CITY ATTORNEY'S OFFICE

TRACY CITY COUNCIL

RESOLUTION NO. _____

APPROVING, PURSUANT TO TRACY MUNICIPAL CODE SECTION 2.20.180(B)(1), GENERAL SERVICES AGREEMENTS WITH BICSEC SECURITY, INC. IN A NOT-TO-EXCEED AMOUNT OF $60,000

WHEREAS, the City of Tracy, like many cities across California, is experiencing a shelter crisis; and

WHEREAS, on March 10, 2020, the City Council declared a shelter crisis through the adoption of Resolution 2020-052; and

WHEREAS, under the shelter crisis, the City is authorized to provide emergency housing, shelters, bridge housing communities, and other services to the unsheltered; and

WHEREAS, on September 1, 2020, the City Council authorized the creation of a Capital Improvement Project for the Temporary Emergency Housing Project on Arbor Avenue, CIP 71112 (Project) to create a safe and dignified facility for residents experiencing homelessness (Facility); and

WHEREAS, the City desires to provide interim housing solutions until the completion and opening of the City's Facility; and

WHEREAS, Government Code section 8698.4 exempts the application of the California Environmental Quality Act (CEQA) to various actions taken by public agencies to implement the construction of a homeless shelter in response to a declared shelter crisis; and

WHEREAS, a Notice of Exemption was issued on October 16, 2020, for the Temporary Emergency Housing (Facility) site at 500 Arbor Avenue in accordance with Government Code sections 65660-65662 for Low Barrier Navigation Centers and Section 15269(c) of the CEQA Guidelines (14 Cal. Code Regs. 15269(c) for (Emergency Projects); and

WHEREAS, on August 16, 2022, the City Council approved Resolution 2022-121 and directed the City Manager to take immediate and emergency actions necessary to implement interim housing solutions for Tracy's unsheltered until the completion and opening of the Facility, including negotiating with potential service providers and identifying potential sites for such interim housing solutions; and

WHEREAS, for purchases or general services of $50,000 or more, Tracy Municipal Code Section 2.20.180 requires that the City follow a formal bidding procedure for the procurement of such goods or general services; and

WHEREAS, Tracy Municipal Code Section 2.20.180(b)(4) states that exceptions to standard procurement procedures is allowable "When, in the determination of the City Council, compliance with the procedure is not in the best interest of the City for those commodities, equipment or general services the costs of which equal or exceed Fifty Thousand and no/100ths ($50,000.00) Dollars"; and

WHEREAS, The Tracy Homelessness Advisory Committee heard this item on June 15, 2023, and recommended that the City Council adopt the proposed Resolution; and

WHEREAS, on July 5, 2023, City Council authorized the purchase of eight (8) custom container dormitories from Linked Equipment under Resolution 2023-140 for installation as part of Phase IV interim facilities; and

WHEREAS, on July 5, 2023, City Council meeting, staff mentioned that additional trades will be required to complete the design and installation of the fire sprinkler systems, complete undergrounding, and complete electrical work. Staff anticipates requesting authorization of these additional trades at a later date; now, therefore, be it

RESOLVED: That the City Council finds and determines the foregoing recitals to be true and correct and hereby makes them a part of this Resolution; and be it

FURTHER RESOLVED: That the City Council makes the determination, in accordance with Tracy Municipal Code Section 2.20.180 (b)(4), that compliance with standard procurement process is not in the best interest of the City:and

FURTHER RESOLVED: That the City Council hereby approves general services agreements with Bicsec Security, Inc. in the not-to-exceed amount of $60,000: and

FURTHER RESOLVED: The City Council, based on its own independent investigation and judgment, finds that no further analysis under the California Environmental Quality Act (CEQA) for the actions authorized herein because: 1) Government Code section 8698.4 exempts the application of the to various actions taken by public agencies to implement the construction of a homeless shelter in response to a declared shelter crisis; 2) the interim solutions taken thus far are in furtherance of and related to the permanent solution that will be implemented, referred to as the Temporary Emergency Housing Project on Arbor Avenue (CIP 71112); 3) A Notice of Exemption was issued on October 16, 2020 for the Temporary Emergency Housing site at 500 Arbor Avenue in accordance with Government Code sections 65660-65662 for Low Barrier Navigation Centers and Section 15269(c) of the CEQA Guidelines (14 Cal. Code Regs. 15269(c) for (Emergency Projects); and 4) No environmental impacts beyond those already analyzed for the CIP exist.

* * * * * * * * * * * * * * *

The foregoing Resolution 2023-_____ was adopted by the Tracy City Council on September 5, 2023, by the following vote:

AYES:	COUNCIL MEMBERS:
NOES:	COUNCIL MEMBERS:
ABSENT:	COUNCIL MEMBERS:
ABSTENTION:	COUNCIL MEMBERS:

_____
NANCY D. YOUNG
Mayor of the City of Tracy, California

ATTEST:_____
ADRIANNE RICHARDSON
City Clerk and Clerk of the Council of the
City of Tracy, California

September 5, 2023

Agenda Item 1.L

RECOMMENDATION

The Tracy Homelessness Advisory Committee recommends that the City Council adopt a resolution (1) making a determination that compliance with standard procurement process is not in the best interest of the City and (2) approving general services agreement with Jr. Wagner Fire Protection, Inc., for design and installation of the fire sprinkler system to be installed as part of the site improvements for the Phase IV Custom Containers at the Temporary Emergency Housing Facility, CIP 71112, at 370 West Arbor Avenue.

EXECUTIVE SUMMARY

The Tracy Homelessness Advisory Committee recommends that the City Council adopt a Resolution ratifying, pursuant to Tracy Municipal Code Section 2.20.180(B)(1), contracts for goods and general services agreements executed by the City Manager to implement Emergency Interim Housing solutions for the unsheltered with Jr. Wagner Fire Protection, Inc.

This agenda item is to provide a summary of several actions followed by staff to implement emergency interim housing solutions for the unsheltered, and to receive ratification by City Council of the various contracts for goods and general services. On August 16, 2022, the City Council adopted Resolution No. 2022-121 (Resolution), which reaffirmed an emergency shelter crisis as the City of Tracy continues to experience an increasing number of unsheltered individuals. Due to the declaration of an emergency, the Resolution authorized the City Manager to take requisite actions needed to expeditiously provide interim housing solutions.

This agenda item is to approve general services agreement for specialty services with the service provider, Jr. Wagner Fire Protection, Inc., to provide the design and installation of fire sprinkler system to the Custom Containers.

The Tracy Homelessness Advisory Committee (THAC) heard this item on June 15, 2023, and recommended that the City Council adopt the proposed Resolution.

BACKGROUND AND LEGISLATIVE HISTORY

On September 1, 2020, Council authorized the creation of a Capital Improvement Project (CIP) for the Temporary Emergency Housing Project on Arbor Avenue, CIP 71112 (Project), to create a safe and dignified facility for residents experiencing homelessness.

On June 15, 2023, THAC was presented with an item to discuss and provide direction regarding Phase IV – Custom Containers at the Temporary Emergency Housing Facility Project. THAC members agreed to make a motion, during Council Items at the next City Council meeting, that the City Council hear the item directly on July 5, 2023.

On July 5, 2023, as part of the Phase IV interim shelter facility improvements, City Council authorized the purchase of eight (8) custom container dormitories from Linked Equipment under Resolution 2023-140.

ANALYSIS

The Resolution, adopted on August 16, 2022, directed the City Manager to take immediate and emergency actions necessary to implement interim housing solutions for Tracy's unsheltered population until the completion and opening of the Temporary Emergency Housing Project on Arbor Road. As noted above, at the time of adopting Resolution No. 2022-121, the City was exploring the leasing of fully constructed modular units to locate on Arbor Road and did not anticipate undertaking additional construction activities at the site beyond what had already been completed as part of Phase I of the Temporary Emergency Housing Project. As directed, per the Resolution, the City mobilized rapidly to undertake certain activities to install the interim housing solutions and operate them with adequate health and safety protections.

Tracy Municipal Code Section 2.20.270(a), Council may dispense bidding requirements required under the Public Contract Code. The governing body must make a finding, based on substantial evidence set forth in the minutes of its meeting, that the emergency will not permit a delay resulting from a competitive solicitation for bids, and that the action is necessary to respond to the emergency. Under subsection (c)(1), the governing body shall review the emergency action at its next regularly scheduled meeting and, at every regularly scheduled meeting thereafter until the action is terminated, to determine, by a four-fifths vote, that there is a need to continue the action. The governing body shall terminate the action at the earliest possible date that conditions warrant so that the remainder of the emergency action may be completed by giving notice for bids to let contracts.

The City is currently in the process of implementing the installation and opening of the Phase IV custom containers, which will provide an additional 38 beds. In order to comply with Fire and Building Codes, the eight dormitory units must include fire sprinkler systems that require contractors with state licenses for those specialty services. Jr. Wagner, Inc. has the required licenses to design and install the fire sprinkler systems when the custom container arrives at the project site.

At the July 5, 2023, City Council meeting, staff mentioned that additional trades will be required to complete the design and installation of the fire sprinkler systems.

Due to the imminent need to provide housing solutions, the following general services agreements have been prepared to expedite installation for the Custom Containers:

Vendor	**Summary**	**Ratification Amount**	**Not to Exceed Amount**
Jr. Wagner Fire Protection Inc.	Installation of Fire Sprinklers for custom containers	$72,000	$72,000
	TOTAL	$72,000	$72,000

The above-mentioned agreement for goods and general services agreement total is $72,000 as part of this request.

FISCAL IMPACT

The City secured a grant of $1.2 Million dollars from Health Plan of San Joaquin for the costs of the custom containers and interim site expenses related to Phase III and Phase IV. Per City Council's approval of the $1.2 Million dollar grant from Health Plan of San Joaquin, below is a breakdown of the funding allocation. Funding for the contract with Jr. Wagner Fire Protection, Inc. is covered by the grant funds from Health Plan of San Joaquin.

Health Plan of San Joaquin Grant

Modulars (Phase III first year)	$120,000
Custom Containers (Phase IV)	$716,320
Operating (Supplies, Fuel) (Phase III and IV first year)	$363,680
Total Health Plan of San Joaquin Grant Funding	**$1,200,000**

CEQA DETERMINATION

Government Code section 8698.4 exempts the application of the California Environmental Quality Act (CEQA) to various actions taken by public agencies to implement the construction of a homeless shelter in response to a declared shelter crisis. In addition, the interim solutions taken thus far are in furtherance of and related to the permanent solution that will be implemented, referred to as the Temporary Emergency Housing Project on Arbor Avenue (CIP 71112). A Notice of Exemption was issued on October 16, 2020, for the Temporary Emergency Housing site at 500 Arbor Avenue in accordance with Government Code sections 65660-65662 for Low Barrier Navigation Centers and Section 15269(c) of the CEQA Guidelines (14 Cal. Code Regs. 15269(c) for (Emergency Projects). No environmental impacts beyond those already analyzed for the CIP exist; accordingly, no further CEQA analysis is needed.

STRATEGIC PLAN

This agenda item supports the Public Safety Strategic Priority, *Implement the adopted Homelessness Strategic Plan*.

ACTION REQUESTED OF THE CITY COUNCIL

The Tracy Homelessness Advisory Committee recommends that the City Council adopt a resolution (1) making a determination that compliance with standard procurement process is not in the best interest of the City and (2) approving general services agreement with Jr. Wagner Fire Protection, Inc. for design and installation of the fire sprinkler system to be installed as part of the site improvements for the Phase IV Custom Containers at the Temporary Emergency Housing Facility, CIP 71112, at 370 West Arbor Avenue.

Prepared by: Virginia Carney, Homeless Services Manager

Reviewed by: Adriana Castaneda, Director of Mobility and Housing
Sara Cowell, Director of Finance
Brian MacDonald, Interim Assistant City Manager

Approved by: Midori Lichtwardt, Interim City Manager

ATTACHMENTS
Attachment A- General Services Agreement

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ATTACHMENT A

CITY OF TRACY
GENERAL SERVICES AGREEMENT WITH
J.R. Wagner Fire Protection, Inc., of Modesto, CALIFORNIA

This General Services Agreement (**Agreement**) is entered into between the City of Tracy, a municipal corporation (**City**), and J.R. Wagner Fire Protection, a California corporation (**Contractor**). City and Contractor are referred to individually as "**Party**" and collectively as "**Parties**."

Recitals

A. City desires to enter into this Agreement with Contractor for Contractor to design and install the fire sprinkler system for the custom containers at the City's Temporary Emergency Housing Facility, Phase IV Improvements, located at 370 W. Arbor Avenue, Tracy, CA 95304 (**Project** or **Services**).

B. After negotiations between the City and Contractor, the Parties have reached an agreement for the performance of services in accordance with the terms set forth in this Agreement.

C. Pursuant to Resolution No. 2022-121, the City Council dispensed the procurement requirements for this Agreement under Tracy Municipal Code section 2.20.180, subsection (b)(4), and authorized the execution of this Agreement.

D. This Agreement is being executed pursuant to Resolution No. _____.

Now therefore, the Parties mutually agree as follows:

1. Scope of Work. At the direction of the City, Contractor shall perform the Services and complete the Project, which includes, but is not limited to, the services described in Exhibit "A" attached hereto and incorporated herein by this reference. The services shall be performed by, or under the direct supervision of, Contractor's Authorized Representative: Jr. Wagner Fire Protection, Inc. Contractor shall not replace its Authorized Representative, nor shall Contractor use or replace any subcontractors or subconsultants, without City's prior written consent. The City may terminate this Agreement if Consultant makes any such change or replacement, or uses any unapproved subcontractor or subconsultant.

2. Time of Performance. Time is of the essence in the performance of services under this Agreement and the timing requirements set forth shall be strictly adhered to unless otherwise modified in writing in accordance with this Agreement. Any services for which times for performance are not specified in this Agreement shall be started and completed by Contractor in a reasonably prompt and timely manner based upon the circumstances and direction communicated to the Contractor. Contractor shall submit all requests for time extensions to the City in writing no later than ten days after the start of the condition which purportedly caused the delay, and not later than the date on which performance is due. City may grant or deny such requests in its sole and absolute discretion.

2.1 Term. The term of this Agreement shall begin on August 15, 2023 and end on October 31, 2023, unless terminated in accordance with Section 6. Contractor shall begin providing the Services within five (5) days of the mutual execution of this Agreement.

3. Compensation. Subject to the City acceptance of the Services and completion of the Project to the City's satisfaction, City shall pay Contractor a fixed amount, at the quoted sum set forth in Exhibit "B," which is attached hereto and incorporated herein by this reference for services performed under this agreement.

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3.1 Not to Exceed Amount. Contractor's total compensation under this Agreement shall not exceed $72,000. It is understood and agreed that Consultant may not receive compensation up to this amount, and Consultant's total compensation under this Agreement will depend on the Services ultimately provided by Contractor. The City shall pay the Contractor a fixed amount, at the quoted sum outlined in Exhibit B. Notwithstanding anything contained herein to the contrary, the payment of any funds under this Agreement shall be subject to the City of Tracy's appropriation of funds for the Services. This Agreement shall terminate in the event that such funds are not appropriated.

3.2 Invoices. Contractor shall submit monthly invoices to the City that describe the services performed, including times, dates, and names of persons performing the services.

3.2.1. Contractor's failure to submit invoices in accordance with these requirements may result in the City rejecting said invoices and thereby delaying payment to Contractor.

3.3 Payment. Within 30 days after the City's receipt of invoice, City shall make payment to the Contractor based upon the services described on the invoice and approved by the City.

3.4 The acceptance by Consultant of the final payment made under this Agreement shall constitute a release of City from all claims and liabilities for compensation to Consultant for anything completed, finished or relating to Consultant's services. Consultant agrees that payment by City shall not constitute nor be deemed a release of the responsibility and liability of Consultant or its employees, subcontractors, agents and subconsultants for the accuracy and competency of the information provided and/or services performed hereunder, nor shall such payment be deemed to be an assumption of responsibility or liability by City for any defect or error in the Services performed by Consultant, its employees, subcontractors, agents and subconsultants.

3.5 Consultant agrees to maintain books, accounts, payroll records and other information relating to the performance of Consultant's obligations under the Agreement, which shall adequately and correctly reflect the expenses incurred by the Consultant in the performance of Consultant's work under the Agreement. Such books and records shall be open to inspection and audit by the City during regular business hours for three years after expiration or termination of this Agreement.

4. <u>Indemnification</u>. Contractor shall, to the fullest extent permitted by law, indemnify, defend (with independent counsel approved by the City), and hold harmless the City from and against any claims arising out of Contractor's performance or failure to comply with obligations under this Agreement, except to the extent caused by the sole, active negligence or willful misconduct of the City.

In the event there is a finding and/or determination that Consultant is not an independent contractor and/or is an employee of City, including but not limited to any such finding and/or determination made by the California Public Employees' Retirement System (CalPERS), the Department of Industrial Relations (DIR), or the Internal Revenue Service (IRS), Consultant shall, to the fullest extent permitted by law, indemnify, defend, and hold harmless the City from and against any all claims relating to or in connection with such a finding and/or determination.

In this section, "City" means the City, its officials, officers, agents, employees and volunteers; "Contractor" means the Contractor, its employees, agents and subcontractors; "Claims" includes claims, demands, actions, losses, damages, injuries, and liability, direct or indirect (including any and all related costs and expenses) and any allegations of these; and "Arising out of" includes "pertaining to" and "relating to".

Consultant and City mutually waive consequential damages for claims, disputes, or other matters in question, arising out of or relating to this Agreement. This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination of this Agreement.

The provisions of this section survive completion of the services or the termination of this Agreement, and are not limited by the provisions of Section 5 relating to insurance.

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5. Insurance. Contractor shall, throughout the duration of this Agreement, maintain insurance to cover Contractor, its agents, representatives, and employees in connection with the performance of services under this Agreement at the minimum levels set forth herein.

5.1 Commercial General Liability (with coverage at least as broad as ISO form CG 00 01 01 96) "per occurrence" coverage shall be maintained in an amount not less than $4,000,000 general aggregate and $2,000,000 per occurrence for general liability, bodily injury, personal injury, and property damage.

5.2 Automobile Liability (with coverage at least as broad as ISO form CA 00 01 07 97, for "any auto") "claims made" coverage shall be maintained in an amount not less than $1,000,000 per accident for bodily injury and property damage.

5.3 Workers' Compensation coverage shall be maintained as required by the State of California.

5.4 Professional Liability "claims made" coverage shall be maintained to cover damages that may be the result of errors, omissions, or negligent acts of Contractor in an amount not less than $1,000,000 per claim.

5.5 Endorsements. Contractor shall obtain endorsements to the automobile and commercial general liability insurance policies with the following provisions:

5.5.1 The City (including its elected officials, officers, employees, agents, and volunteers) shall be named as an additional "insured."

5.5.2 For any claims related to this Agreement, Contractor's coverage shall be primary insurance with respect to the City. Any insurance maintained by the City shall be excess of the Contractor's insurance and shall not contribute with it.

5.6 Notice of Cancellation. Contractor shall notify the City if the policy is canceled before the expiration date. For the purpose of this notice requirement, any material change in the policy prior to the expiration shall be considered a cancellation. Contractor shall immediately obtain a replacement policy.

5.7 Authorized Insurers. All insurance companies providing coverage to Contractor shall be insurance organizations authorized by the Insurance Commissioner of the State of California to transact the business of insurance in the State of California.

5.8 Insurance Certificate. Contractor shall provide evidence of compliance with the insurance requirements listed above by providing a certificate of insurance and endorsements, in a form satisfactory to the City, before the City signs this Agreement.

5.9 Substitute Certificates. Contractor shall provide a substitute certificate of insurance no later than 30 days prior to the policy expiration date of any insurance policy required by this Agreement.

5.10 Contractor's Obligation. Maintenance of insurance by the Contractor as specified in this Agreement shall in no way be interpreted as relieving the Contractor of any responsibility whatsoever (including indemnity obligations under this Agreement), and the Contractor may carry, at its own expense, such additional insurance as it deems necessary. Failure to provide or maintain any insurance policies or endorsements required herein may result in the City terminating this Agreement.

6. Termination. The City may terminate this Agreement in its sole and absolute discretion by giving ten days' written notice to Contractor. Within five (5) days of such termination, Contractor shall give the City all original documents relating to the Services in Consultant's possession or control, including, without limitation, preliminary drafts and supporting documents, and any other documents prepared by Consultant pursuant to this Agreement. The City shall pay Contractor for all services satisfactorily performed in accordance with this Agreement, up to the date notice is given.

7. Dispute Resolution. If any dispute arises between the City and Contractor that cannot be settled after engaging in good faith negotiations, City and Contractor agree to resolve the dispute in accordance with the following:

7.1 Each Party shall designate a senior management or executive level representative to negotiate the dispute;

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7.2 The representatives shall attempt, through good faith negotiations, to resolve the dispute by any means within their authority.

7.3 If the issue remains unresolved after fifteen (15) days of good faith negotiations, the Parties shall attempt to resolve the disagreement by negotiations between legal counsel. If the aforementioned process fails, the Parties shall resolve any remaining disputes through mediation to expedite the resolution of the dispute.

7.4 The mediation process shall provide for the selection within fifteen (15) days by both Parties of a disinterested third person to serve as the mediator, shall be commenced within thirty (30) days of selection of a mediator, and shall be concluded within fifteen (15) days from the commencement of the mediation.

7.5 The Parties shall equally bear the costs of any third party mediator in any alternative dispute resolution process.

7.6 The dispute resolution process is a material condition to this Agreement and must be exhausted prior to either Party initiating legal action. This dispute resolution process is not intended to nor shall be construed to change the time periods for filing a claim or action specified by Government Code §§ 900 et seq.

8 Labor Code Compliance. Contractor is aware of the requirements of Chapter 1 of Part 7 of Division 2 of the California Labor Code and applicable regulations which require the payment of prevailing wage rates (§1771, §1774, and §1775); employment of apprentices (§1777.5), certified payroll records (§1776), hours of labor (§1813 and §1815), debarment of contractors and subcontractors (§1777.1) and the performance of other requirements on "public works" and "maintenance" projects. The Services being performed under this Agreement are part of a "public works" or "maintenance" project, as defined in the Prevailing Wage Laws, Contractor agrees to fully comply with such Prevailing Wage Laws.

8.1 Rates. These prevailing wage rates are on file with the City and are available online at http://www.dir.ca.gov/DLSR. Each Contractor and Subcontractor must pay no less than the specified rates to all workers employed to perform the services described herein. The schedule of per diem wages is based upon a working day of eight hours. The rate for holiday and overtime work must be at least time and one-half. Contractor assumes all responsibility for such payments and shall defend, indemnify and hold the City harmless from any and all claims made by the State of California, the Department of Industrial Relations, any subcontractor, any worker, or any other third party.

8.2 Registration with DIR. Contractor warrants that it is registered with the Department of Industrial Relations and qualified to perform the services consistent with Labor Code section 1725.5.

8.3 Monitoring. This Agreement will be subject to compliance monitoring and enforcement by the DIR, under Labor Code section 1771.4.

9. Ownership of Work. All original documents prepared by Contractor for this Agreement, whether complete or in progress, are the property of the City, and shall be given to the City at the completion of Contractor's services, or upon demand from the City. No such documents shall be revealed or made available by Contractor to any third party without the City's prior written consent.

10. Independent Contractor Status. Contractor is an independent contractor and is solely responsible for the acts of its employees or agents, including any negligent acts or omissions. Contractor is not City's employee and Contractor shall have no authority, express or implied, to act on behalf of the City as an agent, or to bind the City to any obligation, unless the City provides prior written authorization. Contractor is free to work for other entities while under contract with the City. Contractor, and its agents or employees, are not entitled to City benefits. Consultant shall be solely responsible for, and shall save the City harmless from, all matters relating to the payment of Consultant's employees, agents, subcontractors and subconsultants, including compliance with social security requirements, federal and State income tax withholding and all other regulations governing employer-employee relations. The City reserves the right to contract with other firms and/or consultants

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during the term of this Agreement to provide the City the same or similar services that Consultant is providing to the City under this Agreement. Nothing contained in this Agreement guarantees Consultant a certain amount of work, and the City may, in its sole and absolute discretion, allocate and/or delegate work to Consultant so as to satisfy the City's needs.

11. Conflicts of Interest. Contractor (including its employees, agents, and subcontractors) shall not maintain or acquire any direct or indirect interest that conflicts with the performance of this Agreement. If Contractor maintains or acquires such a conflicting interest, the City may terminate any contract (including this Agreement) involving Contractor's conflicting interest.

12. Rebates, Kickbacks, or Other Unlawful Consideration. Contractor warrants that this Agreement was not obtained or secured through rebates, kickbacks, or other unlawful consideration either promised or paid to any City official or employee. For any breach of this warranty, City shall have the right, in its sole discretion, to terminate this Agreement without liability; to pay only for the value of the work actually performed; to deduct from the contract price the value of the rebate, kickback, or other unlawful consideration; or otherwise recover the full amount of such rebate, kickback, or other unlawful consideration.

13. Notices. All notices, demands, or other communications which this Agreement contemplates or authorizes shall be in writing and shall be personally delivered or mailed to the other party to the addresses listed below. Communications shall be deemed to have been given and received on the first to occur of: (1) actual receipt at the address designated below, or (2) three working days after the deposit in the United States Mail of registered or certified mail, sent to the address designated below.

To City:

Brian MacDonald
Interim Assistant City Manager
City of Tracy
333 Civic Center Plaza
Tracy, CA 95376

With a copy to:
City Attorney
333 Civic Center Plaza
Tracy, CA 95376

To Contractor:

Jon Wagner
J.R. Wagner Fire Protection, Inc.
126 Drake Ave, Suite A
Modesto, CA 95350

14. Miscellaneous.

14.1 Standard of Care. Unless otherwise specified in this Agreement, the standard of care applicable to Contractor's services will be the degree of skill and diligence ordinarily used by reputable professionals performing in the same or similar time and locality, and under the same or similar circumstances.

14.2 Amendments. This Agreement may not be modified orally or in any manner other than by an agreement in writing signed by both Parties.

14.3 Waivers. Waiver of a breach or default under this Agreement shall not constitute a continuing waiver or a waiver of a subsequent breach of the same or any other provision of this Agreement. No waiver shall be effective unless it is in writing and signed by the waiving party.

14.4 Assignment and Delegation. Contractor may not assign, transfer or delegate this Agreement or any portion of it without the City's prior written consent. Any attempt to do so will be void.

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City's consent to one assignment, transfer or delegation shall not be deemed to be a consent to any subsequent assignment, transfer or delegation.

14.5 Jurisdiction and Venue. The interpretation, validity, and enforcement of the Agreement shall be governed by and construed under the laws of the State of California. Any suit, claim, or legal proceeding of any kind related to this Agreement shall be filed and heard in a court of competent jurisdiction in the County of San Joaquin.

14.6 Compliance with the Law. Contractor shall comply with all applicable local, state, and federal laws, whether or not those laws are expressly stated in this Agreement.

14.6.1 Hazardous Materials. Contractor is responsible for all costs of clean up and/or removal of hazardous and toxic substances spilled as a result of performing their services.

14.6.2 Non-discrimination. Contractor represents and warrants that it is an equal opportunity employer and it shall not discriminate against any subcontractor, employee or applicant for employment because of race, religion, color, national origin, handicap, ancestry, sex or age. Contractor shall also comply with all applicable anti-discrimination federal and state laws, including but not limited to, the California Fair Employment and Housing Act (Gov. Code 12990 (a-f) et seq.).

14.7 Business Entity Status. Contractor is responsible for filing all required documents and/or forms with the California Secretary of State and meeting all requirements of the Franchise Tax Board, to the extent such requirements apply to Contractor. By entering into this Agreement, Contractor represents that it is not a suspended corporation. If Contractor is a suspended corporation at the time it enters this Agreement, City may take steps to have this Agreement declared voidable.

14.8 Business License. Before the City signs this Agreement, Contractor shall obtain a City of Tracy Business License. Contractor shall maintain an active City of Tracy Business License during the term of this Agreement.

14.9 Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the Parties hereto and their respective successors and assigns.

14.10 Construction of Agreement. Each Party hereto has had an equivalent opportunity to participate in the drafting of this Agreement and/or to consult with legal counsel. Therefore, the usual construction of an agreement against the drafting Party shall not apply hereto.

14.11. **Severability.** If a term of this Agreement is held invalid by a court of competent jurisdiction, the Agreement shall be construed as not containing that term, and the r**e**mainder of this Agreement shall remain in effect.

14.12 Controlling Provisions. In the case of any conflict between the terms of this Agreement and the Exhibits hereto, and Contractor's proposal (if any), the Agreement shall control. In the case of any conflict between the Exhibits hereto and the Contractor's proposal (if any), the Exhibits shall control.

14.13 Entire Agreement. This Agreement and the attached Exhibits comprise the entire integrated understanding between the Parties concerning the services to be performed. This Agreement supersedes all prior negotiations, representations or agreements. All exhibits attached hereto are incorporated by reference herein.

14.14 Counterparts. City and Consultant agree that this Agreement may be executed in two or more counterparts, each of which shall be deemed an original.

14.15 Expenses for Enforcement. Consultant and City agree that the prevailing party's reasonable costs, attorneys' fees and expenses, including investigation fees and expert witness fees, shall be paid by the non-prevailing party in any dispute involving the terms and conditions of this Agreement.

15. <u>Signatures</u>. The individuals executing this Agreement on behalf of Contractor represent and warrant that they have the right, power, legal capacity and authority to enter into and to execute this Agreement on behalf of Contractor.

[SIGNATURES ON FOLLOWING PAGE]

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The Parties agree to the full performance of the terms set forth here.

City of Tracy

By: Nancy D. Young
Title: Mayor
Date: _____

Attest:

Adrianne Richardson, City Clerk

Approved as to form:

Bijal M. Patel, City Attorney

J.R. Wagner, Inc.

DocuSigned by:
Jon Wagner
81614D851B26456...

By: Jon Russell Wagner
Title: Chief Executive Officer
Date: 8/4/2023 | 2:22 PM PDT

Federal Employer Tax ID No. 45-4283762

DocuSigned by:
Kristen Zurilgen
68CBD20DECE6449...

By: Kristen Zurilgen
Title: Accounting Manager
Date: 8/4/2023 | 2:32 PM PDT

Exhibits:

A	Scope of Work
B	Compensation

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EXHIBIT A - Scope of Work

Contractor will provide design and installation of the fire sprinkler system from the City installed water services to the fire riser connected to interior of the custom containers at the City's Temporary Emergency Housing Facility, Phase IV Custom Containers, located at 370 W. Arbor Avenue, Tracy, CA 95304.The Contractor will also test the system for compliance with applicable codes.

J.R. WAGNER Fire Protection, Inc.

Exhibit A

GENERAL TERMS AND CONDITIONS

INSTALLATION: The installation for the above listed project has been estimated assuming the responsible owner, general contractor, or project manager ("Customer"), will allow JRW's field installers enough time to install the work listed in scope of work without letting the other subcontractors on the project make it difficult and bury areas of work. All sprinkler work listed must be inspected and approved by the local AHJ prior to covering ceilings and walls. If ceilings and walls do get covered prior to an Authority Having Jurisdiction ("AHJ") inspection, it will NOT be the responsibility of JRW to remove and replace coverings.

PERMITS/FEES: JRW will be responsible for obtaining permits at submittal of fire sprinkler plans for deferred permit. With every AHJ having a different fee schedule, once JRW obtains permit and pays the required fees, JRW has included a "not to exceed" permit fee in this quote. Once we apply and pay for the permit, if the fees exceed the amount listed on page 1, we will send a separate invoice for the excess fees.

SCHEDULING AND CONTRACT COMPLETION: JRW's bid price was prepared under the assumption that the project and other professionals will be scheduled to allow JRW sufficient time to perform its services. Once we are awarded a new project, we rely on the owner and/or the general contractor to provide proper start dates, design documentation for the deferred submittal, schedules of completion, communication and project management required for us to have a successful project without delays from lack of communication. From the time we are under contract for this project, it is up to the owner or general contractor to let us know start dates, trade completions and finish dates in order to manage this project correctly. We will not take responsibility for lack of communication and the lack of trade scheduling. If JRW is forced to demobilize from the project and then return, due to a failure in scheduling, additional fees and costs incurred by JRW will be assessed.

CHANGE ORDERS: JRW will request a change order when there are any change orders to the original scope of work. JRW recommends any addendums or changes be addressed during our fire sprinkler design as it is less expensive to do so at that time. If it is addressed during design, a signed and approved change order will be required for our design team to move forward. When a change order is issued, JRW will charge for additional as-built design, labor, material, administration fees, 10% overhead and 10% profit unless specified different in the bid documents provided. No work can proceed, even with clash of schedule, if the change order has not been approved and signed by the owner or general contractor, or other authorized signor. Any change order that requires JRW to return to the job-site after de-mobilizing from a project shall include expenses for a minimum of four (4) man hours, regardless of actual time spent on site.

FORCE MAJUERE/MATERIAL ESCALATION: Our contract and bid prices may change due to significant unforeseen cost increases on raw material such as steel, CPVC, PVC, copper, brass, ductile iron and other materials used in the fire sprinkler system that is proposed. In such cases, JRW may request an equitable adjustment in the form of a change order if this Force Majeure and/or price escalation occurs after an executed contract is completed between JRW and the awarding general contractor, owner or owner's representative. The amount of the increase will be capped at 5% of the total bid and contract price.

PROGRESS PAYMENTS: Progress payments billed out from JRW must be paid no later than 10 days from the date of invoice. Exceeding 15 days will force JRW to de-mobilize from the project which will result in additional fees in order to re-mobilize and may require contract re-negotiation if a breach has been declared. All progress percentages include overhead and profit. We will send a company issued "Schedule of Values" with progress billing to show how we have calculated our billing invoices. If any payment is not received by JRW within 10 days of billing, JRW shall add a late fee in the amount of five percent (5%) of the invoice amount. In the event that any check or other instrument of payment is dishonored for any reason, JRW will assess an additional fee of $50, in addition to the late fee indicated above. Interest shall accrue at a rate of 10% per year on any unpaid outstanding balance.

DEFAULT, BREACH AND TERMINATION: JRW reserves the right to declare Customer in default in this Agreement, in the event of Customer's failure to timely make progress payments or to schedule the project in a timely manner. JRW shall notify Customer of the default in writing. If Customer fails to cure the default within ten (10) days of the notice of default, JRW may declare Customer in breach and may terminate this Agreement. In the event of such termination due to Customer's breach, JRW reserves the right to collect all amounts due, including the termination and late fees set forth in this Agreement.

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TERMINATION FEE: By signing this document, the Customer agrees to all terms listed within this document. It is a legal contract that binds the signee to having J.R. Wagner Fire Protection, Inc. perform all work listed within the scope of work section and excludes all work listed in the exclusions section. If the Customer signs this document than cancels work, the Customer agrees to pay the costs accrued thus far and will be required to pay the projected 20% profit upon cancellation in which will pay for any loss J.R. Wagner Fire Protection, Inc. will face by committing to this project.

CLOSEOUT DOCUMENTS: JRW will release all closeout documents to the owner or the general contractor, once all billings cycles have been paid including all approved change orders, less the amount due for retention. Once all billings are satisfied, JRW will release as-built drawings, warranty, operation & maintenance manual and other documents needed to close out the project. All closeout documents, (as-built drawings, warranty, operation & maintenance manual), will be supplied to owner or general contractor in a PDF format only.

WARRANTY: JRW will provide the owner with a (1) year warranty on craftsmanship and material used to install the new fire sprinkler system. An extended warranty is available, up to two (2) years; providing the owner agrees to have JRW provide all inspections required by NFPA 25 2013 Edition, owner's insurance company and AHJ.

MECHANICS LIEN: JRW reserves the right to file a mechanics lien for its improvement services to the Property, in order to enforce its payment rights.

INDEMNITY: The customer agrees to indemnify, hold harmless and defend J.R. Wagner Fire Protection, Inc. against any and all losses, damages, costs and expenses including reasonable defense costs, arising from any and all third party claims for personal injury, death, property damage or economic loss, arising in any way from any act or omission of the customer or J.R. Wagner Fire Protection, Inc. relating in any way to this agreement, including but not limited to the work under this agreement, whether such claims are based upon contract, warranty, tort (including but not limited to active or passive negligence), strict liability or otherwise.

INSURANCE: Customer confirms that it shall secure and keep in place insurance for personal injury and property damage at all times that JRW is performing services on Customer's property. It is understood and agreed by the customer that J.R. Wagner Fire Protection, Inc. is not an insurer and that insurance covering personal injury and property damage on the customer's premises shall be obtained by the customer; that the customer agrees to look exclusively to the customer's insurer to recover for injuries or damage in the event of any loss or injury.

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EXHIBIT B – Compensation

This Agreement shall begin on August 15, 2023 and end on October 31,2023, with a not to exceed amount of $72,000. The City shall pay the Contractor a fixed amount, at the quoted sum set forth on the attached proposal. Contractor's fixed fee will shall cover all costs and expenses for Contractor's performance of this Agreement.

PROPOSAL AND CONTRACT

J.R. WAGNER FIRE PROTECTION, INC.
P.O. BOX 5037, MODESTO, CA 95350
Bus: 888-325-8544 ❖ Fax: 877-232-8944

August 3, 2023

PROJECT: Temporary Emergency Housing
ADDRESS: 370 W. Arbor Ave Tracy, Ca
REQUESTED BY: General Contractor
ESTIMATOR: Daryl Williams

TYPE OF SYSTEM: New Automatic Wet Fire Sprinkler System NFPA 13
PROJECT TYPE: Public Commercial, Prevailing Wage Rates
ADDENDUMS: 0
BASE BID: $72,000.00
PERMITS: Owner pays

Department of Industrial Relations (DIR): **1000001930**
Small Business Enterprise (SBE): **#2006395**

SCOPE OF WORK: Design and Install new wet fire sprinkler systems for 8 buildings as per the bid documents provided. Work shall start 6" AFF at underground provided by other. NO underground work is included in this price. All piping shall be designed and installed on the outside of the building. Sprinkler heads shall be side wall type 401. Each system will have a control valve and flow switch. This quote includes labor paid to comply with local prevailing wage rates and/or Davis – Bacon wages, material specifically listed in spec section for this scope of work, equipment, management, layout, testing, inspections, finish work and all necessary closeout documentation for a legal and operational fire sprinkler system(s) complying with NFPA 13 and building codes. Since this is designed by a third party, and not a design/build project, we will supply shop drawings and material submittals. JRW design team will utilize the shop drawing process to confirm the fire sprinkler drawings comply with NFPA 13.

FIRE SPRINKLER FITTER CERTIFICATES AND CASFA APPRENTICE PROGRAM: Cal-Fire, Office of the California State Fire Marshal has made it a requirement for all fire sprinkler foreman, journeyman and apprentices to retrieve a certificate to allow installations, modifications, testing and maintenance. All of our foreman and journeyman have been certified and hold proper certification cards. All of our apprentices are enrolled in the CAFSA Apprentice Program so all of our employees meet any skilled labor requirements.

INCLUDED ITEMS: JRW will include all labor, material, equipment and components to complete the specified installation to meet NFPA 13 minimum requirements. All sprinkler heads to be Victaulic or equal. If CPVC pipe can be used in place of steel pipe to meet NFPA 13 and local AHJ requirements, we will use as needed.

EXCLUDED ITEMS: JRW will exclude the following: install labor and material,additional insurance in excess of JRW's coverage limits, waiver of subrogation, hard copy of closeout documents, notarized documents, fire alarm system, components for fire alarm system, fire alarm permit, electrical work, low voltage work, fire caulking, access panels, layout/coordination of other trades, exterior overhangs under 4' 0" wide, custom color escutcheons, any underground work including 5 foot out unless specified in scope of work listed above, sewer for main drain, fire pump, jockey pump, concrete pad, concrete pad, electrical or fire alarm for fire pump and controllers, schedule 40 pipe, domestic material, galvanized pipe, seamless pipe, copper pipe, stainless steel pipe, back flow preventer, fire hydrants, kitchen hood systems, 3D design unless BIM is specified in scope of work, in - rack fire sprinklers, water municipality or EBMUD applications and paperwork, x-ray of concrete walls/decks, overtime hours, weekend hours, night hours, holiday hours, patching, painting, painting of pipe, labeling on pipe, concrete core drilling, blocking, provide wood for blocking, cutting of blocking, installation of blocking due to lack of structure for hanging fire sprinkler piping, concrete removal, concrete patching, asphalt removal, asphalt patching and any AHJ requirements exceeding NFPA 13R minimum requirements. This quote only includes the design of the underground piping only if listed above in the scope of work section. If we are asked to perform design, we have a $1,500.00 minimum charge for such design.

PLEASE READ THIS TO AVOID ANY SCHEDULE OR PROJECT DELAYS

ENGINEERING: JRW will use the approved architectural, structural and civil drawings in form of CAD (DWG) background files and a full set of PDF drawings and specifications, (if applicable), to supply the AHJ with the most accurate fire sprinkler drawings for the deferred fire sprinkler permit. If any construction drawings or documents are not supplied during fire sprinkler design stage, it can cause unnecessary and costly delays during the field installation. JRW requests the responsible owner or general contractor, which awarded the above listed

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project to JRW, supply requested plans, files and documents within (10) business days of awarding contract; otherwise, delays in design may occur. Once we receive the listed dwg and pdf files, it will take up to 10 – 30 days to produce plans for permit depending on the project.

JRW will begin billing as soon as the fire design is complete and ready for submittal. In acceptance of this quote, please send a full set of pdf drawings (Civil – Architectural – Mechanical – Plumbing – Structural - Pre -Designed Fire Sprinkler (If it's not a Design/Build project. The CAD files needed are as follows, Cover Sheet - Site Utility - Floor Plan - Reflected Ceiling Plan – Mechanical - Structural Framing - Roof Plan - Building Section Plan. If more is needed, we will contact the GC and/or Owner. The files listed will get the fire sprinkler design started. GC and/or Owner is responsible for supplying fire hydrant data from Local AHJ or Water Department. If a fire pump is the property supplying water, a full pump report is required. Please send all files requested to the following email addresses. cathy@jrwagnerfire.com & steven@jrwagnerfire.com

OTHER TRADES REQUIRED: Please be aware that other trades are required to complete a fully operational fire sprinkler system. We will supply the fire bell, weatherproof box, riser tamper switches and any other component required that is on the actual fire sprinkler riser. A fire alarm subcontractor and/or electrician is needed to hook up fire alarms and to hook up the fire bell, the flow switch and any other tamper switches required by local Authority Having Jurisdiction. If JRW has not been contracted to perform the underground fire main to the building, then we are not responsible for OS&Y tamper switches on the back flow preventor or the P.I.V. tamper switch. Plumbers may need to supply a waste pipe for drain relief if required. Concrete pads may be required for certain fire pumps and jockey pumps. All of these subcontractors will not be supplied by J.R. Wagner Fire Protection, Inc. as it is the responsibility of the project owner or project representative.

SUBJECT TO GENERAL TERMS AND CONDITIONS: This bid and any resulting contract are subject to J.R. Wagner's General Terms and Conditions (2 pages) a copy of which is attached to this bid proposal as Exhibit "A".

BID IS OFFER TO CONTRACT: This bid is an offer to enter into a contract. Client can accept this bid by signing below and accepting the offer to create a binding contract, but may not make any changes. No changes to this document are binding on J.R. Wagner unless or until accepted in writing by J.R. Wagner.

ACCEPTANCE: By signing below, the owner or general contractor agrees to the price, terms and policies of this two (2) page quote and the attached General Terms and Conditions. Please complete the information below, so we can have accurate contact information. Please print, sign and return to Jon Wagner at jon@jrwagnerfire.com. 209-505-9091.

By: J.R. Wagner Fire Protection

Jon Wagner, President

Signature | Printed Name | Title | Date

Company Name/Contact | Billing Address | City | State | Zip

Email Address | Office Telephone # | Cellular Telephone #

APPROVED AS TO FORM AND LEGALITY

_____
CITY ATTORNEY'S OFFICE

TRACY CITY COUNCIL

RESOLUTION NO. _____

APPROVING, PURSUANT TO TRACY MUNICIPAL CODE SECTION 2.20.180(B)(1), GENERAL SERVICES AGREEMENTS WITH JR. WAGNER FIRE PROTECTION, INC. IN A NOT-TO-EXCEED AMOUNT OF $72,000

WHEREAS, the City of Tracy, like many cities across California, is experiencing a shelter crisis; and

WHEREAS, on March 10, 2020, the City Council declared a shelter crisis through the adoption of Resolution 2020-052; and

WHEREAS, under the shelter crisis, the City is authorized to provide emergency housing, shelters, bridge housing communities, and other services to the unsheltered; and

WHEREAS, on September 1, 2020, the City Council authorized the creation of a Capital Improvement Project for the Temporary Emergency Housing Project on Arbor Avenue, CIP 71112 (Project) to create a safe and dignified facility for residents experiencing homelessness (Facility); and

WHEREAS, the City desires to provide interim housing solutions until the completion and opening of the City's Facility; and

WHEREAS, Government Code section 8698.4 exempts the application of the California Environmental Quality Act (CEQA) to various actions taken by public agencies to implement the construction of a homeless shelter in response to a declared shelter crisis; and

WHEREAS, a Notice of Exemption was issued on October 16, 2020, for the Temporary Emergency Housing (Facility) site at 500 Arbor Avenue in accordance with Government Code sections 65660-65662 for Low Barrier Navigation Centers and Section 15269(c) of the CEQA Guidelines (14 Cal. Code Regs. 15269(c) for (Emergency Projects); and

WHEREAS, on August 16, 2022, the City Council approved Resolution 2022-121 and directed the City Manager to take immediate and emergency actions necessary to implement interim housing solutions for Tracy's unsheltered until the completion and opening of the Facility, including negotiating with potential service providers and identifying potential sites for such interim housing solutions; and

WHEREAS, Tracy Municipal Code Section 2.20.270(a) states that Council may dispense bidding requirements required under the Public Contract Code. The governing body must make a finding, based on substantial evidence set forth in the minutes of its meeting, that the emergency will not permit a delay resulting from a competitive solicitation for bids, and that the action is necessary to respond to the emergency. Under subsection (c)(1), the governing body shall review the emergency action at its next regularly scheduled meeting and, at every regularly scheduled

meeting thereafter until the action is terminated, to determine, by a four-fifths vote, that there is a need to continue the action. The governing body shall terminate the action at the earliest possible date that conditions warrant so that the remainder of the emergency action may be completed by giving notice for bids to let contracts; and

WHEREAS, The Tracy Homelessness Advisory Committee heard this item on June 15, 2023 and recommended that the City Council adopt the proposed Resolution; and

WHEREAS, on July 5, 2023, City Council authorized the purchase of eight (8) custom container dormitories from Linked Equipment under Resolution 2023-140 for installation as part of Phase IV interim facilities, and

WHEREAS, at the July 5, 2023 City Council meeting, staff mentioned that additional trades will be required to complete the design and installation of the fire sprinkler systems; now, therefore, be it

RESOLVED: That the City Council finds and determines the foregoing recitals to be true and correct and hereby makes them a part of this Resolution; and be it

FURTHER RESOLVED: That the City Council makes the determination, in accordance with Tracy Municipal Code Section 2.20.270(a), that compliance with standard procurement process is not in the best interest of the City; and

FURTHER RESOLVED: That the City Council hereby approves general services agreements with Jr. Wagner Fire Protection, Inc. in the not-to-exceed amount of $72,000; and

FURTHER RESOLVED: The City Council, based on its own independent investigation and judgment, finds that no further analysis under the California Environmental Quality Act (CEQA) for the actions authorized herein because: 1) Government Code section 8698.4 exempts the application of the to various actions taken by public agencies to implement the construction of a homeless shelter in response to a declared shelter crisis; 2) the interim solutions taken thus far are in furtherance of and related to the permanent solution that will be implemented, referred to as the Temporary Emergency Housing Project on Arbor Avenue (CIP 71112); 3) A Notice of Exemption was issued on October 16, 2020 for the Temporary Emergency Housing site at 500 Arbor Avenue in accordance with Government Code sections 65660-65662 for Low Barrier Navigation Centers and Section 15269(c) of the CEQA Guidelines (14 Cal. Code Regs. 15269(c) for (Emergency Projects); and 4) No environmental impacts beyond those already analyzed for the CIP exist.

* * * * * * * * * * * * * *

The foregoing Resolution 2023-_____ was adopted by the Tracy City Council on September 5, 2023, by the following vote:

AYES:	COUNCIL MEMBERS:
NOES:	COUNCIL MEMBERS:
ABSENT:	COUNCIL MEMBERS:
ABSTENTION:	COUNCIL MEMBERS:

_____
NANCY D. YOUNG
Mayor of the City of Tracy, California

ATTEST:_____
ADRIANNE RICHARDSON
City Clerk and Clerk of the Council of the
City of Tracy, California

September 5, 2023

Agenda Item 1.M

RECOMMENDATION

Staff recommends that the City Council authorize staff to execute a change order that exceeds the original authorized contingency in the amount of $92,600 for additional work to the Temporary Traffic Signal at Corral Hollow Road and Valpico Road, CIP 72124, to be completed by Tennyson Electric, Inc., of Livermore, California.

EXECUTIVE SUMMARY

Staff has exceeded the original contingency of 15% ($56,057) and is requesting that City Council authorize Staff to execute a change order that exceeds the original contingency by $92,600. This amount includes a change order of $75,100 and soft costs of $17,500. Soft costs include construction management, design support and contingency. There is a current available budget of $94,525 available to cover this request to repair previously unknown deficiencies to the Project.

BACKGROUND AND LEGISLATIVE HISTORY

On June 15, 2023, the City Manager awarded a construction contract to Tennyson Electric, Inc., of Livermore, California, for the construction of the Project. It was awarded for $373,716 with a contingency of $56,057 and a total project cost of $485,975. The Project included the installation of a temporary traffic signal at the project intersection with wooden signal poles, signal heads and video vehicle detection.

ANALYSIS

The Project as originally designed has been completed. However, after extensive studies of the construction as designed, the intersection needs additional work to be completed. The City Engineer approved the recommendation to change the existing permissive phase operations to split-phase operations for the Project, the proposed Change Order. The recommendation includes the removal of the traffic signal heads currently installed and replacing them to permit the split-phase operation. The Change Order will help the flow of traffic until the permanent traffic signal can be installed.

The Contractor has completed all the work required per the original contract and has been asked to provide the City with a cost estimate for the Change Order to be done in accordance with the plans and specifications. The total Change Order including soft costs is $92,600. The City Engineer has inspected the new design and is recommending the change. The needed work exceeds the available construction contingency.

FISCAL IMPACT

The Temporary Traffic Signal Project, CIP 72124, is an approved Capital Improvement Project with a budget of $580,500. The total completed cost is $485,975 and was funded through the Gas Tax Fund (F245). The estimated cost of this Change Order are as follows:

A.	Construction PCO	$75,100
B.	Construction Management	$ 3,500
C.	Design Support	$ 3,500
D.	Contingency	$10,500
	Total Cost of Change Order	**$92,600**

CIP 72124 has a current available budget of $94,525 as follows:

	Budget	Cost	Balance
245 - Gas Tax	$ 580,500	$ 485,975	$ 94,525
Totals	$ 580,500	$ 485,975	$ 94,525

PUBLIC OUTREACH / INTEREST

Public Meetings were held, as were Transportation Advisory Commission (TAC) Meetings.

COORDINATION

Coordination between Transit, Police Department, Engineering and Operations, and Street Maintenance Division occurred on multiple occasions to establish this project as complete.

CEQA DETERMINATION

Ministerial Exemption, Code Section #15303 (d), New Construction.

This project is exempt pursuant to categorical exemptions per CEQA guidelines Section 15303 (d), New Construction. Water main, sewage, electrical, gas, and other utility extensions, including street improvements of reasonable length to serve such construction.

STRATEGIC PLAN

This agenda item is consistent with the City Council's adopted Quality of Life Strategy and meets the goal of enhancing the City's amenities.

ACTION REQUESTED OF THE CITY COUNCIL

Staff recommends that the City Council, by resolution authorize staff to execute a change order that exceeds the original authorized contingency in the amount of $92,600 for additional work to the Temporary Traffic Signal at Corral Hollow Road and Valpico Road, CIP 72124, to be completed by Tennyson Electric, Inc., of Livermore, California.

Prepared by: Leisser Mazariegos, Associate Engineer

Reviewed by: Koosun Kim, PE, City Engineer / Assistant Director of Development Services
Sara Cowell, Finance Director
Karin Schnaider, Assistant City Manager

Approved by: Midori Lichtwardt, Interim City Manager

APPROVED AS TO FORM AND LEGALITY

_____
CITY ATTORNEY'S OFFICE

TRACY CITY COUNCIL

RESOLUTION 2023-_____

ADOPTING A RESOLUTION AUTHORIZING STAFF TO EXECUTE A CHANGE ORDER THAT EXCEEDS THE ORIGINAL AUTHORIZED CONTINGENCY IN THE AMOUNT OF $92,600 FOR ADDITIONAL WORK TO THE TEMPORARY TRAFFIC SIGNAL AT CORRAL HOLLOW ROAD AND VALPICO ROAD, CIP 72124, FOR WORK COMPLETED BY TENNYSON ELECTRIC, INC., OF LIVERMORE, CALIFORNIA

WHEREAS, on June 15, 2023, the City Manager awarded a construction contract to Tennyson Electric, Inc., of Livermore, California, for the construction of CIP 72124, Temporary Traffic Signal at Corral Hollow Road and Valpico Road (Project); and

WHEREAS, the Project as originally designed has been completed. However, after extensive studies of the construction as designed, the intersection needs additional work to be completed; and

WHEREAS, the City Engineer approved the recommendation to change the existing permissive phase operations to split phase operations for the Project, the proposed Change Order; and

WHEREAS, the recommendation includes the removal of the traffic signal heads currently installed and replacing them to permit the split phase operation. The Change Order will help the flow of traffic until the permanent traffic signal can be installed; and

WHEREAS, the Contractor has completed all the work required per the original contract and has been asked to provide the City with a cost estimate for the Change Order to be done in accordance with the plans and specifications. The City Engineer has inspected the new design and is recommending the change; and

WHEREAS, the total cost of the change order is $92,600. This amount includes a change order of $75,100 and soft costs of $17,500. Soft costs include construction management, design support and contingency; and

WHEREAS, Staff has exhausted the originally authorized contingency of 15% ($56,057) and is requesting that City Council authorize the additional change order; and

WHEREAS, the Temporary Traffic Signal Project, CIP 7212, is an approved Capital Improvement Project with a budget of $580,500. The total completed cost is $485,975 and was funded through Fund (F245). CIP has a current available budget of $94,525; now therefore, be it

RESOLVED: That the City Council of the City of Tracy hereby adopts a resolution authorizing staff to execute a change order that exceeds the original authorized contingency in

the amount of $92,600 for additional work to the Temporary Traffic Signal at Corral Hollow Road and Valpico Road, CIP 72124, to be completed by Tennyson Electric, Inc., of Livermore, California.

* * * * * * * * * * * * * *

The foregoing Resolution 2023-_____ was adopted by the Tracy City Council on the 5th day of September 2023 by the following vote:

AYES: COUNCIL MEMBERS:
NOES: COUNCIL MEMBERS:
ABSENT: COUNCIL MEMBERS:
ABSTENTION: COUNCIL MEMBERS:

_____
NANCY D. YOUNG
Mayor of the City of Tracy, California

ATTEST: _____
ADRIANNE RICHARDSON
City Clerk and Clerk of the Council of
the City of Tracy, California

September 5, 2023

Agenda Item 1.N

RECOMMENDATION

Staff recommends that the City Council adopt a resolution approving a Professional Services Agreement with Griffin Structures for project management services for the Aquatic Center project (CIP 78054) for a total not-to-exceed amount of $760,200.

EXECUTIVE SUMMARY

The Aquatic Center (Project) has been an active project in the Parks & Recreation Capital Improvement Program (CIP) for several years. On July 5, 2023, the City Council took action to further the project by determining a project site through the adoption of a resolution accepting an irrevocable offer of dedication of fee interest for 16 acres of community park land from Ellis Village, LLC. Now that the site has been determined, the Project can move forward.

Due to limited capacity of staff because of other major capital improvement projects in various stages of development, staff is recommending the City hire a dedicated project manager for this Project.

In recent months, staff engaged on-call consultants requesting proposals for project management services for this Project. The City received one (1) proposal and two (2) consultants declined to propose. Staff from multiple City departments completed a detailed review of the proposal received and determined that Griffin Structures (Consultant) met the needs of the City and demonstrated the competence and professional qualifications necessary for the satisfactory performance of the required services.

The scope of services entails a series of pre-construction services including: project delivery analysis, design service procurement, program development, design management, monthly meetings, meetings with commissions and elected officials, peer review, master budget development, master schedule development, design management, permit coordination and bidding services (Services). The negotiated fee for the Services is a total not-to-exceed amount of $760,200, which includes a contingency of $115,200 to cover approximately six (6) months of additional services if delays were to occur during planning/design and/or other unforeseen circumstances.

This Project was previously approved by the City Council as CIP 78054 with an estimated project budget of $65 million. The costs contemplated by this Staff Report are covered by funds already appropriated and available to the Project.

This agenda item, with City Council approval, would approve a Professional Services Agreement with Griffin Structures to provide project management services for the Aquatic Center (CIP 78054) project for a not-to-exceed amount of $760,200. Griffin Structures was selected from an on-call professional services list approved by the City Council.

Staff recommends that the City Council adopt a resolution approving a Professional Services Agreement with Consultant for a total not-to-exceed amount of $760,200 for the Management Services for the new Tracy Aquatic Center (CIP 78054).

BACKGROUND AND LEGISLATIVE HISTORY

The City of Tracy and Surland Communities LLC (**Developer**) have been parties to a longstanding development agreement, dating as far back as 2009, with respect to the Surland's development of real property located within the Ellis Specific Plan. As a part of this agreement, the Developer is required to dedicate 16 acres of land within the Ellis Specific Plan through an irrevocable offer of dedication (**IOD**) to the City for the future home of an aquatics park **(Aquatic Center)** and to pay the City $10 million towards the development, construction, operation, and maintenance of the facility. Of the $10 million owed, Surland made an initial payment of $2 million to the City on September 5, 2014.

Through various tolling agreements, the parties negotiated a different location for the land dedication and extended the dates by which Surland had to grant the IOD and pay the remaining $8 Million owed. The last extended dates are reflected in that certain Fourth Agreement To Toll And Extend The Dedication Acceptance Period And The 60-Day Cure Period For The Second Swim Center Payment Under The Amended And Restated Development Agreement By And Between The City Of Tracy And Surland Communities, LLC, dated April 3, 2018 (**Fourth Tolling Agreement**).

In addition to the tolling agreements, the parties also amended the 2013 Development Agreement twice. The most recent amendment occurred in 2018, pursuant to that certain Second Amendment to the Amended and Restated Development Agreement By and Between the City of Tracy and Surland Communities, LLC, effectuated by the adoption of Ordinance 1253 by the City Council (**2018 Second Amendment to Development Agreement**). The 2018 Second Amendment to Development Agreement provided a process by which Surland could ask the City Council to exercise its legislative discretion to approve a further amendment to the 2013 Development Agreement to add additional property, which properties could be eligible for residential growth allotments under the 2013 Development Agreement. In addition, the 2018 Second Amendment to the Development Agreement revised the City's and Surland's respective responsibilities, rights, and obligations regarding the development of the Aquatic Center. A key revision the 2018 Second Amendment made was to allow Surland to assume, from the City, responsibility for the design and construction management of the Aquatic Center. The City was required to reimburse Surland for such services, from the initial $2 Million that had been paid to the City by Surland.

Mary Mitracos filed a lawsuit against the City and Surland challenging the legality of the 2018 Second Amendment to Development Agreement and the ordinance effectuating its approval by the City Council. In 2020, the San Joaquin County Superior Court entered Judgment in Ms. Mitracos' favor and issued a Peremptory Writ of Mandate (**Writ**) ordering the City (i) to rescind and set aside Ordinance 1253 and the 2018 Second Amendment to Development Agreement, (ii) not to take any action to implement the Second Amendment, and (iii) to rescind any actions that were taken to implement Ordinance 1253 and the Second Amendment. The City and Surland appealed. In May 2022, the Court of Appeal denied the appeal and affirmed the Superior Court, and in July 2022, remitted the case back to the Superior Court. In recent months, the City Council has taken various actions to implement the Writ and Judgment, as required by the court.

As part of this court-mandated process, an important action the City Council has taken is rescinding the Final Conceptual Plan for the Project that was adopted by the City Council in 2020 (Resolution 2020-154). The Conceptual Plan was approved with a not-to-exceed total project cost of $65 million, including contingency and soft costs. The committed funding for this Project is $55 million from the City and $10 million from the Developer. The Developer contribution is pursuant to the terms of the 2013 Development Agreement.

Further, following the rescinding of the Second Developer Agreement, the City now resumes control of project delivery of the Aquatic Center including design and construction.

On November 15, 2022, the City Council approved an on-call professional services list for landscape architectural, plan check, inspection, and project management services with: Callander & Associates, Griffin Structures, LPA Inc., Nuvis Landscape Architecture, O'Dell Engineering, Verde Design Inc., and WRT Inc. for a five-year term (Resolution 2022-175).

ANALYSIS

The Aquatic Center project is a complex endeavor requiring a unique understanding of various systems, products, construction methods, project delivery approaches and an overall expertise in the construction of aquatic facilities. After thorough analysis, staff is recommending that the City hire a project manager with an extensive background in the planning and development of similar facilities that will act as an owner representative from project initiation through completion.

In November of 2022, staff engaged three firms on the approved list of on-call consultants to provide professional project management services related to the development of an aquatic's facility with a total project budget of $65 million. Griffin Structures submitted a responsive proposal, while Callander Associates and O'Dell Engineering declined to submit a proposal.

Staff has negotiated a Professional Services Agreement (Exhibit 'A') with Griffin Structures. The "Not to Exceed" fee for this scope of work is $760,200. The scope of work entails a series of pre-construction services including: project delivery analysis, design service procurement, program development, design management, monthly meetings, meetings with commissions and elected officials, peer review, master budget development, master schedule development, design management, permit coordination and bidding services (Services). Once the contract is approved, Griffin Structures will assist staff in determining a project delivery method and procuring an architect through a competitive request for proposals process. Staff will return to the City Council for approval of a design contract when that procurement process is complete.

This scope of work includes a preliminary approach to the project schedule as follows:

Description	Time Frame
Task 1 – Pre-Construction	23 months

PUBLIC OUTREACH/INTEREST

This item does not require any public outreach.

COORDINATION

The Parks & Recreation Department coordinated with the City Manager's Office on the expressed need for a dedicated project manager for the Aquatic Center project.

FISCAL IMPACT

This project was previously approved by the City Council as CIP 78054. The cost of this contract is covered by funds already allocated to the project for design and construction management.

STRATEGIC PLAN

This agenda item supports the City of Tracy's Quality of Life Strategic Priority, and specifically implements the following goals:

Goal 2: Facilitate the Completion of Measure V Amenities; Objective 2: Advance Measure V amenity planning.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The Ellis Specific Plan Environmental Impact Report was prepared in accordance with the California Environmental Quality Act and related Guidelines (**CEQA**), and the City Council, on January 22, 2013, certified the ESP EIR. The ESP EIR adequately analyzed key elements of the Aquatic Center (**Project**) and identified no mitigation measures directly related to the Project. This action is for approval of a project manager, and not implementation of the Project itself. Additional discretionary actions are necessary to effectuate design and construction of the Project. As such, any additional environmental review required under CEQA will be conducted prior to any critical discretionary approvals that are required to be taken in order to implement the Project.

ACTION REQUESTED OF THE CITY COUNCIL

Staff recommends that the City Council adopt a resolution approving a Professional Services Agreement with Griffin Structures for project management services for the Aquatic Center project (CIP 78054) for a not-to-exceed amount of $760,200.

Prepared by: Richard Joaquin, Parks Planning & Development Manager

Reviewed by: Sara Cowell, Director of Finance
Brian MacDonald, Interim Assistant City Manager & Director of Parks and Recreation

Approved by: Midori Lichtwardt, Interim City Manager

ATTACHMENTS

Attachment A – Professional Services Agreement with Griffin Structures, Inc.

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CITY OF TRACY
PROFESSIONAL SERVICES AGREEMENT WITH GRIFFIN STRUCTURES, INC.
for Pre-Construction Management Services for the Aquatic Center Project

This Professional Services Agreement (**Agreement**) is entered into between the City of Tracy, a municipal corporation (**City**), and Griffin Structures, Inc., a California Corporation (**Consultant**). City and Consultant are referred to individually as "Party" and collectively as "Parties."

Recitals

A. City desires to retain Consultant to provide Pre-Construction Management services for the Aquatic Center Project ("Services"); and

B. On September 9, 2022, the City issued a Request for Proposals (RFP) for On-Call Landscape Architectural, Landscape Plan Check, Landscape Inspection, and Project Management Services (including Construction Management Services), in which proposers had the ability to select which specific services they were interested in providing. On October 13, 2022, ten proposals were submitted to the City for this RFP.

C. On November 15, 2022, pursuant to Resolution No. 2022-175, the City Council approved an on-call professional services list of consultants to provide the above services, which included Griffin Structures, Inc.

D. After negotiations between the City and Consultant, the Parties have reached an agreement for the performance of services in accordance with the terms set forth in this Agreement.

E. This Agreement is being executed pursuant to Resolution No. _____ approved by Tracy City Council on _____.

Now therefore, the Parties mutually agree as follows:

1. Scope of Work. Consultant shall perform the Services, which includes the services described in Exhibit "A" attached and incorporated by reference. Consultant shall not perform any Services until instructed by the City. The services shall be performed by, or under the direct supervision of, Consultant's Authorized Representative: **Jon Hughes.** Consultant shall not replace its Authorized Representative, nor shall Consultant replace any of the personnel listed in Exhibit "A," nor shall Consultant use or replace any subcontractor or subconsultant, without City's prior written consent. The City may terminate this Agreement if Consultant makes any such change.

2. Time of Performance. Time is of the essence in the performance of services under this Agreement and the timing requirements set forth shall be strictly adhered to unless otherwise modified in writing in accordance with this Agreement. Consultant shall begin performance, and shall complete all required services no later than the dates set forth in Exhibit "C." Any services for which times for performance are not specified in this Agreement shall be started and completed by Consultant in a reasonably prompt and timely manner based upon the circumstances and direction communicated to the Consultant. Consultant shall submit all requests for time extensions to the City in writing no later than ten days after the start of the condition which purportedly caused the delay, and not later than the date on which performance is due. City may grant or deny such requests at its sole and absolute discretion.

3. Compensation. City shall pay Consultant on a time and expense basis, at the billing rates set forth in Exhibit "B," attached and incorporated by reference for Services performed under this Agreement.

3.1 Not to Exceed Amount. Consultant's total compensation under this Agreement shall not exceed $760,200.00. Consultant's billing rates shall cover all costs and expenses for Consultant's performance of this Agreement. No work shall be performed by Consultant in excess of the total compensation amount provided in this section without the City's prior written approval. It is understood and agreed that Consultant may not receive compensation up to this amount, and Consultant's total compensation under this Agreement will depend on the scope of the Services approved by the City.

3.2 Invoices. Consultant shall submit monthly invoice(s) to the City that describe the services performed, including times, dates, and names of persons performing the services.

3.2.1 If Consultant is providing services in response to a development application, separate invoice(s) must be issued for each application and each invoice shall contain the City's designated development application number.

3.2.2 Consultant's failure to submit invoice(s) in accordance with these requirements may result in the City rejecting said invoice(s) and thereby delaying payment to Consultant.

3.3 Payment. Within 30 days after the City's receipt of invoice(s), City shall make payment to the Consultant based upon the services described on the invoice(s) and approved by the City.

3.4 The acceptance by Consultant of the final payment made under this Agreement shall constitute a release of City from all claims and liabilities for compensation to Consultant for anything completed, finished or relating to Consultant's services. Consultant agrees that payment by City shall not constitute nor be deemed a release of the responsibility and liability of Consultant or its employees, subcontractors, agents and subconsultants for the accuracy and competency of the information provided and/or services performed hereunder, nor shall such payment be deemed to be an assumption of responsibility or liability by City for any defect or error in the Services performed by Consultant, its employees, subcontractors, agents and subconsultants.

3.5 Consultant agrees to maintain books, accounts, payroll records and other information relating to the performance of Consultant's obligations under the Agreement, which shall adequately and correctly reflect the expenses incurred by the Consultant in the performance of Consultant's work under the Agreement. Such books and records shall be open to inspection and audit by the City during regular business hours for three years after expiration or termination of this Agreement.

4. Indemnification. Consultant shall, to the fullest extent permitted by law, indemnify, defend (with independent counsel approved by the City), and hold harmless the City from and against any claims arising out of Consultant's performance or failure to comply with obligations under this Agreement, except to the extent caused by the sole, active negligence or willful misconduct of the City.

In the event there is a finding and/or determination that Consultant is not an independent contractor and/or is an employee of City, including but not limited to any such finding and/or determination made by the California Public Employees' Retirement System (CalPERS), the Department of Industrial Relations (DIR), or the Internal Revenue Service (IRS), Consultant shall, to the fullest extent permitted by law, indemnify, defend, and hold harmless the City from and against any all claims relating to or in connection with such a finding and/or determination.

In this section, "City" means the City, its officials, officers, agents, employees and volunteers; "Consultant" means the Consultant, its employees, agents and subcontractors; "Claims" includes claims, demands, actions, losses, damages, injuries, and liability, direct or indirect (including any and

all related costs and expenses) and any allegations of these; and "Arising out of" includes "pertaining to" and "relating to".

(The duty of a "design professional" to indemnify and defend the City is limited to claims that arise out of, pertain to, or relate to the negligence, recklessness or willful misconduct of the design professional, under Civ. Code § 2782.8.)

Consultant and City mutually waive consequential damages for claims, disputes, or other matters in question, arising out of or relating to this Agreement. This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination of this Agreement.

The provisions of this section survive completion of the services or the termination of this Agreement and are not limited by the provisions of Section 5 relating to insurance.

5. Insurance. Consultant shall, throughout the duration of this Agreement, maintain insurance to cover Consultant, its agents, representatives, and employees in connection with the performance of services under this Agreement at the minimum levels set forth herein.

5.1 Commercial General Liability (with coverage at least as broad as ISO form CG 00 01 01 96) "per occurrence" coverage shall be maintained in an amount not less than $4,000,000 general aggregate and $2,000,000 per occurrence for general liability, bodily injury, personal injury, and property damage.

5.2 Automobile Liability (with coverage at least as broad as ISO form CA 00 01 07 97, for "any auto") "claims made" coverage shall be maintained in an amount not less than $1,000,000 per accident for bodily injury and property damage.

5.3 Workers' Compensation coverage shall be maintained as required by the State of California.

5.4 Professional Liability "claims made" coverage shall be maintained to cover damages that may be the result of errors, omissions, or negligent acts of Consultant in an amount not less than $1,000,000 per claim.

5.5 Endorsements. Consultant shall obtain endorsements to the automobile and commercial general liability insurance policies with the following provisions:

5.5.1 The City (including its elected officials, officers, employees, agents, and volunteers) shall be named as an additional "insured."

5.5.2 For any claims related to this Agreement, Consultant's coverage shall be primary insurance with respect to the City. Any insurance maintained by the City shall be excess of the Consultant's insurance and shall not contribute with it.

5.6 Notice of Cancellation. Consultant shall notify the City if the policy is canceled before the expiration date. For the purpose of this notice requirement, any material change in the policy prior to the expiration shall be considered a cancellation. Consultant shall immediately obtain a replacement policy.

5.7 Authorized Insurers. All insurance companies providing coverage to Consultant shall be insurance organizations authorized by the Insurance Commissioner of the State of California to transact the business of insurance in the State of California.

5.8 Insurance Certificate. Consultant shall provide evidence of compliance with the insurance requirements listed above by providing a certificate of insurance and endorsements, in a form satisfactory to the City, before the City signs this Agreement.

5.9 Substitute Certificates. Consultant shall provide a substitute certificate of insurance no later than 30 days prior to the policy expiration date of any insurance policy required by this Agreement.

5.10 Consultant's Obligation. Maintenance of insurance by the Consultant as specified in this Agreement shall in no way be interpreted as relieving the Consultant of any responsibility whatsoever (including indemnity obligations under this Agreement), and the Consultant may carry, at its

own expense, such additional insurance as it deems necessary. Failure to provide or maintain any insurance policies or endorsements required herein may result in the City terminating this Agreement.

6. Termination. The City may terminate this Agreement in its sole and absolute discretion by giving ten (10) days' written notice to Consultant. Within five (5) days of such a termination, Consultant shall give the City all original documents relating to the Services in Consultant's possession or control, including, without limitation, preliminary drafts and supporting documents, and any other documents prepared by Consultant pursuant to this Agreement. The City shall pay Consultant for all services satisfactorily performed in accordance with this Agreement, up to the date notice is given.

7. Dispute Resolution. If any dispute arises between the City and Consultant that cannot be settled after engaging in good faith negotiations, City and Consultant agree to resolve the dispute in accordance with the following:

7.1 Each Party shall designate a senior management or executive level representative to negotiate the dispute;

7.2 The representatives shall attempt, through good faith negotiations, to resolve the dispute by any means within their authority.

7.3 If the issue remains unresolved after fifteen (15) days of good faith negotiations, the Parties shall attempt to resolve the disagreement by negotiations between legal counsel. If the aforementioned process fails, the Parties shall resolve any remaining disputes through mediation to expedite the resolution of the dispute.

7.4 The mediation process shall provide for the selection within fifteen (15) days by both Parties of a disinterested third person to serve as the mediator, shall be commenced within thirty (30) days of selection of a mediator and shall be concluded within fifteen (15) days from the commencement of the mediation.

7.5 The Parties shall equally bear the costs of any third party mediator in any alternative dispute resolution process.

7.6 The dispute resolution process is a material condition to this Agreement and must be exhausted prior to either Party initiating legal action. This dispute resolution process is not intended to nor shall be construed to change the time periods for filing a claim or action specified by Government Code §§ 900 et seq.

8. Ownership of Work. All original documents prepared by Consultant for this Agreement, whether complete or in progress, are the property of the City, and shall be given to the City at the completion of Consultant's Services, upon the termination of this Agreement, or upon demand from the City. No such documents shall be revealed or made available by Consultant to any third party without the City's prior written consent. Should the City reuse any of the instruments outside of the project, they do so at their own risk.

9. Independent Contractor Status. Consultant is an independent contractor and is solely responsible for the acts of its employees or agents, including any negligent acts or omissions. Consultant is not City's employee and Consultant shall have no authority, express or implied, to act on behalf of the City as an agent, or to bind the City to any obligation, unless the City provides prior written authorization. Consultant is free to work for other entities while under contract with the City. Consultant, and its agents or employees, are not entitled to City benefits. Consultant shall be solely responsible for, and shall save the City harmless from, all matters relating to the payment of Consultant's employees, agents, subcontractors and subconsultants, including compliance with social security requirements, federal and State income tax withholding and all other regulations governing employer-employee relations.

9.1 **Non-Exclusive Professional Services Agreement**. The City reserves the right to contract with other firms and/or consultants during the term of this Agreement to provide the City the same or similar services described in Exhibit A. Nothing contained in this Agreement guarantees Consultant a certain amount of work, and the City may, in its sole and absolute discretion, allocate and/or delegate work to Consultant so as to satisfy the City's needs.

10. Conflicts of Interest. Consultant (including its employees, agents, and subconsultants) shall not maintain or acquire any direct or indirect interest that conflicts with the performance of this Agreement. If Consultant maintains or acquires such a conflicting interest, the City may terminate any contract (including this Agreement) involving Consultant's conflicting interest.

11. Rebates, Kickbacks, or Other Unlawful Consideration. Consultant warrants that this Agreement was not obtained or secured through rebates, kickbacks, or other unlawful consideration either promised or paid to any City official or employee. For any breach of this warranty, City shall have the right, in its sole discretion, to terminate this Agreement without liability; to pay only for the value of the work actually performed; to deduct from the contract price the value of the rebate, kickback or other unlawful consideration; or otherwise recover the full amount of such rebate, kickback, or other unlawful consideration.

12. Notices. All notices, demands, or other communications which this Agreement contemplates or authorizes shall be in writing and shall be personally delivered or mailed to the other party to the addresses listed below. Communications shall be deemed to have been given and received on the first to occur of: (1) actual receipt at the address designated below, or (2) three working days after the deposit in the United States Mail of registered or certified mail, sent to the address designated below.

To City:
City of Tracy
Attention Richard, Joaquin
333 Civic Center Plaza
Tracy, CA 95376

To Consultant:
Griffin Structures, Inc.
Attention: Jon Hughes
1 Technology Drive Suite I829
Irvine, CA 92618

With a copy to:
City Attorney
333 Civic Center Plaza
Tracy, CA 95376

13. Miscellaneous.

13.1 Standard of Care. Unless otherwise specified in this Agreement, the standard of care applicable to Consultant's services will be the degree of skill and diligence ordinarily used by professionals performing in the same or similar time and locality, and under the same or similar circumstances.

13.2 Amendments. This Agreement may not be modified orally or in any manner other than by an agreement in writing signed by both Parties.

13.3 Waivers. Waiver of a breach or default under this Agreement shall not constitute a continuing waiver or a waiver of a subsequent breach of the same or any other provision of this Agreement. No waiver shall be effective unless it is in writing and signed by the waiving party.

13.4 Assignment and Delegation. Consultant may not assign, transfer or delegate this Agreement or any portion of it without the City's prior written consent. Any attempt to do so will be void.

City's consent to one assignment, transfer or delegation shall not be deemed to be a consent to any subsequent assignment, transfer or delegation.

13.5 Jurisdiction and Venue. The interpretation, validity, and enforcement of the Agreement shall be governed by and construed under the laws of the State of California. Any suit, claim, or legal proceeding of any kind related to this Agreement shall be filed and heard in a court of competent jurisdiction in the County of San Joaquin.

13.6 Compliance with the Law. Consultant shall comply with all applicable local, state, and federal laws, whether or not those laws are expressly stated in this Agreement.

13.6.1 Prevailing Wage Laws. Consultant is aware of the requirements of California Labor Code Section 1720, et seq., and 1770, et seq., as well as California Code of Regulations, Title 8, Section 16000, et seq., ("Prevailing Wage Laws"), which require the payment of prevailing wage rates; employment of apprentices (§ 1777.5), certified payroll records (§1776), hours of labor (§1813 and §1815), debarment of contractors and subcontractors (§1777.1) and the performance of other requirements on "public works" and "maintenance" projects. If the services being performed under this Agreement are part of a "public works" or "maintenance" project, as defined in the Prevailing Wage Laws, and if the total compensation is $1,000 or more, Consultant agrees to fully comply with such Prevailing Wage Laws. These prevailing rates are on file with the City and are available online at http://www.dir.ca.gov/DLSR. Consultant shall defend, indemnify and hold the City, its officials, officers, employees and agents, harmless from any and all claims, costs, penalties, or interests arising out of any failure or alleged failure to comply with the Prevailing Wage Laws.

13.6.2 Non-discrimination. Consultant represents and warrants that it is an equal opportunity employer and it shall not discriminate against any subconsultant, employee or applicant for employment because of race, religion, color, national origin, handicap, ancestry, sex or age. Consultant shall also comply with all applicable anti-discrimination federal and state laws, including but not limited to, the California Fair Employment and Housing Act (Gov. Code 12990 (a-f) et seq.).

13.7 Business Entity Status. Consultant is responsible for filing all required documents and/or forms with the California Secretary of State and meeting all requirements of the Franchise Tax Board, to the extent such requirements apply to Consultant. By entering into this Agreement, Consultant represents that it is not a suspended corporation. If Consultant is a suspended corporation at the time it enters this Agreement, City may take steps to have this Agreement declared voidable.

13.8 Business License. Before the City signs this Agreement, Consultant shall obtain a City of Tracy Business License. Consultant shall maintain an active City of Tracy Business License during the term of this Agreement.

13.9 Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the Parties hereto and their respective successors and assigns.

13.10 Construction of Agreement. Each Party hereto has had an equivalent opportunity to participate in the drafting of this Agreement and/or to consult with legal counsel. Therefore, the usual construction of an agreement against the drafting Party shall not apply hereto.

13.11 Severability. If a term of this Agreement is held invalid by a court of competent jurisdiction, the Agreement shall be construed as not containing that term, and the remainder of this Agreement shall remain in effect.

13.12 Controlling Provisions. In the case of any conflict between the terms of this Agreement and the Exhibits hereto, and Consultant's proposal (if any), the Agreement shall control. In the case of any conflict between the Exhibits hereto and the Consultant's proposal (if any), the Exhibits shall control.

13.13 Entire Agreement. This Agreement and the attached Exhibits comprise the entire integrated understanding between the Parties concerning the services to be performed. This Agreement supersedes all prior negotiations, representations or agreements. All exhibits attached hereto are incorporated by reference herein.

13.14 **Counterparts**. City and Consultant agree that this Agreement may be executed in two or more counterparts, each of which shall be deemed an original.

13.15 **Expenses for Enforcement**. Consultant and City agree that the prevailing party's reasonable costs, attorneys' fees and expenses, including investigation fees and expert witness fees, shall be paid by the non-prevailing party in any dispute involving the terms and conditions of this Agreement.

14. Signatures. The individuals executing this Agreement on behalf of Consultant represent and warrant that they have the right, power, legal capacity and authority to enter into and to execute this Agreement on behalf of Consultant.

[SIGNATURES ON FOLLOWING PAGE]

The Parties agree to the full performance of the terms set forth here.

City of Tracy
Mayor Nancy D Young

By: Nancy D. Young
Title: Mayor
Date: _____

Attest:

Adrianne Richardson, City Clerk

Approved as to form:

Bijal M. Patel, City Attorney

Consultant
Griffin Structures, Inc. a California Corporation

DocuSigned by:
Jon Hughes
EB4FB9210B9F49D...

By: Jon Hughes
Title: Executive Vice President
Dat 8/23/2023 | 8:52 AM PDT

Federal Employer Tax ID No. 33-0756139

Griffin Structures, Inc. a California Corporation

DocuSigned by:
Mark Hoglund
3BA4720AB33B49A...

By: Mark Hoglund
Title: Chief Financial Officer
Date: 8/23/2023 | 8:42 PM PDT

Exhibits:

A	Scope of Work
B	Compensation
C	Resource Allocation Chart

EXHIBIT A - Scope of Work

Staffing & Project Team

To bring the highest level of efficiency and value to the City of Tracy, Griffin Structures has assembled following team:

- **Jon Hughes** will serve as the Principal-In-Charge for the duration of the project and will provide as-needed leadership to the team to ensure a successful delivery. Key to the success of the project will be Jon's experience with large capital improvement projects for public agencies, along with his experience in Public Contract procedures. For this level of service, we have allocated 4 hours per month for a total of 96 hours of Jon's time.
- **Gary Chubb** will serve as the Project Executive throughout the project. In that role Gary will bring his extensive experience and leadership to the project team for all aspects of the project. For this level of service, we have allocated 10 hours per month, increasing to 20 hours for design reviews and GMP negotiations for a total of 360 hours of Gary's time.
- **Dustin Alamo** will serve as the Predevelopment Manager for this project, providing his unique skillset in developing facility programs, needs assessments, and the assembly of the bridging documents for a design-build delivery. For this level of service we have allocated a total of 360 hours of Dustin's time.
- **Hernan Munayco** will serve as the Sr. Program & Construction Manager for the entire duration of the project. Hernan will bring leadership to the team, establish all project management protocols, maintain all communications, and bring his considerable experience to bear including experience as an architect. For this level of service, we anticipate Hernan will average 45 hours per month, increasing to 60 hours for design reviews and GMP negotiations, for a total of 1245 hours of Hernan's time.
- **Estimating:** In an effort to provide the City with a reasonable probable cost of the project at the time of solicitation for the Design Build entity, we have included the costs associated with developing 1 cost estimate. This estimate will be based on current market trends on a cost-per-square-foot basis due to the limited nature of the design. Additionally, we will provide reviews of the DBE estimates at key design milestones (Concept, Schematic and Design Development). Our estimating team will also participate in the review of the GMP and subsequent negotiations. For this level of effort we have allocated 140 hours of estimating.
- **Circlepoint** has been included in this proposal to provide public outreach and communications services. Due the uncertainty of the scope, these costs are presented as an ALLOWANCE. Potential services offered include: researching past project related communications, establishing a project specific communications plan, developing and maintaining a project website page, developing and maintaining project related social media, community outreach, coordination of community engagement events and presentations, project branding and graphic design, maintaining community engagement and interested parties database.
- **Contingency:** To ensure the City has adequate management support for the project, this scope includes a contingency equal to the average cost per month of preconstruction services multiped by 6 months. These funds will be held in reserve unless authorized by the City for use on the project.

Scope of Work

Task 1: Preconstruction

- Project Delivery Analysis and Recommendation
- Design-Build Entity or Architect Procurement
- Program Development
- Design Management
- Monthly Team Meetings (Virtual: Bi-Weekly for 18 months)
- Meetings:
    - (4) Parks and Community Services Commission Meetings
    - (4) City Council Meetings

- (3) Peer Reviews of Cost Estimates (Concept, Schematic, Design Development and Guaranteed Maximum Price)
- Master Budget Development and Updates
- Master Schedule Development
- Design Management
- Permit Coordination
- GMP Negotiation or Contractor Bidding

Approach to Project Schedule

The scope of work assumes the following schedule and is illustrated in the Time of Performance Schedule in Exhibit 'C'.

1. Programming and Design Solicitation (7 Months)
2. Design Management and Oversight (16 Months)
   Continency of an additional 6 months of extended service depending on Design Timeframe.

Note: The schedule is structured on the assumption the project will proceed as a progressive design-build, however, it is acknowledged that this may change to a traditional design-bid-build. Presently, no significant cost impacts to this proposal due to potential changes in delivery method are anticipated. Should additional resources be required, Griffin will negotiate in good faith with the City to arrive at the best value decision for the City.

Qualifications and Exclusions

1. Hourly rates are based on the rates established in the On Call agreement, and include escalation based on current and forecasted inflation estimates per the Consumer Price Index. These escalations occur at the turn of each fiscal year beginning July 1, 2023 and each fiscal year thereafter. Any extensions beyond fiscal year 2025-2026 will be negotiated in good faith with the City.
2. Insurance costs are included as a reimbursable expense and will be billed monthly at the rate of $10 per $1,000.
3. On-site trailer rental, furniture, utilities, and sanitary facilities for our field staff (Project Management team) are excluded. We assume that offices will be provided as part of the construction site trailer(s) being provided by the City's contractor.
4. Costs for all permits required for the project are excluded. It is assumed that the Agency will pay for all permitting fees, assessments, easements, school fees, and other agency or governmental fees or costs to support the design and construction the project. We have not included any permit related fees within our fee proposal. Permits will be pulled by others.
5. Costs for construction staking, environmental and hazardous materials surveys, and all environmental and hazardous materials transportation and remediation costs are excluded.
6. Software licenses or user fees and all software training costs for specific project management software being required by either the Agency or their contractor(s) is excluded.
7. Cost of bulk blueprinting for plans and specifications for use by the contractors and subcontractors is excluded. Funds included in reimbursable expenses are for Griffin printing costs alone.
8. Independent or third-party testing companies such as Roofing, Peer Reviews, LEED, or other specialized third-party oversight services other than those listed herein are excluded.
9. Commissioning requirements required by Cal Green (Title 24) are excluded. Griffin will manage the commissioning process, but we have not included a commissioning agent, nor development of commissioning specifications.
10. No FF&E or OS&E is included in this proposal.
11. Construction Site Security is excluded.
12. Construction Manager will review all RFI's, Submittals, and Substitutions only for completeness, approvals to be executed by the designer of record.

13. This proposal does not include a formal independent Inspector of Record (IOR); it is assumed that any Building Department inspections will be performed by the City's Building Department inspections staff.
14. Construction Cost Estimates, when provided, are based on standard industry practice, professional experience, and knowledge of market conditions. Griffin has no control over material and labor costs, contractor's methods of establishing prices or the market and bidding conditions at the time of bid. Therefore, Griffin does not guarantee that bids received will not vary from the cost estimate provided and Griffin is not liable for any costs, liabilities, or damages incurred by the Agency arising from Griffin's opinion of cost, the actual project cost to the Agency, delays caused by events outside the control of Griffin, or any labor or material cost increases.
15. Griffin is not responsible for any schedule delays. The schedule for completion will be extended for any Non-Consultant Delays. If Griffin incurs additional costs or expenses due to Non-Consultant Delays, then Griffin's fee compensation will be equitably adjusted to cover such additional costs or expenses.

EXHIBIT B - Compensation

Item No.	PROJECT PHASE	PRINCIPAL-IN-CHARGE	PROJECT EXECUTIVE	PREDEVELOPMENT MANAGER	Sr. PROGRAM & CONSTRUCTION MANAGER	COST ESTIMATOR
		$240/hr. *	$220/hr. *	$220/hr. *	$210/hr. *	$195/hr. *
1	TASK 1: PRECONSTRUCTION					
1.1	Project Delivery Analysis and Recommendation	Incl	Incl	Incl	Incl	-
1.2	DBE or Arch Procurement	Incl	Incl	Incl	Incl	-
1.3	Program Development	Incl	Incl	Incl	Incl	-
1.4	Design Management	Incl	Incl	Incl	Incl	-
1.5	Monthly Team Meetings (Virtual: Bi-Weekly for 18 Months)	Incl	Incl	Incl	Incl	-
1.6	(4) Parks and Recreation Meetings	Incl	Incl	Incl	Incl	-
1.7	(4) City Council Meetings	Incl	Incl	Incl	Incl	-
1.8	4 Peer Reviews of DBE Estimates (Concept, Schematic, DD, & GMP)	Incl	Incl	Incl	Incl	Incl
1.9	Master Budget Development and Updates	Incl	Incl	Incl	Incl	-
1.10	Master Schedule Development	Incl	Incl	Incl	Incl	Incl
1.11	Design Management	Incl	Incl	Incl	Incl	-
1.12	Permit Coordination	Incl	Incl	Incl	Incl	-
1.13	GMP Negotiation or Contractor Bidding	Incl	Incl	Incl	Incl	Incl
	Total Hours	96	360	360	1245	140
	Subtotals	$25,920	$88,830	$85,680	$269,275	$30,400
	PROJECT / CONSTRUCTION MANAGEMENT TOTAL					$520,100
4	REIMBURSABLE COSTS					$124,900
4.1	Insurance					$6,400
4.2	Misc. Printing and Office Supplies					$3,500
4.3	Community Outreach - Public Communications ALLOWANCE					$115,000
	GRAND TOTAL					$645,000

5	CONTINGENCY (Calculated as an average of $19,200 per month for 6 months of additional service.)	$115,200

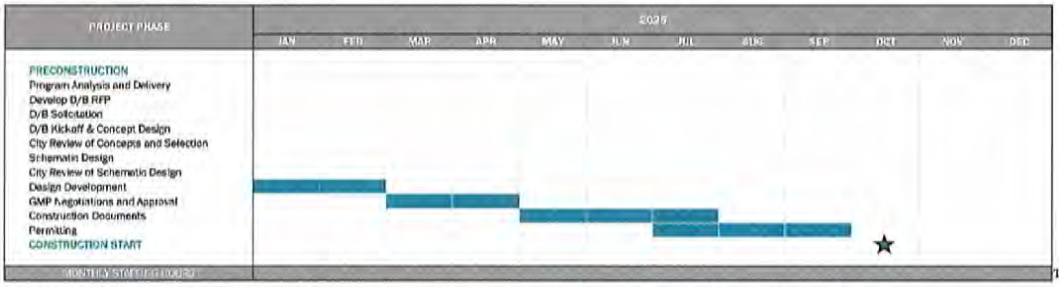
* Listed rates reflect 07/2022-06/2023 fiscal year. Calculated rates include escalation based for future fiscal years 2023/24, 2024/25.

EXHIBIT C – TIME OF PERFORMANCE



Principal in Charge	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Project Executive	10	10	20	10	10	10	20	10	10	20	10	10	20	10	20	
Predevelopment Manager - Programming	120	120	120													
Sr. Program and Construction Manager	40	40	80	60	45	45	60	45	45	60	45	45	60	45	60	
Estimating			40							20			20		20	

Principal-in-Charge	$ 1,040	$ 1,040	$ 1,040	$ 1,040	$ 1,040	$ 1,040	$ 1,040	$ 1,040	$ 1,040	$ 1,100	$ 1,100	$ 1,100	$ 1,100	$ 1,100	$ 1,100	
Project Executive	$ 2,380	$ 2,380	$ 4,760	$ 2,380	$ 2,380	$ 2,380	$ 4,760	$ 2,380	$ 2,380	$ 5,000	$ 2,500	$ 2,500	$ 5,000	$ 2,500	$ 5,000	
Predevelopment Manager - Programming	$ 28,560	$ 28,560	$ 28,560	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Sr. Program and Construction Manager	$ 9,000	$ 9,000	$ 11,250	$ 11,250	$ 10,125	$ 10,125	$ 13,500	$ 10,125	$ 10,125	$ 14,100	$ 10,575	$ 10,575	$ 14,100	$ 10,575	$ 14,100	
Estimating	$ -	$ -	$ 8,400	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,400	$ -	$ -	$ 4,400	$ -	$ 4,400	
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	$ 40,980	$ 40,980	$ 54,010	$ 14,670	$ 13,545	$ 13,545	$ 19,300	$ 13,545	$ 13,545	$ 24,600	$ 14,175	$ 14,175	$ 24,600	$ 14,175	$ 24,600	



										TOTALS
Principal in Charge	4	4	4	4	4	4	4	4	4	96
Project Executive	10	10	45	45	10	10	10	10	10	360
Predevelopment Manager - Programming										360
Sr. Program and Construction Manager	40	45	60	60	60	60	60	60	60	1245
Estimating			40							140

Principal-in-Charge	$ 1,100	$ 1,100	$ 1,100	$ 1,100	$ 1,100	$ 1,100	$ 1,120	$ 1,120	$ 1,120	$ -	$ 26,920
Project Executive	$ 2,500	$ 2,500	$ 11,250	$ 11,250	$ 2,500	$ 2,500	$ 2,550	$ 2,550	$ 2,550	$ -	$ 88,830
Predevelopment Manager - Programming	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 85,680
Sr. Program and Construction Manager	$ 10,575	$ 10,575	$ 14,100	$ 14,100	$ 14,100	$ 14,100	$ 14,400	$ 14,400	$ 14,400	$ -	$ 289,275
Estimating	$ -	$ -	$ 8,800	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 30,400
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	$ 14,175	$ 14,175	$ 35,250	$ 26,450	$ 17,700	$ 17,700	$ 18,070	$ 18,070	$ 18,070	$ -	$ 520,105

APPROVED AS TO FORM AND LEGALITY

_____
CITY ATTORNEY'S OFFICE

TRACY CITY COUNCIL

RESOLUTION NO. _____

APPROVING A PROFESSIONAL SERVICES AGREEMENT WITH GRIFFIN STRUCTURES FOR PROJECT MANAGEMENT SERVICES FOR THE AQUATIC CENTER PROJECT (CIP 78054) FOR A NOT-TO-EXCEED AMOUNT OF $760,200

WHEREAS, The City of Tracy (**City**) and Surland Communities LLC (**Surland**) have been parties to a longstanding development agreement, dating as far back as 2009, with respect to Surland's development of real property located within the Ellis Specific Plan; and

WHEREAS, The Ellis Specific Plan (**ESP**) and ESP Environmental Impact Report (**ESP EIR**), in accordance with the California Environmental Quality Act and related Guidelines (**CEQA**), were approved by the City Council on January 22, 2013; and

WHEREAS, The original development agreement was invalidated during a court proceeding, and in 2013, the City Council adopted an ordinance approving an Amended and Restated Development Agreement with Surland Communities, LLC (**2013 Development Agreement**); and

WHEREAS, Among other things, the 2013 Development Agreement required Surland to dedicate to the City 16 acres of land within the ESP for the future home of a public aquatics park (**Aquatic Center**), through the grant to the City of an irrevocable offer of dedication (**IOD**), by a certain date; and

WHEREAS, In addition to the IOD, the 2013 Development Agreement required Surland to pay the City $10 million towards the development, construction, operation and maintenance of the facility; and

WHEREAS, Through various tolling agreements, the parties negotiated a different location for the land dedication and extended the dates by which Surland had to grant the IOD and pay the amount due; and

WHEREAS, The last extended dates are reflected in that certain Fourth Agreement To Toll And Extend The Dedication Acceptance Period And The 60-Day Cure Period For The Second Swim Center Payment Under The Amended And Restated Development Agreement By And Between The City Of Tracy And Surland Communities, LLC, dated April 3, 2018 (**Fourth Tolling Agreement**); and

WHEREAS, The parties also amended the 2013 Development Agreement twice, the most recent of which was pursuant to that certain Second Amendment to the Amended and

Restated Development Agreement By and Between the City of Tracy and Surland Communities, LLC (**2018 Second Amendment**); and

WHEREAS, Among other things, the 2018 Second Amendment revised, from the City to Surland, the responsibilities, rights, and obligations with respect to the development of the Aquatic Center; and

WHEREAS, Surland prepared conceptual plans for the Aquatic Center, and per the terms of the 2018 Second Amendment, the City has reimbursed Surland $1,318,287 for such services, from an initial $2 Million that Surland had paid to the City pursuant to the 2013 Development Agreement; and

WHEREAS, Mary Mitracos filed a lawsuit against the City and Surland challenging the legality of the 2018 Second Amendment to Development Agreement and the ordinance effectuating its approval by the City Council; and

WHEREAS, In 2020, the San Joaquin County Superior Court entered Judgment in Ms. Mitracos' favor and issued a Peremptory Writ of Mandate ordering the City to rescind the 2018 Second Amendment and all actions taken pursuant to that amendment; and

WHEREAS, The Court's ruling was affirmed on appeal and the City is complying with the Court's mandate; and

WHEREAS, On September 20, 2022, in compliance with the Court order, the City Council rescinded through Resolution 2022-134 various actions that had been taken pursuant to the 2018 Second Amendment, including the City's prior approval of the conceptual plans that had been developed by Surland; and

WHEREAS, The City now holds control of the Aquatic Center project per the rescission of the 2018 Second Amendment; and

WHEREAS, On November 15, 2022, the City Council approved an on-call professional services list for landscape architectural, plan check, inspection, and project management services with: Callander & Associates, Griffin Structures, LPA Inc., Nuvis Landscape Architecture, O'Dell Engineering, Verde Design Inc., and WRT Inc. for a five-year term (Resolution #2022-175); and

WHEREAS, The Aquatic Center project is a complex endeavor requiring a unique understanding of various systems, products, construction methods, project delivery approaches and an overall expertise in the construction of aquatic facilities; and

WHEREAS, In November of 2022, staff engaged three firms on the approved list of on-call consultants to provide professional project management services related to the development of an aquatic's facility with a total project budget of $65,000,000. Griffin Structures submitted a responsive proposal, while Callander Associates and O'Dell Engineering declined to submit a proposal; and

WHEREAS, On July 5, 2023, the City Council took action to further the project by determining a project site through the adoption of a resolution accepting an irrevocable offer of dedication of fee interest for 16 acres of community park land from Ellis Village, LLC. Now that the site has been determined, the Project can move forward; and

WHEREAS, The scope of services entails a series of pre-construction services including: project delivery analysis, design service procurement, program development, design management, monthly meetings, meetings with commissions and elected officials, peer review, master budget development, master schedule development, design management, permit coordination and bidding services (Services). The negotiated fee for the Services is a total not-to-exceed amount of $760,200, which includes a contingency of $115,200 to cover approximately six (6) months of additional services if delays were to occur during planning/design and/or other unforeseen circumstances; now, therefore, be it,

RESOLVED: That the City Council of the City of Tracy hereby approves a Professional Services Agreement with Griffin Structures for project management services for the Aquatic Center Project (CIP 78054) for a not-to-exceed amount of $760,200.

* * * * * * * * * * * * * *

The foregoing Resolution 2023-_____ was adopted by the Tracy City Council on September 5, 2023, by the following vote:

AYES: COUNCIL MEMBERS:
NOES: COUNCIL MEMBERS:
ABSENT: COUNCIL MEMBERS:
ABSTENTION: COUNCIL MEMBERS

_____
NANCY D. YOUNG
Mayor of the City of Tracy, California

ATTEST:_____
ADRIANNE RICHARDSON
City Clerk and Clerk of the Council of the
City of Tracy, California

September 5, 2023

Agenda Item 1.O

RECOMMENDATION

Staff recommends that City Council, by resolution: 1) approve a Professional Services Agreement with HdL Coren & Cone for Property Tax Consulting Services; 2) authorize the Mayor to sign the agreement and, 3) authorize the City Manager to extend the agreement for up to three, three-year terms.

EXECUTIVE SUMMARY

In the City's ongoing efforts to service its community, staff issued a Request for Proposals for property tax services and recommends that HdL Coren & Cone (HdLCC) be hired to maximize the City's Property Tax income and minimize the cost of lost revenue by detecting and documenting misallocations of Property Tax within the statute of limitations on recoverability.

HdLCC's quarterly fixed fees for Property Tax services will be a not to exceed amount of $5,475 based upon the number of parcels in the City. In addition to the fixed fee, 25% of the net tax revenues recovered for the City and/or Successor Agency from the audits performed over the period of time allowable by State statute (current year and 3 prior lien date years) will be paid to HdLCC.

BACKGROUND AND LEGISLATIVE HISTORY

The City continues to focus on ways to increase its limited resources. As a way to optimize tax revenue, tax enhancement, information and audit services are recommended. The City has used HdL Coren & Cone since 2017 to provide these services. As the current contract, plus extensions, is expiring, City staff initiated a Request for Proposals (RFP) on June 7, 2023, for Property Tax Consulting Services.

ANALYSIS

In response to the RFP, the City received only one response, from HdLCC. The City has been satisfied with the work performed under the expiring contract and wishes to enter into a new three-year agreement effective October 1, 2023.

Property Tax services to be provided, if the Agreement is approved, are as follows:

- Property Tax Reports and Analytical Services
- Property Tax – General Services
- Identification and Correction of Errors
- Deliverables
    - Information to be Provided Monthly or Quarterly
    - Use of Proprietary Property Tax Computer Application

HdLCC, established in 1992, has an exemplary reputation, servicing over 260 California public agencies including the Cities of Brentwood, Fremont, Lathrop, Livermore, and Stockton. Over $95 million in new revenues has been generated for client agencies; $52.6 million since 2000.

Staff has negotiated a three-year agreement for $21,900 annually based on approximately 28,000 parcels, with an option to extend the agreement for up to three terms of three-years each following a written determination that HdLCC has satisfactorily met all the requirements of the agreement.

FISCAL IMPACT

Funding for the contract with HdLCC is included in the Finance Department's FY2023-24 operating budget.

STRATEGIC PLAN

This agenda item supports the Governance strategy, goal 2: ensure continued fiscal sustainability through budgetary and financial stewardship.

ACTION REQUESTED OF THE CITY COUNCIL

Staff recommends that City Council, by resolution: 1) approve a Professional Services Agreement with HdL Coren & Cone for Property Tax Consulting Services; 2) authorize the Mayor to sign the agreement and, 3) authorize the City Manager to extend the agreement for up to three, three-year terms.

Prepared by: Robert Harmon, Accounting Manager

Reviewed by: Sara Cowell, Finance Director
Karin Schnaider, Assistant City Manager

Approved by: Midori Lichtwardt, Interim City Manager

ATTACHMENT

Attachment A – Professional Services Agreement

CITY OF TRACY
PROFESSIONAL SERVICES AGREEMENT WITH HdL COREN & CONE
TO PERFORM PROPERTY TAX CONSULTING SERVICES

This Professional Services Agreement (**Agreement**) is entered into between the City of Tracy, a municipal corporation (**City**), and HdL Coren & Cone, a California corporation (**Consultant**). City and Consultant are referred to individually as "Party" and collectively as "Parties."

Recitals

A. City desires to retain Consultant for Property Tax Consulting Services ("Services"); and

B. On June 7, 2023, the City issued an RFP for a Property Tax Consultant. On July 19, 2023, Consultant submitted its proposal to the City. City has determined that Consultant possesses the skills, experience and certification required to provide the Services. A review of qualifications and past performance by the Consultant has been completed and it has been determined that Consultant is qualified and it would be beneficial to engage Consultant for the Services to the City.

C. After negotiations between the City and Consultant, the Parties have reached an agreement for the performance of the Services in accordance with the terms set forth in this Agreement.

D. This Agreement is being executed pursuant to Resolution No. ____ approved by Tracy City Council on September 5, 2023.

Now therefore, the Parties mutually agree as follows:

1. Scope of Work. Consultant shall perform the Services, which includes the services described in Exhibit "A" attached and incorporated by reference. Consultant shall not perform any Services until instructed by the City. The services shall be performed by, or under the direct supervision of, Consultant's Authorized Representative: Paula Cone**.** Consultant shall not replace its Authorized Representative, nor shall Consultant use or replace any subcontractor or subconsultant, without City's prior written consent. The City may terminate this Agreement if Consultant makes any such change..

2. Time of Performance. Time is of the essence in the performance of services under this Agreement and the timing requirements set forth shall be strictly adhered to unless otherwise modified in writing in accordance with this Agreement. Any services for which times for performance are not specified in this Agreement shall be started and completed by Consultant in a reasonably prompt and timely manner based upon the circumstances and direction communicated to the Consultant. Consultant shall submit all requests for time extensions to the City in writing no later than ten days after the start of the condition which purportedly caused the delay, and not later than the date on which performance is due. City may grant or deny such requests at its sole discretion.

2.1 Term. The term of this Agreement shall begin on October 1, 2023, and end on September 30, 2026, unless terminated in accordance with Section 6. This Agreement may be extended for an additional three terms of three years each by the City Manager following a written determination that Consultant has satisfactorily met all the requirements of this Agreement. Notwithstanding the foregoing provision, the payment of any funds under this Agreement shall be subject to the City of Tracy's appropriation of funds for the Services. This Agreement shall terminate in the event that such funds are not appropriated.

3. Compensation. City shall pay Consultant on a time and expense basis, at the billing rates set forth in Exhibit "B," attached and incorporated by reference for services performed under this Agreement.

3.1 Not to Exceed Amount. Consultant's total compensation under this Agreement shall not exceed the annual fixed amounts specified in Exhibit B. It is understood and agreed that Consultant may not receive compensation up to this amount, and Consultant's total compensation under this Agreement will depend on the scope of the Services approved by the City. Consultant's billing rates shall cover all costs and expenses for Consultant's performance of this Agreement. No work shall be performed by Consultant in excess of the total compensation amount provided in this section without the City's prior written approval. Consultant's billing rates under this Agreement shall be adjusted annually by the California Consumer Price Index (CPI) for all items as determined by the Department of Industrial Relations as measured February to February by the All-Urban Consumers index.

3.2 Invoices. Consultant shall submit quarterly invoice(s) to the City that describe the Services performed, including times, dates, and names of persons performing the Services.

3.2.1 If Consultant is providing Services in response to a development application, separate invoice(s) must be issued for each application and each invoice shall contain the City's designated development application number.

3.2.2 Consultant's failure to submit invoice(s) in accordance with these requirements may result in the City rejecting said invoice(s) and thereby delaying payment to Consultant.

3.3 Payment. Within 30 days after the City's receipt of invoice(s), City shall make payment to the Consultant based upon the Services described on the invoice(s) and approved by the City.

3.4 The acceptance by Consultant of the final payment made under this Agreement shall constitute a release of City from all claims and liabilities for compensation to Consultant for anything completed, finished or relating to Consultant's Services. Consultant agrees that payment by City shall not constitute nor be deemed a release of the responsibility and liability of Consultant or its employees, subcontractors, agents and subconsultants for the accuracy and competency of the information provided and/or Services performed hereunder, nor shall such payment be deemed to be an assumption of responsibility or liability by City for any defect or error in the Services performed by Consultant, its employees, subcontractors, agents and subconsultants.

3.5 Consultant agrees to maintain books, accounts, payroll records and other information relating to the performance of Consultant's obligations under the Agreement, which shall adequately and correctly reflect the expenses incurred by the Consultant in the performance of Consultant's work under the Agreement. Such books and records shall be open to inspection and audit by the City during regular business hours for three years after expiration or termination of this Agreement.

4. Indemnification. Consultant shall, to the fullest extent permitted by law, indemnify, defend (with independent counsel approved by the City), and hold harmless the City from and against any claims arising out of Consultant's performance or failure to comply with obligations under this Agreement, except to the extent caused by the sole, active negligence or willful misconduct of the City.

In this section, "City" means the City, its officials, officers, agents, employees and volunteers; "Consultant" means the Consultant, its employees, agents and subcontractors; "Claims" includes claims, demands, actions, losses, damages, injuries, and liability, direct or indirect (including any and all related costs and expenses) and any allegations of these; and "Arising out of" includes "pertaining to" and "relating to".

(The duty of a "design professional" to indemnify and defend the City is limited to claims that arise out of, pertain to, or relate to the negligence, recklessness or willful misconduct of the design professional, under Civ. Code § 2782.8.)

In the event there is a finding and/or determination that Consultant is not an independent contractor and/or is an employee of City, including but not limited to any such finding and/or determination made by the California Public Employees' Retirement System (CalPERS), the Department of Industrial Relations (DIR), or the Internal Revenue Service (IRS), Consultant shall, to the fullest extent permitted by law, indemnify, defend, and hold harmless the City from and against any all claims relating to or in connection with such a finding and/or determination.
Consultant and City mutually waive consequential damages for claims, disputes, or other matters in question, arising out of or relating to this Agreement. This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination of this Agreement.

The provisions of this section survive completion of the services or the termination of this Agreement and are not limited by the provisions of Section 5 relating to insurance.

5. Insurance. Consultant shall, throughout the duration of this Agreement, maintain insurance to cover Consultant, its agents, representatives, and employees in connection with the performance of services under this Agreement at the minimum levels set forth herein.

5.1 Commercial General Liability (with coverage at least as broad as ISO form CG 00 01 01 96) "per occurrence" coverage shall be maintained in an amount not less than $4,000,000 general aggregate and $2,000,000 per occurrence for general liability, bodily injury, personal injury, and property damage.

5.2 Automobile Liability (with coverage at least as broad as ISO form CA 00 01 07 97, for "any auto") "claims made" coverage shall be maintained in an amount not less than $1,000,000 per accident for bodily injury and property damage.

5.3 Workers' Compensation coverage shall be maintained as required by the State of California.

5.4 Professional Liability "claims made" coverage shall be maintained to cover damages that may be the result of errors, omissions, or negligent acts of Consultant in an amount not less than $1,000,000 per claim.

5.5 Endorsements. Consultant shall obtain endorsements to the automobile and commercial general liability insurance policies with the following provisions:

5.5.1 The City (including its elected officials, officers, employees, agents, and volunteers) shall be named as an additional "insured."

5.5.2 For any claims related to this Agreement, Consultant's coverage shall be primary insurance with respect to the City. Any insurance maintained by the City shall be excess of the Consultant's insurance and shall not contribute with it.

5.6 Notice of Cancellation. Consultant shall notify the City if the policy is canceled before the expiration date. For the purpose of this notice requirement, any material change in the policy prior to the expiration shall be considered a cancellation. Consultant shall immediately obtain a replacement policy.

5.7 Authorized Insurers. All insurance companies providing coverage to Consultant shall be insurance organizations authorized by the Insurance Commissioner of the State of California to transact the business of insurance in the State of California.

5.8 Insurance Certificate. Consultant shall provide evidence of compliance with the insurance requirements listed above by providing a certificate of insurance and endorsements, in a form satisfactory to the City, before the City signs this Agreement.

5.9 Substitute Certificates. Consultant shall provide a substitute certificate of insurance no later than 30 days prior to the policy expiration date of any insurance policy required by this Agreement.

5.10 Consultant's Obligation. Maintenance of insurance by the Consultant as specified in this Agreement shall in no way be interpreted as relieving the Consultant of any responsibility whatsoever (including indemnity obligations under this Agreement), and the Consultant may carry, at its

own expense, such additional insurance as it deems necessary. Failure to provide or maintain any insurance policies or endorsements required herein may result in the City terminating this Agreement.

6. Termination. The City may terminate this Agreement in its sole and absolute discretion by giving ten (10) days' written notice to Consultant. Within five (5) days of such a termination, Consultant shall give the City all original documents relating to the Services in Consultant's possession or control, including, without limitation, preliminary drafts and supporting documents, and any other documents prepared by Consultant pursuant to this Agreement. The City shall pay Consultant for all services satisfactorily performed in accordance with this Agreement, up to the date notice is given.

7. Dispute Resolution. If any dispute arises between the City and Consultant that cannot be settled after engaging in good faith negotiations, City and Consultant agree to resolve the dispute in accordance with the following:

7.1 Each Party shall designate a senior management or executive level representative to negotiate the dispute.

7.2 The representatives shall attempt, through good faith negotiations, to resolve the dispute by any means within their authority.

7.3 If the issue remains unresolved after fifteen (15) days of good faith negotiations, the Parties shall attempt to resolve the disagreement by negotiations between legal counsel. If the aforementioned process fails, the Parties shall resolve any remaining disputes through mediation to expedite the resolution of the dispute.

7.4 The mediation process shall provide for the selection within fifteen (15) days by both Parties of a disinterested third person to serve as the mediator, shall be commenced within thirty (30) days of selection of a mediator and shall be concluded within fifteen (15) days from the commencement of the mediation.

7.5 The Parties shall equally bear the costs of any third party in any alternative dispute resolution process.

7.6 The dispute resolution process is a material condition to this Agreement and must be exhausted prior to either Party initiating legal action. This dispute resolution process is not intended to nor shall be construed to change the time periods for filing a claim or action specified by Government Code §§ 900 et seq.

8. Ownership of Work. All original documents prepared by Consultant for this Agreement, whether complete or in progress, are the property of the City, and shall be given to the City at the completion of Consultant's Services, upon the termination of this Agreement, or upon demand from the City. No such documents shall be revealed or made available by Consultant to any third party without the City's prior written consent.

9. Independent Contractor Status. Consultant is an independent contractor and is solely responsible for the acts of its employees or agents, including any negligent acts or omissions. Consultant is not City's employee and Consultant shall have no authority, express or implied, to act on behalf of the City as an agent, or to bind the City to any obligation, unless the City provides prior written authorization. Consultant is free to work for other entities while under contract with the City. Consultant, and its agents or employees, are not entitled to City benefits. Consultant shall be solely responsible for, and shall save the City harmless from, all matters relating to the payment of Consultant's employees, agents, subcontractors and subconsultants, including compliance with social security requirements, federal and State income tax withholding and all other regulations governing employer-employee relations.

9.1 **Non-Exclusive Professional Services Agreement**. The City reserves the right to contract with other firms and/or consultants during the term of this Agreement to provide the City the

same or similar services described in Exhibit A. Nothing contained in this Agreement guarantees Consultant a certain amount of work, and the City may, in its sole and absolute discretion, allocate and/or delegate work to Consultant so as to satisfy the City's needs.

10. Conflicts of Interest. Consultant (including its employees, agents, and subconsultants) shall not maintain or acquire any direct or indirect interest that conflicts with the performance of this Agreement. If Consultant maintains or acquires such a conflicting interest, the City may terminate any contract (including this Agreement) involving Consultant's conflicting interest.

11. Rebates, Kickbacks, or Other Unlawful Consideration. Consultant warrants that this Agreement was not obtained or secured through rebates, kickbacks, or other unlawful consideration either promised or paid to any City official or employee. For any breach of this warranty, City shall have the right, in its sole discretion, to terminate this Agreement without liability; to pay only for the value of the work actually performed; to deduct from the contract price the value of the rebate, kickback, or other unlawful consideration; or otherwise recover the full amount of such rebate, kickback, or other unlawful consideration.

12. Notices. All notices, demands, or other communications which this Agreement contemplates or authorizes shall be in writing and shall be personally delivered or mailed to the other party to the addresses listed below. Communications shall be deemed to have been given and received on the first to occur of: (1) actual receipt at the address designated below, or (2) three working days after the deposit in the United States Mail of registered or certified mail, sent to the address designated below.

To City:

Sara Cowell, Finance Director
City of Tracy
333 Civic Center Plaza
Tracy, CA 95376

To Consultant:

Nichole Cone-Morishita, CFO
HdL Coren & Cone
120 S. State College Blvd, Suite 200
Brea, CA 92821

With a copy to:

City Attorney
333 Civic Center Plaza
Tracy, CA 95376

13. Miscellaneous.

13.1 Standard of Care. Unless otherwise specified in this Agreement, the standard of care applicable to Consultant's services will be the degree of skill and diligence ordinarily used by reputable professionals performing in the same or similar time and locality, and under the same or similar circumstances.

13.2 Amendments. This Agreement may not be modified orally or in any manner other than by an agreement in writing signed by both Parties.

13.3 Waivers. Waiver of a breach or default under this Agreement shall not constitute a continuing waiver or a waiver of a subsequent breach of the same or any other provision of this Agreement. No waiver shall be effective unless it is in writing and signed by the waiving party.

13.4 Assignment and Delegation. Consultant may not assign, transfer or delegate this Agreement or any portion of it without the City's prior written consent. Any attempt to do so will be void. City's consent to one assignment, transfer or delegation shall not be deemed to be a consent to any subsequent assignment, transfer or delegation.

13.5 Jurisdiction and Venue. The interpretation, validity, and enforcement of the Agreement shall be governed by and construed under the laws of the State of California. Any suit, claim, or legal proceeding of any kind related to this Agreement shall be filed and heard in a court of competent jurisdiction in the County of San Joaquin.

13.6 Compliance with the Law. Consultant shall comply with all applicable local, state, and federal laws, whether or not those laws are expressly stated in this Agreement.

13.6.1 Prevailing Wage Laws. Consultant is aware of the requirements of California Labor Code Section 1720, et seq., and 1770, et seq., as well as California Code of Regulations, Title 8, Section 16000, et seq., ("Prevailing Wage Laws"), which require the payment of prevailing wage rates; employment of apprentices (§ 1777.5), certified payroll records (§1776), hours of labor (§1813 and §1815), debarment of contractors and subcontractors (§1777.1) and the performance of other requirements on "public works" and "maintenance" projects. If the services being performed under this Agreement are part of a "public works" or "maintenance" project, as defined in the Prevailing Wage Laws, and if the total compensation is $1,000 or more, Consultant agrees to fully comply with such Prevailing Wage Laws. These prevailing rates are on file with the City and are available online at http://www.dir.ca.gov/DLSR. Consultant shall defend, indemnify and hold the City, its officials, officers, employees and agents, harmless from any and all claims, costs, penalties, or interests arising out of any failure or alleged failure to comply with the Prevailing Wage Laws.

13.6.2 Non-discrimination. Consultant represents and warrants that it is an equal opportunity employer and it shall not discriminate against any subconsultant, employee or applicant for employment because of race, religion, color, national origin, handicap, ancestry, sex or age. Consultant shall also comply with all applicable anti-discrimination federal and state laws, including but not limited to, the California Fair Employment and Housing Act (Gov. Code 12990 (a-f) et seq.).

13.7 Business Entity Status. Consultant is responsible for filing all required documents and/or forms with the California Secretary of State and meeting all requirements of the Franchise Tax Board, to the extent such requirements apply to Consultant. By entering into this Agreement, Consultant represents that it is not a suspended corporation. If Consultant is a suspended corporation at the time it enters this Agreement, City may take steps to have this Agreement declared voidable.

13.8 Business License. Before the City signs this Agreement, Consultant shall obtain a City of Tracy Business License. Consultant shall maintain an active City of Tracy Business License during the term of this Agreement.

13.9 Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the Parties hereto and their respective successors and assigns.

13.10 Construction of Agreement. Each Party hereto has had an equivalent opportunity to participate in the drafting of this Agreement and/or to consult with legal counsel. Therefore, the usual construction of an agreement against the drafting Party shall not apply hereto.

13.11 Severability. If a term of this Agreement is held invalid by a court of competent jurisdiction, the Agreement shall be construed as not containing that term, and the remainder of this Agreement shall remain in effect.

13.12 Controlling Provisions. In the case of any conflict between the terms of this Agreement and the Exhibits hereto, and Consultant's proposal (if any), the Agreement shall control. In the case of any conflict between the Exhibits hereto and the Consultant's proposal (if any), the Exhibits shall control.

13.13 Entire Agreement. This Agreement and the attached Exhibits comprise the entire integrated understanding between the Parties concerning the services to be performed. This Agreement supersedes all prior negotiations, representations or agreements. All exhibits attached hereto are incorporated by reference herein.

13.14 **Counterparts**. City and Consultant agree that this Agreement may be executed in two or more counterparts, each of which shall be deemed an original.

13.15 **Expenses for Enforcement**. Consultant and City agree that the prevailing party's reasonable costs, attorneys' fees and expenses, including investigation fees and expert witness fees, shall be paid by the non-prevailing party in any dispute involving the terms and conditions of this Agreement.

14. Signatures. The individuals executing this Agreement on behalf of Consultant represent and warrant that they have the right, power, legal capacity and authority to enter into and to execute this Agreement on behalf of Consultant.

[SIGNATURES ON FOLLOWING PAGE]

The Parties agree to the full performance of the terms set forth here.

City of Tracy

By: Nancy D. Young
Title: Mayor

Date: _____

Attest:

_____
Adrianne Richardson, City Clerk

Approved as to form:

_____
Bijal M. Patel, City Attorney

Consultant

By: Nichole Cone-Morishita
Title: CFO

Date: 8/15/2023

Federal Employer Tax ID No. 98-4398586
California Corporate Number: C1714476

By: David Schey
Title: Secretary

Date: 8/15/2023

Exhibits:

A Scope of Services, including personnel and time of performance (See Agreement sections 1 and 2.)

B Compensation (See Agreement section 3.)

EXHIBIT A - Scope of Work

A. Reports and Analytical Services

Consultant shall furnish the following reports and analytical services:

- Analyses based on geo areas designated by the City to include assessed valuations and square footage computations for use in economic analysis and community development planning will be performed upon request and with City-supplied maps or boundaries.
- Tracking of Proposition 8 reductions and restorations.
- Median sale price data for current year and prior years.
- One and five-year budget projections for the city general fund and special districts.
- A listing of property transfers that have occurred since the last report will be available through the software provided and updated monthly. This data will include the new owner/seller of the property, new mailing address if not the situs address, the date of sale, the sale price when verified, document number, and transaction type.
- The average and median single family sale price report is sent to all clients quarterly and includes the same data for all client agencies within the same County.
- A multiple year comparison of growth by use code designation over a 5-year period
- The Clerk of the Board or County Assessor in San Joaquin County does not provide property tax appeals in an automated format, Consultant cannot prepare appeal reports.

B. Property Tax – General Services

Consultant will reconcile the annual Auditor/Controller Assessed Valuations Report and will furnish a breakdown of assessed values within the City and Successor Agency. A breakdown of the values in the City can be provided after the reconciliation is completed.

C. Identification and Correction of Errors

Consultant will perform an analysis of the Assessor Rolls to identify all parcels on both the secured and unsecured tax rolls and verify that parcel assessed valuations and the resulting taxes are correctly allocated to the City or its Successor Agency. This analysis is accomplished through the use of specialized computer software, assessor maps, city GIS maps, city records, other pertinent documents, and field investigations. The review will include the lien date secured and unsecured data for the current tax year as well as historical data back for a total of four (4) tax years.

D. Deliverables

Consultant furnishes a variety of reports detailing property and revenue trends for the entire city and for custom defined geographic areas. Among the reports available are top 25, 50, 100-property owner/taxpayer listings, multiple ownership properties, non-owner occupied parcels, identification of property ownership transfers for tracking of reassessments. Consultant will also provide the City with quarterly reports of successful, pending and historical assessment appeals.

Consultant will provide the following reports based on the current year lien date rolls and will provide the reports annually, quarterly or monthly as appropriate: Reports are also available from prior years if requested.

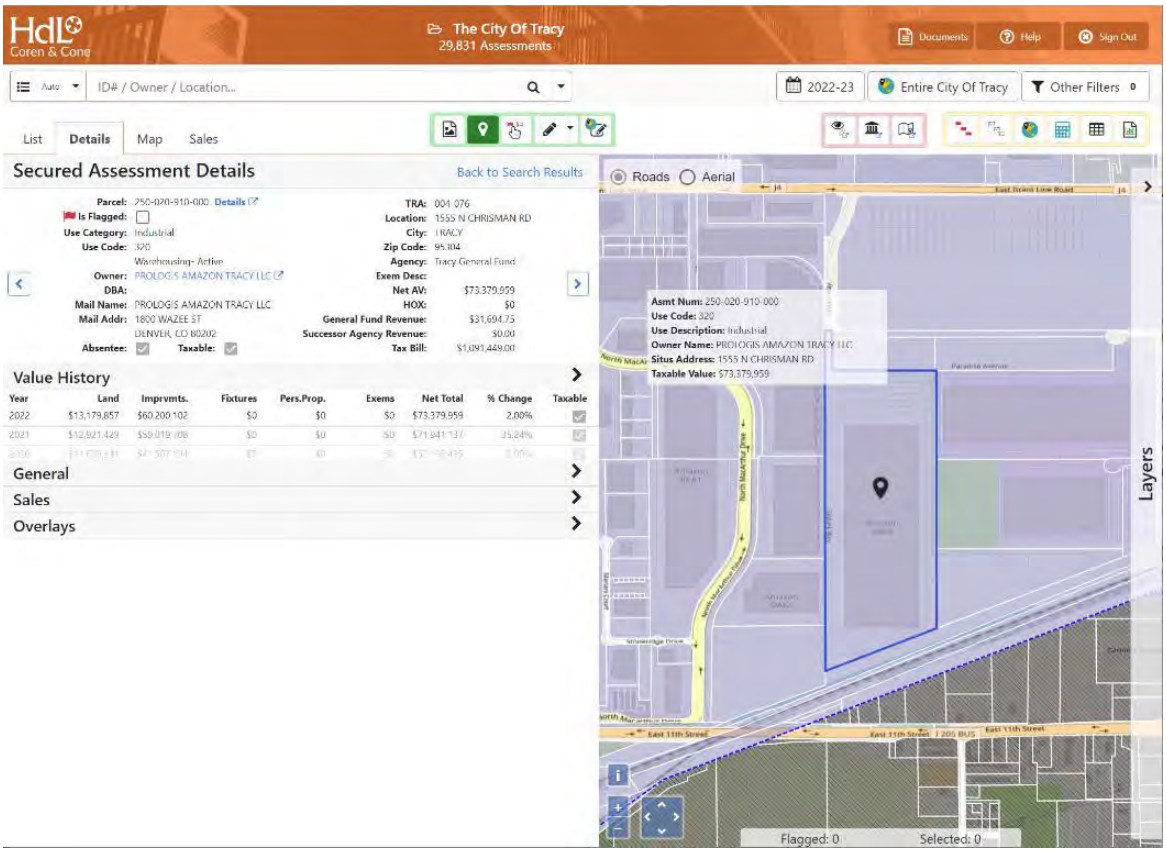
- A five-year history of the values within the City, and custom (city defined) geographic areas;
- A listing of the largest value changes, positive and negative between tax years.
- An annual parcel listing of properties with parcel number changes between tax years identifying parcel splits and combines.
- A listing of the major property owners for the City including the combined assessed values of their property and property use code designation.
- A listing and summary of property transfers which occurred since the lien date ordered by month.
- A listing of parcels that have not changed ownership since the enactment of Proposition 13.
- A comparison of property within the City by county use-code designation.
- A listing by parcel of new construction activity to identify nonresidential parcels with new construction activity and to provide reports for use in the City's preparation of Proposition 4 and 111 State Appropriation Limit calculations.
- A listing of absentee owner parcels.
- Newsletter summary for public and elected distribution.

Property Tax Application and Database

Consultant will provide a web-based software application to City as a user-friendly tool to access the City’s property tax data. Consultant provides updates to the data portion of the product on monthly basis to reflect changes in ownership, updated appeals filings, and deed recordings.

Training will be provided to city staff within the first two months after the execution of the agreement for property tax management and audit services and is available annually for new staff members or staff requiring a refresher course. If additional training sessions are required, the fees in the compensation section under hourly fees will be charged.

The City will be granted a site license for the application, providing no limit to the number of users. Consultant will not charge an annual maintenance fee for the software program. Periodically, as the program changes and product enhancements are developed, upgrades or new releases of the software are issued at no additional cost to the client.



E. Additional Services

Successor Agency Services

Successor Agency Services including but not limited to:

- Annual tax increment projections and, as requested, cash flow analysis for the Successor Agency by Project Area.
- Review of Redevelopment Obligation Payment Schedules (ROPS) as requested.
- Provide property tax information to the Oversight Board at the direction of the Successor Agency.
- Provide access to the Oversight Board to City and former redevelopment agency documents at the direction of the Successor Agency.
- Monitor the County distribution of tax-sharing revenues to the taxing entities of the former redevelopment agency.
- Advice and consultation on the City/Successor Agency's preparation of required reports, such as revenue projections; review of Recognized Obligation Payment Schedules (ROPS), submittals to the Oversight Board and/or County or State agencies, and new or revised legislative requirements.
- Analysis of legislative and judicial matters impacting Redevelopment Property Tax Trust Fund (RPTTF) revenues to the Successor Agency and to the City.

Legislation

Consultant monitors and reports on issues related to property tax and coordinates with City Staff in connection with passed and potential property tax legislation and regulations.

Consultation

Annual reports presented by a principal or associate of the firm to any City staff member interested in the detailed analysis including property tax revenue estimates performed by Consultant of the City's annual property assessed values released by the assessor. Since property data is not confidential, these reports can be shared with staff. Understanding the budget implications of the data released in late summer and presented in late Fall is timely for mid-year budget reviews.

Consultant also serves as the City's property tax staff for consultation and questions related to budgeting, revenue collection, the mechanics of property tax allocation and potential changes in the legislation that may impact local agencies. Training is provided free of charge on the use of the web-based software which is updated monthly with ownership changes and appeal information where available.

During the term of the contract, Consultant serves as the resource staff to the City on questions relating to property tax. This includes being "on-call" to assist with any property tax issues. On-going consultation would include, but not be limited to inquiries resolved through use of the City data base. All requests for information based upon the County's property tax data sets are provided without additional costs. Special reports, additional research, or requests requiring additional computer programming may entail some additional costs. Attendance at City and/or Successor Agency meetings will be billed at our hourly rates. Optional services will only be provided upon written notice to proceed by the City.

F. Proposed Work Plan/Staffing Schedule

The methodology that the company follows in identifying, correcting and recovering property tax errors includes the following:

Task I Establishment of County Data Set
Task II Identify and Correct Errors
Task III Prepare Reports
Task IV Ongoing Analysis

The staff servicing the City will be:

- Paula Cone, President/Partner
- David Schey, Principal/Partner
- Nichole Cone-Morishita, Principal/Partner

Timeline for Property Tax Analysis and Audit Services

- County assessment rolls are purchased annually in July.

- The property data program will be available for access via the internet within 30 days of the execution of the agreement. Parcel data will be updated monthly to include the most current ownership information due to parcel transfers.
- The first secured audit will be performed and submitted to the Assessor no later than 60 days from the date of the contract. Future audits will be performed no less than once every two years and submitted no later than March 1st.
- The unsecured audits for the City will be completed and submitted to the County Assessor for corrective action within 120 days of receipt of county rolls. The City will receive file copies of submittals simultaneous with submissions to the County Assessor.
- Data collection from the county assessor's and auditor controller's offices for reports is performed in August and September each year and preliminary reports will be delivered to the City prior to the end of January annually.
- The final tax ratio percentages are available from the auditor controller's office annually in February/March. Final reports will be prepared and delivered prior to the end of April annually.

EXHIBIT B - Compensation

Annual fixed fee to be based upon City parcel count (27,916), not to exceed: $ 21,900

In addition to the fixed fee, 25% of the net tax revenues recovered for the City and/or Successor Agency from the audits performed over the period of time allowable by State statute (current year and 3 prior lien date years) shall be paid to Consultant. Net tax revenues mean the taxes received by the City through Consultant's audit efforts.

Work that is requested by the City that is beyond the scope of services in this proposal shall be charged on a time and material basis. No work shall be performed without prior written approval by the City. Hourly fees for these services are as follows:

Partner	$ 250
Principal	$ 225
Programmer	$ 200
Associate	$ 175
Senior Analyst	$ 125
Analyst	$ 90
Administrative	$ 70

Hourly rates are exclusive of expenses. Expenses and reasonable travel and lodging fees will be billed at 1.15 times actual incurred costs but will not exceed $ 1,500 without prior City authorization.

APPROVED AS TO FORM AND LEGALITY

_____
CITY ATTORNEY'S OFFICE

TRACY CITY COUNCIL

RESOLUTION NO. 2023-

APPROVING THE PROFESSIONAL SERVICES AGREEMENT BETWEEN THE CITY OF TRACY AND HDL COREN & CONE FOR PROPERTY TAX CONSULTING SERVICES AND AUTHORIZING THE MAYOR TO EXECUTE THE AGREEMENT

WHEREAS, The City of Tracy (City) desires to maximize the City's income and minimize the cost of lost revenue by detecting and documenting misallocations of Property Tax within the statute of limitations on recoverability; and

WHEREAS, staff issued a Request for Proposals on June 7, 2023 to consultants for property tax consulting services; and

WHEREAS, responses were received on June 19, 2023, evaluated, and negotiations were conducted with HdL Coren & Cone; and

WHEREAS, The City would like to now enter into an Agreement with HdL Coren & Cone for the scope of services and fees listed on Exhibits "A" and "B" of the Agreement; now, therefore, be it,

RESOLVED, That City Council of the City of Tracy hereby approves the Professional Services Agreement between the City of Tracy and HdL Coren & Cone for Property Tax Consulting Services, and authorizes the Mayor to execute the Agreement.

* * * * * * * * * * * * * * * * * * *

The foregoing Resolution 2023-_____ was adopted by the Tracy City Council on September 5, 2023, by the following vote:

AYES:	COUNCIL MEMBERS:
NOES:	COUNCIL MEMBERS:
ABSENT:	COUNCIL MEMBERS:
ABSTENTION:	COUNCIL MEMBERS:

_____
NANCY D. YOUNG
Mayor of the City of Tracy, California

ATTEST: _____
ADRIANNE RICHARDSON
City Clerk and Clerk of the Council of the
City of Tracy, California

September 5, 2023

Agenda Item 1.P

RECOMMENDATION

The Tracy Homelessness Advisory Committee recommends that City Council adopt a resolution: 1) Authorizing the acceptance of a grant award from San Joaquin County Homelessness Housing Assistance and Prevention Round 3 allocation in the amount of $251,795 to partially fund operations costs of the Tracy Interim Shelter Site (renamed Phase III and Phase IV of the Temporary Emergency Housing Facility, CIP 71112); and 2) Appropriating $251,795 of the total grant funds to the Mobility and Housing Department, Homeless Services Division.

EXECUTIVE SUMMARY

This item provides Council with an opportunity to receive a grant award in the amount of $251,795 from San Joaquin County Homelessness Housing Assistance and Prevention Round 3 allocation for the Tracy Interim Shelter Site project (renamed Phase III and Phase IV of the Temporary Emergency Housing Facility). This grant is funded by San Joaquin County Homelessness Housing Assistance and Prevention Round 3 allocation and is being allocated to partially fund operations costs at the Temporary Emergency Housing Facility.

On August 17, 2023, the Tracy Homelessness Advisory Committee heard this item and recommended that the City Council adopt the proposed Resolution.

BACKGROUND AND LEGISLATIVE HISTORY

The Tracy Interim Shelter Site project (renamed Phase III and Phase IV of the Temporary Emergency Housing Facility) was authorized in August 2022 under an emergency shelter declaration to advance the needs to house the unsheltered in Tracy. On August 16, 2022, staff recommended that City Council reject the single bid received for the Temporary Emergency Housing Shelter Project on Arbor Avenue, Site Improvements Construction Package 2 (renamed Phase II), CIP 71112, and authorize staff to re-advertise the project and rebid of the project. As this created a delay, the City Council adopted Resolution No. 2022-121 (“Resolution”), which reaffirmed an emergency shelter crisis as the City of Tracy continues to experience an increasing number of unsheltered individuals. Under this authorization, the City Manager entered into a five-year lease agreement for four Modular Units and one Administration Unit that provide approximately 48 beds for individuals; and a one-year lease for generators. This project has been renamed Phase III of the Temporary Emergency Housing Facility. In addition, the City Manager was authorized to purchase eight Custom Containers to provide approximately 38 beds for individuals. This project has been renamed Phase IV of the Temporary Emergency Housing Facility.

On January 5, 2023, the City’s Homeless Services Division applied for the HHAP Round 3 San Joaquin County allocation to the San Joaquin County Program Administrator for Homeless Initiatives. This application included shelter operations, street outreach and services coordination funding requests in the amount of $1.4 Million dollars. On March 29, 2023, the City was notified of the award in the amount of $251,795 to support shelter operations at the Tracy Interim Shelter site.

ANALYSIS AND DISCUSSION

The Temporary Emergency Housing Facility Project was developed as a "Campus Concept" comprised of four phases of which areas are in the final design stages and/or construction. This grant funding will be used to cover operation costs for the Tracy Temporary Emergency Housing Facility: Phase III. This project is intended to provide a site for those seeking shelter within the City limits and the approval of this item will accept the grant.

FISCAL IMPACT

Upon acceptance of this grant, the Mobility and Housing Department, Homeless Services Division will receive and appropriate $251,795 in grant funds from San Joaquin County Homelessness Housing Assistance and Prevention Round 3 allocation. The funding will be allocated for the operations services reflected below to continue with the operation of the Temporary Emergency Housing Facility: Phase III. The $251,795 grant is to be appropriated to the FY2023-24 Homeless Services division operating budget. There is no City match requirement for the acceptance of this grant.

Name:	**City of Tracy**		
Location:	370 W. Arbor Avenue, Tracy, CA 95304		
Activity:	Shelter Operations		
			HHAP Round 3 Budget
	Personnel Expenses	**FTE %**	**BUDGET**
CITY NET			
	CASE MANAGER	100.00	*$ 77,359*
TRACY COMMUNITY CONNECTION CENTER			
	STREET OUTREACH	100.00	*$ 50,998*
	STREET OUTREACH	100.00	*$ 39,750*
	STREET OUTREACH	0.50	*$ 7,903*
	***Total Personnel Expenses**		***$ 176,010***
	Non-Personnel Expenses	**# Months**	**BUDGET**
CITY NET	CLIENT MEALS/SUPPLIES	8	*$ 75,785*
	Total Non-Personnel Expenses		***$ 75,785***
Total Expenses			***$ 251,795***

CEQA DETERMINATION

A CEQA determination is not required of this item.

STRATEGIC PLAN

This agenda item supports City Council's Homelessness Strategic Plan.

ACTION REQUESTED OF THE CITY COUNCIL

The Tracy Homelessness Advisory Committee recommends that City Council adopt a resolution: 1) Authorizing the acceptance of a grant award from San Joaquin County Homelessness Housing Assistance and Prevention Round 3 allocation in the amount of $251,795 to partially fund operations costs of the Tracy Interim Shelter Site (renamed Phase III and Phase IV of the Temporary Emergency Housing Facility, CIP 71112); and 2) Appropriating $251,795 of the total grant funds to the Mobility and Housing Department, Homeless Services Division.

Prepared by: Virginia Carney, Homeless Services Manager

Reviewed by: Adriana Castaneda, Director of Mobility and Housing
Sara Cowell, Director of Finance
Brian MacDonald, Interim Assistant City Manager

Approved by: Midori Lichtwardt, Interim City Manager

ATTACHMENTS
Attachment A –City of Tracy HHAP 3 Subrecipient Agreement

SAN JOAQUIN COUNTY

2020 HOMELESS HOUSING, ASSISTANCE AND PREVENTION (HHAP) PROGRAM - ROUND 3 SUBRECIPIENT AGREEMENT

This SUBRECIPIENT AGREEMENT entered into, by and between San Joaquin County, A political subdivision of the State of California, hereinafter referred to as “COUNTY” and City of Tracy herein after referred to as "SUBRECIPIENT”. Collectively “COUNTY” and “SUBRECIPIENT” are the “Parties”.

The term of this SUBRECIPIENT AGREEMENT is the date of the Effective Date (_____) through the Expiration Date, June 30, 2026.

The COUNTY is hereby awarding the SUBRECIPIENT an amount not to exceed: $251,795.53 (the FUNDS) as applied for by the SUBRECIPIENT in its San Joaquin Continuum of Care HHAP Program Application (SUBRECIPIENT’S APPLICATION) submitted to the COUNTY, which is hereby made part of this SUBRECIPIENT Agreement.

The Parties agree to comply with the terms and conditions of the following Exhibits, which are hereby made part of this SUBRECIPIENT Agreement:

Exhibit A	Authority, Purpose and Scope of Work
Exhibit B	Budget Detail and Payment Provisions
Exhibit C	Terms and Conditions
Exhibit D	Special Terms and Conditions
Exhibit E	Final Budget

TOTAL NUMBER OF PAGES ATTACHED: ___ Pages

The effective date of this SUBRECIPIENT AGREEMENT shall be the date the last of the Parties signs this Agreement (the EFFECTIVE DATE).

IN WITNESS WHEREOF, THIS SUBRECIPIENT AGREEMENT HAS BEEN EXECUTED BY THE PARTIES HERETO.

SUBRECIPIENT’s NAME	
SUBRECIPIENT AUTHORIZED SIGNATURE	TITLE Homeless Services Manager
PRINTED NAME OF PERSON SIGNING Virginia Carney	DATE SIGNED
COUNTY AGENCY SIGNATURE	TITLE Assistant Director
PRINTED NAME OF PERSON SIGNING Matt Garber	DATE SIGNED

HHAP ROUND 3 SUBRECIPIENT AGREEMENT

EXHIBIT A

Authority, Purpose and Scope of Work

1. Authority

The State of California has established the Homeless Housing, Assistance, and Prevention Program ("HHAP" or "Program" or "grant") pursuant to Chapter 6 (commencing with Section 50216) of Part 1 of Division 31 of the Health and Safety Code. (Amended by Stats. 2021, Ch. 111, Sec. 4. (AB 140) Effective July 19, 2021.)

The Program is administered by the California lnteragency Council on Homelessness ("Cal ICH") in the Business, Consumer Services and Housing Agency ("Agency"). HHAP-3 provides flexible block grant funds to Continuums of Care, large cities (population of 300,000+) and counties to build on the regional coordination created through previous Cal ICH grant funding and support local jurisdictions in their unified regional responses to reduce and end homelessness.

This SUBRECIPIENT AGREEMENT along with all its exhibits ("AGREEMENT") is entered into by the COUNTY and the SUBRECIPIENT under the authority of, and in furtherance of the purpose of, the Program. In signing this AGREEMENT and thereby accepting this award of funds, the SUBRECIPIENT agrees to comply with the terms and conditions of the AGREEMENT, the NOFA under which the SUBRECIPIENT applied, the representations contained in the SUBRECIPIENT'S APPLICATION, and the requirements of the authority cited above.

2. Purpose

The general purpose of the Program is to provide one-time block grant funding to support regional coordination, and to expand or develop local capacity to address immediate homelessness challenges. Activities will be informed by a best-practices framework focused on moving homeless individuals and families into permanent housing and supporting the efforts of those individuals and families to maintain their permanent housing. In accordance with the authority cited above, an application was created and submitted by the SUBRECIPIENT for The FUNDS to be allocated for eligible uses as stated in Health and Safety Code section 50216.

3. Definitions

The following HHAP program terms are defined in accordance with Health and Safety Code section 50216, subdivisions (a) — (q):

A. "COUNTY" means San Joaquin County.

B. "SUBRECIPIENT" means a nonprofit, public agency or a for-profit entity.

C. "Continuum of care" means the same as defined by the United States Department of Housing and Urban Development at Section 578.3 of Title 24 of the Code of Federal Regulations.

HHAP ROUND 3 SUBRECIPIENT AGREEMENT
EXHIBIT A
Authority, Purpose and Scope of Work

D. "Coordinated Entry System" means a centralized or coordinated process developed pursuant to Section 578.7 of Title 24 of the Code of Federal Regulations, as that section read on January 10, 2019, designed to coordinate homelessness program participant intake, assessment, and provision of referrals. In order to satisfy this subdivision, a centralized or coordinated assessment system shall cover the geographic area, be easily accessed by individuals and families seeking housing or services, be well advertised, and include a comprehensive and standardized assessment tool.

E. "Council" means the Homeless Coordinating and Financing Council created pursuant to Section 8257 of the Welfare and Institutions Code.

F. "Emergency shelter" has the same meaning as defined in subdivision (e) of Section 50801.

G. "Homeless" has the same meaning as defined in Section 578.3 of Title 24 of the Code of Federal Regulations, as that section read on January 10, 2019.

H. "Homeless Management Information System"(HMIS) means the information system designated by a continuum of care to comply with federal reporting requirements as defined in Section 578.3 of Title 24 of the Code of Federal Regulations. The term "Homeless Management Information System" also includes the use of a comparable database by a victim services provider or legal services provider that is permitted by the federal government under Part 576 of Title 24 of the Code of Federal Regulations.

I. "Homeless point-in-time count" means the 2019 homeless point-in-time count pursuant to Section 578.3 of Title 24 of the Code of Federal Regulations. A jurisdiction may elect to instead use their 2017 point-in-time count if they can demonstrate that a significant methodology change occurred between the 2017 and 2019 point-in-time counts that was based on an attempt to more closely align the count with HUD best practices and undertaken in consultation with HUD representatives. A jurisdiction shall submit documentation of this to the agency by the date by which HUD's certification of the 2019 homeless point-in-time count is finalized. The agency shall review and approve or deny a request described in the previous sentence along with a jurisdiction's application for homeless funding.

J. "Homeless youth" means an unaccompanied youth between 12 and 24 years of age, inclusive, who is experiencing homelessness, as defined in subsection (2) of Section 725 of the federal McKinney-Vento Homeless Assistance Act (42 U.S.C. Sec. 11434a(2)). "Homeless youth" includes unaccompanied youth who are pregnant or parenting.

K. "Housing First" has the same meaning as in Section 8255 of the Welfare and Institutions Code, including all the core components listed therein.

L. "Navigation center" means a Housing First, low-barrier, service-enriched shelter focused on moving homeless individuals and families into permanent housing that provides

temporary living facilities while case managers connect individuals experiencing homelessness to income, public benefits, health services, shelter, and housing.

M. "Program" means the Homeless Housing, Assistance, and Prevention program established pursuant to this chapter.

4. Scope of Work

The Scope of Work ("Work") for this Agreement shall include uses that are consistent with Health and Safety Code section 50218.6, subdivision (e), and section 50220.7, subdivisions (a)(4)-(5) & (f), and any other applicable laws. Eligible uses include the following:

A. Rental assistance and rapid rehousing.

B. Operating subsidies in new and existing affordable or supportive housing units, emergency shelters, and navigation centers. Operating subsidies may include operating reserves.

C. Street outreach to assist persons experiencing homelessness to access permanent housing and services.

D. Services coordination, which may include access to workforce, education, and training programs, or other services needed to promote housing stability in supportive housing.

E. Systems support for activities necessary to create regional partnerships and maintain a homeless services and housing delivery system, particularly for vulnerable populations including families and homeless youth.

F. Delivery of permanent housing and innovative housing solutions such as hotel and motel conversions.

G. Prevention and shelter diversion to permanent housing.

H. New navigation centers and emergency shelters based on demonstrated need. Demonstrated need for purposes of this paragraph shall be based on the following:

i. The number of available shelter beds in the city, county, or region served by a continuum of care.

ii. The number of people experiencing unsheltered homelessness in the homeless point-in-time count.

iii. Shelter vacancy rate in the summer and winter months.

iv. Percentage of exits from emergency shelters to permanent housing solutions.

v. A plan to connect residents to permanent housing.

HHAP ROUND 3 SUBRECIPIENT AGREEMENT
EXHIBIT A
Authority, Purpose and Scope of Work

vi. Any new interim sheltering funded by HHAP – 3 funds must be low barrier, comply with Housing First as provided in Chapter 6.5 (commencing with Section 8255) of Division 8 of the Welfare and Institutions Code, and prioritize intervention other than congregate shelters.

I. Improvements to existing emergency shelters to lower barriers and increase privacy.

HHAP ROUND 3 SUBRECIPIENT AGREEMENT
EXHIBIT A
Authority, Purpose and Scope of Work

J.

5. COUNTY Contract Coordinator

The COUNTY'S Contract Coordinator for this AGREEMENT is the COUNTY'S Health Care Services Agency, Neighborhood Preservation Division. Unless otherwise instructed, any notice, report, or other communication requiring an original SUBRECIPIENT signature for this AGREEMENT shall be mailed to the COUNTY Contract Coordinator.

The Representatives during the term of this Agreement will be:

	GRANTEE	SUBRECIPIENT
ENTITY:	San Joaquin County	City of Tracy
SECTION/UNIT:	Neighborhood Preservation	
Address:	16988 S. Harlan Rd Lathrop, CA 95330	333 Civic Center Plaza Tracy, CA 95376
CONTRACT COORDINATOR:	Nancy Perez	Virginia Carney
PHONE NUMBER:	209-468-3139	209-831-6119
EMAIL ADDRESS:	nperez3@sjchcs.org	Virginia.carney@cityoftracy.org

All requests to update the SUBRECIPIENT information listed within this AGREEMENT shall be emailed to the COUNTY Health Care Services Agency - Neighborhood Preservation Division general email box at neighborhood@sjchcs.org. The SUBRECIPIENT reserves the right to change their representative and/or contact information at any time with notice to the COUNTY.

6. Effective Date, Term of Agreement, and Deadlines

A. This AGREEMENT is effective upon approval by the COUNTY (indicated by the signature provided by the COUNTY in the lower left section of page one, when signed by all parties.

B. Full Expenditure of the FUNDS

i. All FUNDS (100 percent) must be expended by June 30, 2026. Any FUNDS not expended by that date shall revert to the State General Fund.

HHAP ROUND 3 SUBRECIPIENT AGREEMENT
EXHIBIT A
Authority, Purpose and Scope of Work

7. Special Conditions

The COUNTY reserves the right to add any special conditions to this AGREEMENT it deems necessary to ensure that the goals of the Program are achieved.

HHAP ROUND 3 SUBRECIPIENT AGREEMENT

EXHIBIT B

Budget Detail and Payment Provisions

1. Budget Detail & Changes

The SUBRECIPIENT agrees that the FUNDS shall be expended on uses that support regional coordination and expand or develop local capacity to address immediate homelessness challenges. Such activities must be informed by a best-practices framework focused on moving homeless individuals and families into permanent housing and supporting the efforts of those individuals and families to maintain their permanent housing.

The SUBRECIPIENT shall expend the FUNDS on eligible activities as detailed in the final budget as referenced in Exhibit F. The SUBRECIPIENT shall submit an updated budget with the annual report that revises and reports all actual and projected expenditures of the FUNDS.

Changes may be made to the timing (e.g., fiscal year) of eligible use expenditures without prior approval by the County so long as the total expenditures (actual and projected) for each eligible use category remain the same as described in the final budget. Any decrease or increase to the total expenditures for any eligible use category must otherwise be approved by the COUNTY'S Contract Coordinator and his/her designee, in writing, before the SUBRECIPIENT may expend the FUNDS according to an alternative budget. The COUNTY'S Contract Coordinator will respond to SUBRECIPIENT with approval or denial of request. Failure to obtain written approval from the COUNTY'S Contract Coordinator or his/her designee as required by this section may be considered a breach of this AGREEMENT.

2. General Conditions Prior to Disbursement

The SUBRECIPIENT must submit the signed AGREEMENT, and initialed Exhibits A through D.

3. Disbursement of Funds

The FUNDS will be disbursed to the SUBRECIPIENT upon receipt, review and approval of the completed AGREEMENT.

The COUNTY agrees to distribute to the SUBRECIPIENT the total sum of the FUNDS over the term of this agreement on a reimbursement basis.

The SUBRECIPIENT shall submit invoices, receipts, or other sufficient proof of the SUBRECIPIENT's billing for the grant activity(ies) to the COUNTY and the COUNTY will distribute the FUNDS to the SUBRECIPIENT in the amount of those receipts or other sufficient proof.

4. Reimbursement

The FUNDS should not generally be obligated or expended prior to the effective date of this Agreement. However, the COUNTY acknowledges that there may be circumstances that would require reimbursement in order to prevent or address homelessness in a given jurisdiction. When considering a reimbursement, the following requirements are applicable:

A. Reimbursement is not permitted for activities occurring prior to September 7, 2021.

B. Reimbursement shall not supplant existing local funds for homeless housing, assistance, or prevention.

C. Approval from the COUNTY must be obtained prior to obtaining reimbursement.

5. Ineligible Costs

The FUNDS shall not be used for costs associated with activities in violation of any law or for any activities not consistent with the intent of the Program and the eligible uses identified in Health and Safety Code sections section 50220.7, subdivisions (a)(4)(B), (a)(5), (e), and (f).

The COUNTY reserves the right to request additional clarifying information to determine the reasonableness and eligibility of all uses of the funds made available by this AGREEMENT. If the SUBRECIPIENT or its funded sub-subrecipients use the FUNDS to pay for ineligible activities, the SUBRECIPIENT shall be required to reimburse these FUNDS to the COUNTY.

An expenditure which is not authorized by this AGREEMENT, or by written approval of the COUNTY Contract Coordinator or his/her designee, or which cannot be adequately documented, shall be disallowed and must be reimbursed to the COUNTY by the SUBRECIPIENT.

The COUNTY, at its sole and absolute discretion, shall make the final determination regarding the allowability of the FUNDS expenditures.

The FUNDS shall not be used to supplant existing local funds for homeless housing, assistance, or prevention.

HHAP ROUND 2 SUBRECIPIENT AGREEMENT
EXHIBIT C
Terms and Conditions

1. Termination and Sufficiency of Funds

A. Termination of AGREEMENT

The COUNTY may terminate this AGREEMENT at any time for cause by giving a minimum of 14 days notice of termination, in writing, to the SUBRECIPIENT. Cause shall consist of violations of any conditions of this AGREEMENT, any breach of contract as described in paragraph 6 of this Exhibit C; violation of any federal or state laws; or withdrawal of COUNTY'S expenditure authority.

2. Transfers

The SUBRECIPIENT may not transfer or assign by subcontract or novation, or by any other means, the rights, duties, or performance of this AGREEMENT or any part thereof, except with the prior written approval of the COUNTY and a formal amendment to this AGREEMENT to affect such subcontract or novation.

3. Reporting/Audits

A. Annual Report Deadlines

By December 31, 2023, and annually on that date thereafter until all funds have been expended, the SUBRECIPIENT shall submit an annual report to the COUNTY in a format provided by the COUNTY. If the SUBRECIPIENT fails to provide such documentation, the COUNTY may recapture any portion of the amount authorized by this Agreement with a 14-day written notification.

B. Reporting Requirements

The annual report shall contain detailed information in accordance with Health and Safety Code section 50221, subdivision (a). This information includes the following, as well as any additional information deemed appropriate or necessary by the County:

i. An ongoing tracking of the specific uses and expenditures of any FUNDS broken out by eligible uses listed, including the current status of those FUNDS.
ii. The number of homeless individuals served by the FUNDS in that year, and a total number served in all years of the Program, as well as the homeless populations served.
iii. The types of housing assistance provided, broken out by the number of individuals.
iv. Outcome data for an individual served through the FUNDS, including the type of housing that an individual exited to, the percent of successful housing exits, and exit types for unsuccessful housing exits.

In addition to the annual reports, the COUNTY requires the SUBRECIPIENT to submit quarterly expenditure reports due no later than 14 days following the end of each fiscal quarter. The SUBRECIPIENT shall submit a report to the COUNTY on a form and method provided by the COUNTY that includes the ongoing tracking of the specific uses and expenditures of any of the

HHAP ROUND 2 SUBRECIPIENT AGREEMENT
EXHIBIT C
Terms and Conditions

FUNDS broken out by eligible uses listed, including the current status of those FUNDS, as well as any additional information the agency deems appropriate or necessary.

The COUNTY may require additional supplemental reporting with written notice to the SUBRECIPIENT.

4. Auditing

The COUNTY reserves the right to perform or cause to be performed a financial audit. At the COUNTY'S request, the SUBRECIPIENT shall provide, at its own expense, a financial audit prepared by a certified public accountant.

A. If a financial audit is required by the COUNTY, the audit shall be performed by an independent certified public accountant.

B. The SUBRECIPIENT shall notify the COUNTY of the auditor's name and address immediately after the selection has been made. The contract for the audit shall allow access by the COUNTY to the independent auditor's working papers.

C. The SUBRECIPIENT is responsible for the completion of audits and all costs of preparing audits.

D. If there are audit findings, the SUBRECIPIENT must submit a detailed response acceptable to the COUNTY for each audit finding within 90 days from the date of the audit finding report.

5. Inspection and Retention of Records

A. Record Inspection

The SUBRECIPIENT agrees that COUNTY or its designee shall have the right to review, obtain, and copy all records and supporting documentation pertaining to performance under this AGREEMENT. The SUBRECIPIENT agrees to provide the COUNTY, or its designee, with any relevant information requested. The SUBRECIPIENT agrees to give the COUNTY or its designee access to its premises, upon reasonable notice and during normal business hours, for the purpose of interviewing employees who might reasonably have information related to such records, and of inspecting and copying such books, records, accounts, and other materials that may be relevant to an investigation of compliance with the HHAP program laws, the HHAP program guidance document published on the website, and this AGREEMENT.

B. Record Retention

The SUBRECIPIENT further agrees to retain all records described in subparagraph A for a minimum period of five (5) years after the termination of this AGREEMENT.

HHAP ROUND 2 SUBRECIPIENT AGREEMENT

EXHIBIT C

Terms and Conditions

If any litigation, claim, negotiation, audit, monitoring, inspection or other action has been commenced before the expiration of the required record retention period, all records must be retained until completion of the action and resolution of all issues which arise from it.

HHAP ROUND 2 SUBRECIPIENT AGREEMENT
EXHIBIT C
Terms and Conditions

6. Breach and Remedies

A. Breach of AGREEMENT

Breach of this AGREEMENT includes, but is not limited to, the following events:

i. SUBRECIPIENT's failure to comply with the terms or conditions of this AGREEMENT.
ii. Use of, or permitting the use of, FUNDS provided under this AGREEMENT for any ineligible activities.
iii. Any failure to comply with the deadlines set forth in this AGREEMENT.

B. Remedies for Breach of AGREEMENT

In addition to any other remedies that may be available to the COUNTY in law or equity for breach of this AGREEMENT, the COUNTY may:

i. Bar the SUBRECIPIENT from applying for future funds;
ii. Revoke any other existing HHAP award(s) to the SUBRECIPIENT;
iii. Require repayment of the FUNDS disbursed and expended under this AGREEMENT; and
iv. Seek, in a court of competent jurisdiction, an order for specific performance of the defaulted obligation or the appointment of a receiver to complete the technical assistance in accordance with HHAP requirements.

C. All remedies available to the COUNTY are cumulative and not exclusive.

D. The COUNTY may give written notice to the SUBRECIPIENT to cure the breach or violation within a period of not less than 15 days.

7. Waivers

No waiver of any breach of this AGREEMENT shall be held to be a waiver of any prior or subsequent breach. The failure of the COUNTY to enforce at any time the provisions of this AGREEMENT, or to require at any time, performance by the SUBRECIPIENT of these provisions, shall in no way be construed to be a waiver of such provisions nor to affect the validity of this AGREEMENT or the right of the COUNTY to enforce these provisions.

HHAP ROUND 2 SUBRECIPIENT AGREEMENT
EXHIBIT C
Terms and Conditions

8. Nondiscrimination

During the performance of this AGREEMENT, the SUBRECIPIENT and its sub-subrecipients shall not unlawfully discriminate, harass, or allow harassment against any employee or applicant for employment because of sex (gender), sexual orientation, gender identity, gender expression, race, color, ancestry, religion, creed, national origin (including language use restriction), pregnancy, physical disability (including HIV and AIDS), mental disability, medical condition (cancer/genetic characteristics), age (over 40), genetic information, marital status, military and veteran status, and denial of medical and family care leave or pregnancy disability leave. The COUNTY and SUBRECIPIENTS shall ensure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment. The SUBRECIPIENT and its sub-subrecipients shall comply with the provisions of California's laws against discriminatory practices relating to specific groups: the California Fair Employment and Housing Act (FEHA) (Gov. Code, § 12900 et seq.); the regulations promulgated thereunder (Cal. Code Regs., tit. 2, § 1 1000 et seq.); and the provisions of Article 9.5, Chapter 1, Part 1, Division 3, Title 2 of the Government Code (Gov. Code, SS 1 1135 - 11 139.5).

SUBRECIPIENT and its sub-subrecipients shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement.

9. Conflict of Interest

All SUBRECIPIENTs are subject to state and federal conflict of interest laws. For instance, Health and Safety Code section 50220.5, subdivision (i) states, "For purposes of Section 1090 of the Government Code, a representative of a county serving on a board, committee, or body with the primary purpose of administering funds or making funding recommendations for applications pursuant to this chapter shall have no financial interest in any contract, program, or project voted on by the board, committee, or body on the basis of the receipt of compensation for holding public office or public employment as a representative of the county."

Failure to comply with these laws, including business and financial disclosure provisions, will result in the application being rejected and any subsequent contract being declared void. Other legal action may also be taken. Additional applicable statutes include, but are not limited to, Government Code section 1090 and Public Contract Code sections 10410 and 10411.

10. Drug-Free Workplace Certification

Certification of Compliance: By signing this AGREEMENT, the SUBRECIPIENT hereby certifies, under penalty of perjury under the laws of State of California, that it and its sub-subrecipients will comply with the requirements of the Drug-Free Workplace Act of 1990 (Gov. Code, S 8350 et seq.) and have or will provide a drug-free workplace by taking the following actions:

Publish a statement notifying employees and sub-subrecipients that unlawful manufacture distribution, dispensation, possession, or use of a controlled substance is prohibited and specifying actions to be taken against employees or sub-subrecipients for violations, as required by Government Code section 8355, subdivision (a) (l).

HHAP ROUND 2 SUBRECIPIENT AGREEMENT
EXHIBIT C
Terms and Conditions

A. Establish a Drug-Free Awareness Program, as required by Government Code section 8355, subdivision (a)(2) to inform employees or sub-subrecipients about all of the following:

   i. The dangers of drug abuse in the workplace;
   ii. SUBRECIPIENT's policy of maintaining a drug-free workplace;
   iii. Any available counseling, rehabilitation, and employee assistance program; and
   iv. Penalties that may be imposed upon employees and sub-subrecipients for drug abuse violations.

B. Provide, as required by Government Code section 8355, subdivision (a)(3), that every employee and/or sub-subrecipient that works under this Agreement:

   i. Will receive a copy of SUBRECIPIENT's drug-free policy statement, and
   ii. Will agree to abide by terms of the COUNTY'S condition of employment or subcontract.

11. Child Support Compliance Act

For any AGREEMENT in excess of $100,000, the SUBRECIPIENT acknowledges in accordance with Public Contract Code 7110, that:

A. The SUBRECIPIENT recognizes the importance of child and family support obligations and shall fully comply with all applicable state and federal laws relating to child and family support enforcement, including, but not limited to, disclosure of information and compliance with earnings assignment orders, as provided in Chapter 8 (commencing with section 5200) of Part 5 of Division 9 of the Family Code; and

B. The SUBRECIPIENT, to the best of its knowledge is fully complying with the earnings assignment orders of all employees and is providing the names of all new employees to the New Hire Registry maintained by the California Employment Development Department.

12. Special Conditions — SUBRECIPIENT/SUB-SUBRECIPIENT

The SUBRECIPIENT agrees to comply with all conditions of this SUBRECIPIENT AGREEMENT including the Special Conditions set forth in Exhibit D. These conditions shall be met to the satisfaction of the County prior to disbursement of funds. The SUBRECIPIENT shall ensure that all sub-subrecipients are made aware of and agree to comply with all the conditions of this AGREEMENT and the applicable State requirements governing the use of the FUNDS. Failure to comply with these conditions may result in termination of this AGREEMENT.

A. The agreement between the SUBRECIPIENT and any sub-subrecipient shall require the SUBRECIPIENT and its sub-subrecipient, if any, to:

   i. Perform the work in accordance with Federal, State and Local housing and building codes, as applicable.

ii. Maintain at least the minimum State-required worker's compensation for those employees who will perform the work or any part of it.

iii. Maintain, as required by law, unemployment insurance, disability insurance, and liability insurance in an amount that is reasonable to compensate any person, firm or corporation who may be injured or damaged by the SUBRECIPIENT or any sub-subrecipient in performing the work or any part of it.

iv. Agree to include all the terms of this AGREEMENT in each subcontract.

13. Compliance with State and Federal Laws, Rules, Guidelines and Regulations

The SUBRECIPIENT agrees to comply with all state and federal laws, rules and regulations that pertain to construction, health and safety, labor, fair employment practices, environmental protection, equal opportunity, fair housing, and all other matters applicable and/or related to the HHAP program, the SUBRECIPIENT, its sub-subrecipients, and all eligible activities.

SUBRECIPIENT shall also be responsible for obtaining any and all permits, licenses, and approvals required for performing any activities under this AGREEMENT, including those necessary to perform design, construction, or operation and maintenance of the activities. SUBRECIPIENT shall be responsible for observing and complying with any applicable federal, state, and local laws, rules or regulations affecting any such work, specifically those including, but not limited to, environmental protection, procurement, and safety laws, rules, regulations, and ordinances. SUBRECIPIENT shall provide copies of permits and approvals to the COUNTY upon request.

14. Inspections

A. SUBRECIPIENT shall inspect any work performed hereunder to ensure that the work is being and has been performed in accordance with the applicable federal, state and/or local requirements, and this AGREEMENT.

B. The COUNTY reserves the right to inspect any work performed hereunder to ensure that the work is being and has been performed in accordance with the applicable federal, state and/or local requirements, and this AGREEMENT.

C. SUBRECIPIENT agrees to require that all work that is determined based on such inspections not to conform to the applicable requirements be corrected and to withhold payments to the sub-subrecipients until it is corrected.

15. Litigation

A. If any provision of this AGREEMENT, or an underlying obligation, is held invalid by a court of competent jurisdiction, such invalidity, at the sole discretion of the COUNTY, shall not affect any other provisions of this Agreement and the remainder of this

HHAP ROUND 2 SUBRECIPIENT AGREEMENT
EXHIBIT C
Terms and Conditions

AGREEMENT shall remain in full force and effect. Therefore, the provisions of this AGREEMENT are and shall be deemed severable.

B. The SUBRECIPIENT shall notify the COUNTY immediately of any claim or action undertaken by or against it, which affects or may affect this AGREEMENT or the COUNTY, and shall take such action with respect to the claim or action as is consistent with the terms of this AGREEMENT and the interests of the COUNTY.

HHAP ROUND 2 SUBRECIPIENT AGREEMENT

EXHIBIT D

Special Terms and Conditions

1. Any housing-related activities funded with the FUNDS, including but not limited to emergency shelter, rapid-rehousing, rental assistance, transitional housing and permanent supportive housing, must be in compliance or otherwise aligned with the core components of Housing First, pursuant to Welfare and Institutions Code section 8255, subdivision (b).

2. The SUBRECIPIENT shall regularly submit Project Service client-level data to the SJCoC's HMIS, except for victim service providers, who are not permitted to enter data into HMIS, and legal service providers, who may choose not to use HMIS if it is necessary to protect attorney-client privilege.

    A. If SUBRECIPIENT is a victim service provider it shall establish and operate a comparable database to HMIS that complies with HUD standards.

    B. The SUBRECIPIENT shall comply with policies and procedures set forth in the SJCoC HMIS Manual, and the COUNTY's HMIS Privacy, Security, and Data Quality Plans.

HHAP 3 - SHELTER OPERATIONS

Name:	**City of Tracy**
Location:	370 W. Arbor Avenue, Tracy, CA 95304
Activity:	Shelter Operations

			HHAP Round 3 Budget	
	Personnel Expenses	**FTE %**	**BUDGET**	
CITY NET				
	CASE MANAGER	100.00	*$*	*77,359*
TRACY COMMUNITY CONNECTION CENTER				
	STREET OUTREACH	100.00	*$*	*50,998*
	STREET OUTREACH	100.00	*$*	*39,750*
	STREET OUTREACH	0.50	*$*	*7,903*
	***Total Personnel Expenses**		***$***	***176,010***

	Non-Personnel Expenses	**# Months**	**BUDGET**	
CITY NET	CLIENT MEALS/SUPPLIES	8	*$*	*75,785*
	Total Non-Personnel Expenses		***$***	***75,785***

Total Expenses	***$***	***251,795***

*Benefits are included with the budget amounts for each employee

APPROVED AS TO FORM AND LEGALITY

_____
CITY ATTORNEY'S OFFICE

TRACY CITY COUNCIL

RESOLUTION NO. _____

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1) AUTHORIZING THE ACCEPTANCE OF A GRANT AWARD FROM SAN JOAQUIN COUNTY HOMELESSNESS HOUSING ASSISTANCE AND PREVENTION ROUND 3 IN THE AMOUNT OF $251,795 TO PARTIALLY FUND OPERATIONS COST OF THE TRACY INTERIM SHELTER SITE (RENAMED PHASE III AND PHASE IV OF THE TEMPORARY EMERGENCY HOUSING FACILITY, CIP 71112); AND 2) APPROPRIATING $251,795 OF THE TOTAL GRANT FUNDS TO THE MOBILITY AND HOUSING DEPARTMENT, HOMELESS SERVICES DIVISION

WHEREAS, on January 5, 2023, the City of Tracy Homeless Services Division applied for the HHAP Round 3 San Joaquin County allocation to the San Joaquin County Program Administrator for Homeless Initiatives; and

WHEREAS, the application included shelter operations, street outreach and services coordination funding requests in the amount of $1.4 Million dollars; and

WHEREAS, on March 29, 2023, San Joaquin County Homelessness Housing Assistance and Prevention Round 3 notified the City of Tracy that the funding request in the amount of $251,795 was selected for grant funding; and

WHEREAS, the grant provides funding to support shelter operations at the Tracy Interim Shelter Site; and

WHEREAS, City match is not required; and

WHEREAS, the Tracy Homelessness Advisory Committee heard this item on August 17, 2023 and recommended that the City Council adopt the proposed Resolution; now, therefore, be it

RESOLVED: That the City Council hereby accepts the grant award from San Joaquin County Homelessness Housing Assistance and Prevention Round 3 in the amount of $251,795 to provide funding to support shelter operations the Tracy Interim Shelter Site project; and be it

FURTHER RESOLVED: That the City Council hereby appropriates $251,795 of the total grant funds to the Mobility and Housing Department, Homeless Services Division.

* * * * * * * * * * * * * * *

The foregoing Resolution 2023-_____ was adopted by the Tracy City Council on September 5, 2023, by the following vote:

AYES: COUNCIL MEMBERS:
NOES: COUNCIL MEMBERS:
ABSENT: COUNCIL MEMBERS:
ABSTENTION: COUNCIL MEMBERS:

_____
NANCY D. YOUNG
Mayor of the City of Tracy, California

ATTEST:_____
ADRIANNE RICHARDSON
City Clerk and Clerk of the Council of the
City of Tracy, California

September 5, 2023

Agenda Item 1.Q

RECOMMENDATION

The Tracy Homelessness Advisory Committee recommends that the City Council adopt a resolution by a four-fifths vote (1) making a determination that compliance with standard procurement process is not in the best interest of the City and dispense the bidding requirements for the additional scope of work pursuant to California Public Contract Code Section 22050 and Tracy Municipal Code Section 2.20.270(a) and (2) approving an additional $135,000 for work to be performed by GradeTech, Inc., and approving an additional $30,110 for work to be performed by Tennyson Electric, Inc. for the Phase IV infrastructure and (3) approving a contract with a not-to-exceed amount of $435,000 with Grade Tech, Inc, and approving a contract with a not-to-exceed amount of $155,110 with Tennyson Electric, Inc.

EXECUTIVE SUMMARY

The Tracy Homelessness Advisory Committee recommends City Council make a determination that compliance with standard procurement process is not in the best interest of the City and dispense the bidding requirements for the additional scope of work pursuant to California Public Contract Code Section 22050 and Tracy Municipal Code Section 2.20.270(a) for the infrastructure work needed to prepare the Phase IV custom containers for occupancy.

City Council previously approved the additional anticipated work for the Phase IV custom containers in December of 2022, under Resolution 2022-197, with Tennyson Electric, Inc. and GradeTech, Inc., prior to the partial recission of Resolution 2022-121, under Resolution 2023-141.

The Tracy Homelessness Advisory Committee heard this item on August 17, 2023, and recommended that the City Council adopt the proposed Resolution.

BACKGROUND AND LEGISLATIVE HISTORY

On March 10, 2020, the Council adopted Resolution No. 2020-052, which declared a shelter crisis pursuant to California Government Code Section 8698.2. For the subsequent two years, the City actively pursued the development and construction of a temporary housing shelter on City-owned land located on Arbor Avenue to serve as an ongoing full-service temporary housing solution for the City's unsheltered (the Project).

On September 1, 2020, City Council authorized the creation of a Capital Improvement Project (CIP) for the Temporary Emergency Housing Project on Arbor Avenue, CIP 71112 (Project) to create a safe and dignified facility for residents experiencing homelessness.

On April 19, 2022, through Resolution No. 2022-052, Council awarded the Project in the amount of $1,978,480 to GradeTech, Inc. for Phase I, which consisted of demolition, rough grading, installation of underground utilities, and site preparation work. During construction numerous buried underground structures and abandoned utilities were encountered. The first change order with GradeTech, Inc. was to remove these unforeseen structures.

On August 16, 2022, Council adopted Resolution No. 2022-121, which reaffirmed an emergency shelter crisis as the City continued to experience an increasing number of unsheltered individuals. In addition to the declaration of an emergency, the Resolution authorized the City Manager to take requisite actions needed to expeditiously provide interim housing solutions. Lastly, the Resolution dispensed the competitive bidding requirements for professional services pursuant to Tracy Municipal Code Section 2.20.140(b)(6). On June 15, 2023, THAC was presented with an item to discuss and provide direction regarding Phase IV – Custom Containers at the Temporary Emergency Housing Facility. THAC members agreed to make a motion, during Council Items at the next City Council meeting, that the City Council hear the item directly on July 5, 2023.

On July 5, 2023, as part of the Phase IV interim shelter facility improvements, City Council authorized the purchase of eight (8) custom container dormitories from Linked Equipment under Resolution 2023-140.

The City Council previously awarded a construction contract to GradeTech, Inc. to conduct demolition, rough grading, installation of underground utilities, and design work for the Phase I work for the Temporary Emergency Housing Facility on Arbor Avenue, Capital Improvement Project (CIP) 71112 (Project) on April 19, 2022, pursuant to Resolution No. 2022-052. In December of 2022, under Resolution 2022-197, a change order to the GradeTech, Inc. contract for Phase I was approved for anticipated work in the amount of $300,000. Due to the delays related to the Phase IV containers, in early 2023, the anticipated work for Phase IV could not be completed. GradeTech requested that the Phase I contract be closed out, to release the contract retention, because the contract work had been completed in October 2022. To move forward with the completion, installation, and operation of custom containers (Phase IV) for the Project, additional construction work by GradeTech, Inc. requires City Council approval of an agreement in the amount of $435,000, which includes the initial $300,000 previously approved and an additional allocation of $135,000 from CIP 71112, is currently being requested.

The City Council also awarded a construction contract with Tennyson Electric, Inc., to install all electrical utilities for the Modulars (Phase III) and Custom Containers (Phase IV) sleeping quarters, under Resolution 2022-197 for work performed in the amount of $125,000 and $125,000 in anticipated electrical work. The Phase III work was performed under an agreement that only included Phase III work. Retroactive approval by City Council of an agreement with Tennyson Electric, Inc., in the amount of $155,110, which includes the $125,000 previously approved under Resolution 2022-197 and an additional allocation of $30,110 from CIP 71112, is requested.

Staff is requesting that the City Council approve contracts with GradeTech, Inc. and Tennyson Electric, Inc, and the additional allocations needed to complete the remaining preparation work for the containers and waive the bidding requirements under the Public Contract Code and Tracy Municipal Code due to the emergency need for housing and impending grant deadlines.

The City was awarded a grant from Health Plan of San Joaquin in the amount of $1.2 million dollars. To comply with the grant's requirements, the containers must be fully operational by October 31, 2023. In order to meet that deadline, these site improvements need to commence immediately for the completion of Phase IV Custom Containers.

ANALYSIS

The complexity and magnitude of the homelessness crisis, exacerbated by the COVID-19 pandemic, resulting supply chain shortages, and the limited supply of affordable permanent housing options in the City and throughout San Joaquin County, all have presented a significant immediate need for interim housing solutions in the City, including interim emergency housing. Concerns about the public health, safety, and welfare of unsheltered individuals increases as the months progress without options to shelter the unhoused.

The Resolution, adopted on August 16, 2022, directed the City Manager to take immediate and emergency actions necessary to implement interim housing solutions for Tracy's unsheltered population until the completion and opening of the Temporary Emergency Housing Facility on Arbor Road. As noted above, at the time of adopting Resolution No. 2022-121, the City was exploring the leasing of fully constructed modular units to locate on Arbor Road and did not anticipate undertaking additional construction activities at the site beyond what had already been completed as part of Phase I of the Temporary Emergency Housing Facility. As directed, per the Resolution, the City mobilized rapidly to undertake certain activities to install the interim housing solutions and operate them with adequate health and safety protections.

Additionally, California Public Contract Code Section 22050, subsection (a)(1), provides that, in the case of an emergency, a public agency, pursuant to a four-fifths vote, may take any directly related and immediate action required for that emergency, and procure the necessary equipment, services, and supplies for those purposes, without giving notice for bids to let contracts. Similarly, the Council may dispense bidding requirements required under the Public Contract Code under TMC section 2.20.270(a). The governing body must make a finding, based on substantial evidence set forth in the minutes of its meeting, that the emergency will not permit a delay resulting from a competitive solicitation for bids, and that the action is necessary to respond to the emergency. Under subsection (c)(1), the governing body shall review the emergency action at its next regularly scheduled meeting and, at every regularly scheduled meeting thereafter until the action is terminated, to determine, by a four-fifths vote, that there is a need to continue the action. The governing body shall terminate the action at the earliest possible date that conditions warrant so that the remainder of the emergency action may be completed by giving notice for bids to let contracts.

The City is currently in the process of implementing the installation and opening of the Phase IV custom containers, which will provide an additional 38 beds. This requires additional construction work, including utility connections for the containers to be occupied.

Tennyson Electric Inc. and GradeTech, Inc. have completed construction work under Phase III at the Temporary Emergency Housing Facility on Arbor Avenue.

At the July 5, 2023, City Council meeting, staff mentioned that additional trades will be required to complete undergrounding, and complete electrical work.

Due to the imminent need to provide housing solutions, the following contracts have been prepared to expedite installation for the Custom Containers:

Vendor	Summary	December 2022 Approved Amount	Amended Amount	Not to Exceed Amount
GradeTech, Inc.	Underground utilities and site improvements for the Phase IV custom containers	$300,000	$135,000	$435,000
Tennyson Electric, Inc.	Installation of all electrical connections, between the generators and the Phase IV Custom Containers	$125,000	$30,110	$155,110
	TOTAL			**$590,110**

FISCAL IMPACT

The total funding authorization under this request is $165,110, which is available in the project budget.

The City secured a grant of $1.2 Million from Health Plan of San Joaquin for the costs of the custom containers and interim site expenses related to Phase III and Phase IV. In addition, the City has committed funding from American Rescue Plan Act (ARPA) for the operations costs at the Temporary Housing Emergency Shelter.

As noted above, on December 6, 2022, pursuant to Resolution No. 2022-197, the Council approved $300,000 in anticipated work for GradeTech Inc. and $125,000 for Tennyson Electric Inc. An additional $135,000 for GradeTech, Inc. and an additional $30,110 for Tennyson Electric, Inc. is needed to fully fund the completion of the Phase IV infrastructure work.

Temporary Emergency Housing Facility – CIP 71112

Funding Source	Budget	Expenses	Encumbered (Committed)	Balance
Community Development Block Grant (s)	$ 836,294	$ 836,294	$ -	$ -
Homeless Housing, Assistance & Prevention	$ 743,282	$ 743,282	$ -	$ -
American Rescue Plan Act - SJ County (MOU B-8245)	$ 3,661,113	$ 3,493,819	$ 167,294	$ -
Housing Asset Funds (City)	$ 690,000	$ 159,192	$ 60,000	$ 470,808
American Rescue Plan Act - City of Tracy	$ 4,500,000	$ -	$ -	$ 4,500,000
Totals	$10,430,689	$ 5,232,587	$ 227,294	$ 4,970,808
Federal Funding	$ 3,000,000			$ 3,000,000
Totals	**$13,430,689**	**$ 5,232,587**	**$ 227,294**	**$ 7,970,808**

CEQA DETERMINATION

Government Code section 8698.4 exempts the application of the California Environmental Quality Act (CEQA) to various actions taken by public agencies to implement the construction of a homeless shelter in response to a declared shelter crisis. In addition, the interim solutions taken thus far are in furtherance of and related to the permanent solution that will be implemented, referred to as the Temporary Emergency Housing Facility on Arbor Avenue (CIP 71112). A Notice of Exemption was issued on October 16, 2020, for the Temporary Emergency Housing site at 500 Arbor Avenue in accordance with Government Code sections 65660-65662 for Low Barrier navigation Centers and Section 15269c) of the CEQA Guidelines (14 Cal. Code Regs. 15269(c) for (Emergency Projects). No environmental impacts beyond those already analyzed for the CIP exist; accordingly, no further CEQA analysis is needed.

STRATEGIC PLAN

This agenda item supports the Public Safety Strategic Priority, Implement the adopted Homelessness Strategic Plan. More specifically, by adopting this new resolution, the City Council would reaffirm their commitment to follow through with the strategic priorities set forth in their Strategic Plan.

ACTION REQUESTED OF THE CITY COUNCIL

The Tracy Homelessness Advisory Committee recommends that the City Council adopt a resolution by a four-fifths vote (1) making a determination that compliance with standard procurement process is not in the best interest of the City and dispense the bidding requirements for the additional scope of work pursuant to California Public Contract Code Section 22050 and Tracy Municipal Code Section 2.20.270(a) and (2) approving an additional $135,000 in anticipated work for a total not to exceed amount of $435,000 for GradeTech, Inc. and approving an additional $30,110 in anticipated work for a total not to exceed amount of $155,110 for Tennyson Electric Inc., and (3) approving a contract with a not-to-exceed amount of $435,000 with Grade Tech, Inc, and approving a contract with a not-to-exceed amount of $155,110 with Tennyson Electric, Inc.

Prepared by: Virginia Carney, Homeless Services Manager

Reviewed by: Adriana Castaneda, Director of Mobility and Housing
Sara Cowell, Director of Finance
Brian MacDonald, Interim Assistant City Manager

Approved by: Midori Lichtwardt, Interim City Manager

ATTACHMENTS
Attachment A- Staff Report from City Council Meeting December 6, 2022
Attachment B- Resolution 2022-197
Attachment C- Resolution 2022-052

December 6, 2022

Agenda Item 3.D

RECOMMENDATION

Staff recommends that the City Council adopt a resolution (1) ratifying, retroactively and prospectively, the following two construction contracts: (a) Tennyson Electric, Inc. (Tennyson) in the amount of $125,000 for work performed and $125,000 in anticipated work; (b) Tracy Grading & Paving (Tracy Grading) in the amount of $220,000 for work performed; (2) (a) Authorizing an appropriation of $470,000 from the City of Tracy's General Fund to fund the Tennyson and Tracy Grading contracts; and (b) amending the FY 2022-23 operating and capital budget to reflect such appropriation; (3) granting, retroactively and prospectively, to the City Manager additional authority to execute change orders to the contract awarded to GradeTech, Inc. for Capital Improvement Project (CIP) 71112 Arbor Temporary Emergency Housing Project in the original amount of $1,978,480 as follows: (a) $790,000 for work performed; and (b) $300,000 in anticipated work; and (4) adopting requisite findings under the California Environmental Quality Act.

EXECUTIVE SUMMARY

This agenda item is to provide a summary of various actions taken by staff to implement interim housing solutions for the declared shelter crisis and to receive ratification by the Tracy City Council (City Council) of these items. On August 16, 2022, the City Council adopted Resolution No. 2022-121 (Resolution), which reaffirmed an emergency shelter crisis as the City of Tracy (City) continues to experience an increasing number of unsheltered individuals. Due to the declaration of an emergency, the Resolution authorized the City Manager to take requisite actions needed to expeditiously provide interim housing solutions. The Resolution also dispensed the procurement requirements for professional services pursuant to Tracy Municipal Code (TMC) Section 2.20.140(b)(6).

At the time of adopting the Resolution, the City was exploring the leasing of fully-constructed modular units to locate on Arbor Avenue and did not anticipate undertaking additional construction activities at the site. However, due to various site constraints and logistical issues, the City Manager was forced to direct staff to rapidly undertake certain construction activities to install the units and operate them with adequate health and safety protections. To fully inform the City Council and the public, this agenda item summarizes certain actions taken by the City Manager to address the shelter emergency. Since the Resolution dispensed the competitive bidding requirements for professional services, the TMC requires that such authorizations be ratified by Council. By way of a separate agenda item, staff is requesting the City Council to dispense of bidding requirements under the California Public Contracts Code and the TMC.

In this agenda item, staff is requesting the City Council to take various actions needed to enable staff to implement the City Council's direction reflected in the Resolution: 1) ratification of additional activities undertaken by the City Manager pursuant to Resolution; (2) augmentation of the City Manager's contract authority for change orders to the GradeTech, Inc. contract previously awarded by the City Council; and (3) appropriation of General Fund amounts to fund additional construction work needed to implement the Resolution. These items are discussed in more detail below.

BACKGROUND AND LEGISLATIVE HISTORY

Given the complexity and magnitude of the homelessness crisis, further exacerbated by the COVID-19 pandemic, and the limited supply of affordable permanent housing options in the City and throughout San Joaquin County, there is a significant and immediate need for interim housing solutions in the City, including interim emergency housing. Concerns about the public health, safety, and welfare of unsheltered individuals grows as the months progress without options to shelter the unhoused.

On March 10, 2020, the Tracy City Council (Council) adopted Resolution No. 2020-050, which declared a shelter crisis pursuant to California Government Code Section 8698.2. For the next two years, the City actively pursued the development and construction of a temporary housing shelter on City-owned land located on Arbor Avenue to serve as an ongoing full-service temporary housing solution for the City's unsheltered (Temporary Emergency Housing Project, CIP 71112). On April 19, 2022, through Resolution No. 2022-052, the City Council awarded Capital Improvement Project (CIP) 71112 Arbor Temporary Emergency Housing Project in the amount of $1,978,480 to GradeTech, Inc. This award was for "Phase I" of the Temporary Emergency Housing Project, consisting of groundwork and utility construction. The City had anticipated opening the Temporary Emergency Housing Project (referred to as "Phase II") by December 2022. However, in the summer of 2022, the City incurred a significant setback, after opening bids for the installation of the predesigned and prefabricated housing structure for Phase II.

On August 16, 2022, the City Council adopted Resolution No. 2022-121, which reaffirmed an emergency shelter crisis as the City of Tracy continues to experience an increasing number of unsheltered individuals. In addition to the declaration of an emergency, the Resolution authorized the City Manager to take requisite actions needed to expeditiously provide interim housing solutions. The Resolution also dispensed the competitive bidding requirements for professional services pursuant to Tracy Municipal Code Section 2.20.140(b)(6).

Pursuant to the City Council direction granted in the Resolution, staff moved forward to house unsheltered residents of the City by installing prefabricated trailers. For the installation of the trailers, additional accommodations to the current site needed to be made, all of which were not with in the original scope of work for GradeTech's contract. New work needed to be done included, but not limited to, additional groundwork and utility connections (water, sewer, electrical), installation of fencing and signage, and procurement of generators and furniture. Details of the breakdown of these additional costs are provided below.

ANALYSIS

Homelessness is perhaps the most visible social problem in modern life in the nation's metropolitan areas. Since the early 1980s, cities throughout the country have experienced sustained increases in the numbers of visibly homeless and in the numbers of individuals seeking temporary shelter in public and privately-run facilities (see *Journal of Urban Economics*, article dated December 2001).

As noted above, the Resolution waived the competitive bidding requirements for professional services pursuant to Tracy Municipal Code Section 2.20.140(b)(6) to provide the City Manager quicker options to secure services from interim shelter solutions. At the time, neither the procurement of additional goods and services, nor additional construction work, had not been

contemplated, so they were not addressed in the Resolution. On November 1, 2022, through Resolution No. 2022-162, the City Council ratified a set of actions that had been taken by the City Manager to address the shelter emergency. This item includes additional actions for consideration and ratification by the City Council.

California Public Contracts Code Section 22050 provides that, in the case of an emergency, a public agency, pursuant to a four-fifths vote, may take any directly related and immediate action required for that emergency, and procure the necessary equipment, services, and supplies for those purposes, without giving notice for bids to let contracts. Section 22050 also allows a public agency, pursuant to a four-fifths vote, to delegate, by resolution, to the City Manager the authority to order any action required for the emergency. Similarly, the City Council may dispense bidding requirements under TMC section 2.20.270(a).

By way of a separate agenda item, staff is seeking the City Council to dispense of the bidding requirements under both the California Public Contracts Code and the TMC. Subject to approval of that item, staff is seeking, that through this agenda item, the City Council provide the requisite contract and budgetary authority staff needs to fully effectuate the Resolution.

As noted earlier, to quickly and appropriately respond to the shelter emergency and implement the Resolution, the City Manager has authorized various construction activities. The first component of work authorized related to additional groundwork and utility connections that were needed at the Arbor Avenue site. This work was appropriately effectuated as change orders to GradeTech's contract. Thus far, the existing change orders consist of work totaling $790,000, and an additional amount of change orders totaling $300,000 are anticipated to be needed to complete the requisite work. Staff is seeking that the Council grant to the City Manager, both retroactively and prospectively, the contract authority for these change orders to GradeTech's contract as the total amounts exceed the original authority that had been granted to the City Manager for change orders when the City Council awarded the contract to GradeTech.

In addition, to quickly address the shelter emergency, staff also employed the work of the construction contractors noted on Table 1, as they were immediately available to complete the needed work. The City Council needs to appropriate additional funds from the General Fund to satisfy this additional construction work.

TABLE 1 - ADDITIONAL CONSTRUCTION WORK PERFORMED TO ADDRESS SHELTER EMERGENCY

Vendor	**Summary**	**FY 2022/23**	**Total Not-to-Exceed Amount**
Tennyson Electric, Inc.	Installation of all Electrical Utilities for the Modulars and Containers sleeping quarters; funded by General Fund.	$125,000 Completed + Anticipated work $125,000	$250,000
Tracy Grading & Paving	Site grading for contingency shelter capacity; funded by General Fund.	$220,000 Completed	$220,000

FISCAL IMPACT

Funding for the change orders to GradeTech's contract has already been appropriated to the Temporary Emergency Housing Project, CIP 71112, which has sufficient funds remaining in the budget to pay the proposed change order. An additional appropriation of $470,000 from the City of Tracy's General Fund's fund balance is needed to pay Tennyson Electric, Inc., and Tracy Grading & Paving, as well as an amendment to the FY 2022-23 Operating and Capital Budget to reflect such appropriation.

PUBLIC OUTREACH / INTEREST

Several Public Outreach sessions were conducted by City Staff. A Town Hall style activity was conducted at the Homeless Advisory Committee meeting on August 22, 2022. At this meeting the community gave feedback and support for solutions to our shelter crisis.

COORDINATION

Coordinated efforts between City departments continue, including the Public Works Department, South San Joaquin County Fire Authority, Tracy Police Department, and the Code Enforcement team to proactively address issues related to homelessness and providing bi-weekly park clean-ups. These clean-ups also serve as an opportunity to educate the unsheltered population on available resources in the community and the upcoming transition plan once the shelter sites are onboard. The Ad Hoc Homeless Committee heard a summary of this item on October 20, 2022.

CEQA DETERMINATION

Government Code section 8698.4 exempts the application of the California Environmental Quality Act (CEQA) to various actions taken by public agencies to implement the construction of a homeless shelter in response to a declared shelter crisis. In addition, the interim solutions taken thus far are in furtherance of and related to the permanent solution that will be implemented, referred to as the Temporary Emergency Housing Project on Arbor Avenue (CIP 71112). A Notice of Exemption was issued on October 16, 2020 for the Temporary Emergency Housing site at 500 Arbor Avenue in accordance with Government Code sections 65660-65662 for Low Barrier navigation Centers and Section 15269(c) of the CEQA Guidelines (14 Cal. Code Regs. 15269(c) for Emergency Projects). No environmental impacts beyond those already analyzed for the CIP exist; accordingly, no further CEQA analysis is needed.

STRATEGIC PLAN

This agenda item supports the Public Safety Strategic Priority, Implement the adopted Homelessness Strategic Plan. More specifically, by adopting this new resolution, the City Council would reaffirm their commitment to follow through with the strategic priorities set forth in their Strategic Plan.

ACTION REQUESTED OF THE CITY COUNCIL

Staff recommends that the City Council adopt a resolution (1) ratifying, retroactively and prospectively, the following two construction contracts: (a) Tennyson Electric, Inc. (Tennyson) in the amount of $125,000 for work performed and $125,000 in anticipated work; (b) Tracy Grading

& Paving (Tracy Grading) in the amount of $220,000 for work performed; (2) (a) Authorizing an appropriation of $470,000 from the City of Tracy's General Fund to fund the Tennyson and Tracy Grading contracts; and (b) amending the FY 2022-23 operating and capital budget to reflect such appropriation; (3) granting, retroactively and prospectively, to the City Manager additional authority to execute change orders to the contract awarded to GradeTech, Inc. for CIP 71112 Arbor Temporary Emergency Housing Project in the original amount of $1,978,480 as follows: (a) $790,000 for work performed; and (b) $300,000 in anticipated work; and (4) adopting requisite findings under the California Environmental Quality Act.

Prepared by: Leisser Mazariegos, Associate Civil Engineer

Reviewed by: Kris Balaji, PMP, PE, Director of Development Services
Sara Cowell, Finance Director
Midori Lichtwardt, Assistant City Manager

Approved by: Michael Rogers, City Manager

APPROVED AS TO FORM AND LEGALITY

CITY ATTORNEY'S OFFICE

TRACY CITY COUNCIL

RESOLUTION 2022-197

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(1) RATIFYING, RETROACTIVELY AND PROSPECTIVELY, THE FOLLOWING TWO CONSTRUCTION CONTRACTS: (A) TENNYSON ELECTRIC, INC. (TENNYSON) IN THE AMOUNT OF $125,000 FOR WORK PERFORMED AND $125,000 IN ANTICIPATED WORK; (B) TRACY GRADING & PAVING (TRACY GRADING) IN THE AMOUNT OF $220,000 FOR WORK PERFORMED;

(2) (A) AUTHORIZING AN APPROPRIATION OF $470,000 FROM THE CITY OF TRACY'S GENERAL FUND TO FUND THE TENNYSON AND TRACY GRADING CONTRACTS; AND (B) AMENDING THE FY 2022-23 OPERATING AND CAPITAL BUDGET TO REFLECT SUCH APPROPRIATION;

(3) GRANTING, RETROACTIVELY AND PROSPECTIVELY, TO THE CITY MANAGER ADDITIONAL AUTHORITY TO EXECUTE CHANGE ORDERS TO THE CONTRACT AWARDED TO GRADETECH, INC. FOR CAPITAL IMPROVEMENT PROJECT (CIP) 71112 ARBOR TEMPORARY EMERGENCY HOUSING PROJECT IN THE ORIGINAL AMOUNT OF $1,978,480 AS FOLLOWS: (A) $790,000 FOR WORK PERFORMED; AND (B) $300,000 IN ANTICIPATED WORK; AND

(4) ADOPTING REQUISITE FINDINGS UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

WHEREAS, on March 10, 2020, the Tracy City Council (Council) adopted Resolution No. 2020-050, which declared a shelter crisis pursuant to California Government Code Section 8698.2; and

WHEREAS, for the next two years, the City of Tracy (City) actively pursued the development and construction of a temporary housing shelter on City-owned land located on Arbor Avenue to serve as an ongoing full-service temporary housing solution for the City's unsheltered (Temporary Emergency Housing Project, CIP 71112); and

WHEREAS, during this period, the City designed the facility and nearly completed Phase I of the Temporary Emergency Housing Project, consisting of groundwork and utility construction, and had anticipated opening the Temporary Emergency Housing Project by December 2022; and

WHEREAS, in the summer of 2022, the City experienced a significant setback after the opening of bids for the installation of the sprung structure, which would cause a significant delay in the completion of the Temporary Emergency Housing Project; and

WHEREAS, on August 16, 2022, due to this significant delay, the ongoing threat to the health and safety of the unsheltered population, and in anticipation of the necessity to protect

the unsheltered from exposure to harsh weather conditions during the upcoming winter season, Council adopted Resolution No. 2022-121 (Resolution), which reaffirmed an emergency shelter crisis, pursuant to California Government Code 8698.4, to immediately address the increasing number of unsheltered individuals within the City; and

WHEREAS, due to the declaration of an emergency, the Resolution authorized the City Manager to take requisite actions needed to expeditiously provide interim housing solutions; and,

WHEREAS, during this time the City was also exploring the leasing and purchasing of fully constructed modular units to locate on Arbor Avenue and did not anticipate undertaking additional construction activities at the site; and

WHEREAS, the City moved forward to house unsheltered residents of the City by installing prefabricated trailers; and

WHEREAS, to install these trailers, additional accommodations to the current site needed to be made, all of which were not within the original scope of work for GradeTech's contract, and included additional groundwork and utility connections (water, sewer, electrical), installation of fencing and signage, and procurement of generators and furniture; and

WHEREAS, on November 1, 2022, through Resolution No. 2022-162, the Council ratified a set of actions that had been taken by the City Manager to address the shelter emergency; now, therefore, be it

RESOLVED: That the City Council hereby ratifies, retroactively and prospectively, the following two construction contracts: (a) Tennyson Electric, Inc. (Tennyson) in the amount of $125,000 for work performed and $125,000 in anticipated work; (b) Tracy Grading & Paving (Tracy Grading) in the amount of $220,000 for work performed; and be it

FURTHER RESOLVED: That the City Council hereby authorizes an appropriation of $470,000 from the City of Tracy's general fund to fund the Tennyson and Tracy Grading contracts; and (b) Amends the FY 2022-23 operating and capital budget to reflect such appropriation; and be it

FURTHER RESOLVED: That the City Council hereby grants, retroactively and prospectively, to the City Manager additional authority to execute change orders to the contract awarded to GradeTech, Inc. for Capital Improvement Project (CIP) 71112 Arbor Temporary Emergency Housing Project in the original amount of $1,978,480 as follows: (a) $790,000 for work performed; and (b) $300,000 in anticipated work; and be it

FURTHER RESOLVED: That the City Council finds and determines that Government Code section 8698.4 exempts the application of the California Environmental Quality Act (CEQA) to various actions taken by public agencies to implement the construction of a homeless shelter in response to a declared shelter crisis, the interim solutions taken thus far are in furtherance of and related to the permanent solution that will be implemented, referred to as the Temporary Emergency Housing Project on Arbor Avenue (CIP 71112), a Notice of Exemption was issued on October 16, 2020, for the Temporary Emergency Housing Project in accordance with Government Code sections 65660-65662 for Low Barrier navigation Centers and Section 15269(c) of the CEQA Guidelines (14 Cal. Code Regs. 15269(c) for Emergency

Projects), no environmental impacts beyond those already analyzed for the CIP exist, and accordingly, no further CEQA analysis is needed.

* * * * * * * * * * * * * *

The foregoing Resolution 2022-197 was adopted by the Tracy City Council on the 6th day of December 2022, by the following vote:

AYES:	COUNCIL MEMBERS: ARRIOLA, BEDOLLA, DAVIS, VARGAS, YOUNG
NOES:	COUNCIL MEMBERS: NONE
ABSENT:	COUNCIL MEMBERS: NONE
ABSTENTION:	COUNCIL MEMBERS: NONE

NANCY D. YOUNG
Mayor of the City of Tracy, California

ATTEST:
ADRIANNE RICHARDSON
City Clerk and Clerk of the Council of
the City of Tracy, California

RESOLUTION 2022-052

AWARDING A CONSTRUCTION CONTRACT TO GRADE TECH, INC. OF SAN RAMON, CALIFORNIA, IN THE AMOUNT OF $1,978,480 FOR THE TEMPORARY EMERGENCY HOUSING PROJECT ON ARBOR AVENUE, DEMOLITION, ROUGH GRADING AND UNDERGROUND UTILITIES CONSTRUCTION PHASE 1, CIP 71112, WITH A NOT-TO-EXCEED BUDGET OF $2,473,100, AND AUTHORIZING THE CITY MANAGER TO APPROVE CHANGE ORDERS UP TO THE CONTINGENCY AMOUNT OF $197,848, IF NEEDED

WHEREAS, The Temporary Emergency Housing Project on Arbor Avenue, CIP 71112, is an approved project, and

WHEREAS, The first phase of the project was advertised for competitive bids on December 17, 2021, and December 24, 2021. One (1) bid were received and publicly opened via Tele-Conference at 2:00 p.m., on January 19, 2022 with the following results:

Contractor	**Base Bid**
Grade Tech, Inc. of San Ramon, CA	$1,978,480

WHEREAS, Grade Tech, Inc. of San Ramon, California was the apparent low bidder, and

WHEREAS, The bid analysis indicates their bid is "responsive" and the bidder is "responsible," and

WHEREAS, Tracy Municipal Code Section 2.20.090(b) authorizes the City Manager to approve change orders up to the contingency amount approved by City Council, and

WHEREAS, The recommended contingency amount for this project is $$197,848, or 10% of the contract, and

WHEREAS, The City Council has authorized a not to exceed budget for CIP of $1,144,522; including design, award of contract, construction management, and contingency;

Construction Bid	$1,978,480
Construction Management (10%)	$197,848
Design Support During Construction (5%)	$98,924
Contingency @ 10%	$197,848
Total Project Cost	**$2,473,100**

NOW, THEREFORE BE IT RESOLVED, That the City Council of the City of Tracy hereby awards a construction contract to Grade Tech, Inc, of San Ramon, California in the amount of $1,978,480 for the Temporary Emergency Housing Project on Arbor Avenue, Demolition, Rough Grading and Underground Utilities Construction Phase 1, CIP 71112, with a not-to-exceed budget of $2,473,100 and authorizes the City Manager to approve change orders up to the contingency amount of $197,848, if needed.

****

The foregoing Resolution 2022-052 was adopted by the Tracy City Council on the 19th day of April 2022, by the following vote:

AYES:	COUNCIL MEMBERS: ARRIOLA, BEDOLLA, DAVIS, VARGAS, YOUNG
NOES:	COUNCIL MEMBERS: NONE
ABSENT:	COUNCIL MEMBERS: NONE
ABSTAIN:	COUNCIL MEMBERS: NONE

MAYOR

ATTEST:

CITY CLERK

APPROVED AS TO FORM AND LEGALITY

_____
CITY ATTORNEY'S OFFICE

TRACY CITY COUNCIL

RESOLUTION NO. _____

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(1) **Making a determination that compliance with standard procurement process is not in the best interest of the City and dispense the bidding requirements for the additional scope of work pursuant to California Public Contract Code Section 22050 and Tracy Municipal Code Section 2.20.270(a) and;**

(2) **Approving an additional $135,000 in anticipated work for a total not to exceed amount of $435,000 for GradeTech, Inc. and expanding the scope of work in the amount of $30,110 in anticipated work for a total not to exceed amount of $155,110 for Tennyson Electric Inc.**

(3) **Approving a contract with a not-to-exceed amount of $435,000 with Grade Tech, Inc, and approving a contract with Tennyson Electric, Inc. with a not-to-exceed amount of $155,110.**

WHEREAS, on March 10, 2020, The Tracy City Council (Council) adopted Resolution No. 2020-050, which declared a shelter crisis pursuant to California Government Code Section 8698.2; and

WHEREAS, for the subsequent two years, the City actively pursued the development and construction of a temporary housing shelter on City-owned land located on Arbor Avenue to serve as an ongoing full-service temporary housing solution for the City's unsheltered (the Project); and

WHEREAS, on April 19, 2022, through Resolution No. 2022-052, Council awarded the Project in the amount of $1,978,480 to GradeTech, Inc. for Phase I, which consisted of demolition, rough grading, installation of underground utilities, and site preparation work. During construction numerous buried underground structures and abandoned utilities were encountered. The first change order with GradeTech, Inc. was to remove these unforeseen structures; and

WHEREAS, on September 1, 2020, City Council authorized the creation of a Capital Improvement Project (CIP) for the Temporary Emergency Housing Project on Arbor Avenue, CIP 71112 (Project) to create a safe and dignified facility for residents experiencing homelessness; and

WHEREAS, on August 16, 2022, Council adopted Resolution No. 2022-121, which reaffirmed an emergency shelter crisis as the City continued to experience an increasing number of unsheltered individuals; and

WHEREAS, due to the declaration of an emergency, the Resolution authorized the City Manager to take requisite actions needed to expeditiously provide interim housing solutions; and

WHEREAS, the Resolution dispensed the competitive bidding requirements for professional services pursuant to Tracy Municipal Code Section 2.20.140(b)(6); and

WHEREAS, on June 15, 2023 the Tracy Homelessness Advisory Committee (THAC) was presented with an item to discuss and provide direction regarding Phase IV – Custom Containers at the Temporary Emergency Housing Facility; and

WHEREAS, THAC members agreed to make a motion, during Council Items at the next City Council meeting, that the City Council hear the item directly on July 5, 2023; and

WHEREAS, July 5, 2023, as part of the Phase IV interim shelter facility improvements, City Council authorized the purchase of eight (8) custom container dormitories from Linked Equipment under Resolution 2023-140; and

WHEREAS, the City Council previously awarded a construction contract to GradeTech, Inc. to conduct demolition, rough grading, installation of underground utilities, and design work for the Phase I work for the Temporary Emergency Housing Facility on Arbor Avenue, Capital Improvement Project (CIP) 71112 (Project) on April 19, 2022, pursuant to Resolution No. 2022-052; and

WHEREAS, in December of 2022, under Resolution 2022-197, a change order to the GradeTech, Inc. contract for Phase I was approved for anticipated work in the amount of $300,000. Due to the delays related to the Phase IV containers, in early 2023, the anticipated work for Phase IV could not be completed; and

WHEREAS, GradeTech requested that the Phase I contract be closed out, and to release the contract retention, because the contract work had been completed in October 2022; and

WHEREAS, to move forward with the completion, installation, and operation of custom containers (Phase IV) for the Project, additional construction work by GradeTech, Inc. requires City Council approval of an amendment to the construction contract with GradeTech, Inc. in a not to exceed amount of $435,000, which includes the initial $300,000 previously approved and an additional allocation of $135,000 from CIP 71112, is currently being requested; and

WHEREAS, City Council also awarded a construction contract with Tennyson Electric, Inc., to install all electrical utilities for the Modulars (Phase III) and Custom Containers (Phase IV) sleeping quarters, under Resolution 2022-197 for work performed in the amount of $125,000 and $125,000 in anticipated electrical work; and

WHEREAS, Phase III work was performed under an agreement that only included Phase III work; and

WHEREAS, City Council approve an amendment to the construction contracts with Tennyson Electric, Inc., in a not to exceed amount of $155,110, which includes the $125,000 previously approved under Resolution 2022-197 and an additional allocation of $30,110 from CIP 71112, is requested; and

WHEREAS, staff is requesting that the City Council approve agreements with GradeTech, Inc. and Tennyson Electric, Inc, and the additional allocations to complete the remaining preparation work for the containers and waive the bidding requirements under the Public Contract Code and Tracy Municipal Code due to the emergency need for housing and impending grant deadlines; and

WHEREAS, the City was awarded a grant from Health Plan of San Joaquin in the amount of $1.2 Million dollars and in order to comply with the grant's requirements, the containers must be fully operational by October 31, 2023; and

WHEREAS, in order to meet that deadline, these site improvements need to commence immediately for the completion of Phase IV Custom Containers; and

WHEREAS, The Tracy Homelessness Advisory Committee heard this item on August 17, 2023 and recommended that the City Council adopt the proposed Resolution; now, therefore, be it,

RESOLVED: That the City Council makes a determination that compliance with standard procurement process is not in the best interest of the City, and that the City may dispense with the bidding requirements for the additional scope of work, pursuant to California Public Contract Code Section 22050 and Tracy Municipal Code Section 2.20.270(a); and be it

FUTHER RESOLVED: That the City Council approves an additional $135,000 in anticipated work for a total not to exceed amount of $435,000 for GradeTech, Inc. and expanding the scope of work in the amount of $30,110 in anticipated work for a total not to exceed amount of $155,110 for Tennyson Electric Inc; and be it

FURTHER RESOLVED: That the City Council approve Phase IV Interim Infrastructure Improvements Project Contract with a not-to-exceed amount of $435,000 with Grade Tech, Inc, and approving a contract with Tennyson Electric, Inc. with a not-to-exceed amount of $155,110.

* * * * * * * * * * * * * *

The foregoing Resolution 2023-_____ was adopted by the Tracy City Council on September 5, 2023, by the following vote:

AYES:	COUNCIL MEMBERS:
NOES:	COUNCIL MEMBERS:
ABSENT:	COUNCIL MEMBERS:
ABSTENTION:	COUNCIL MEMBERS:

_____
NANCY D. YOUNG
Mayor of the City of Tracy, California

ATTEST:_____
ADRIANNE RICHARDSON
City Clerk and Clerk of the Council of the
City of Tracy, California

September 5, 2023

Agenda Item 1.R

RECOMMENDATION

Staff recommends that the City Council adopt the resolution (1) authorizing the Mayor to sign terms and conditions of accepting the grant award from the Airport Improvement Program through the Federal Aviation Administration (FAA) for grant agreement AIP #3-06-0259-025-2023 in the amount of $162,718 for the design and construction for the Crack Seal and Slurry Seal of the Tee Hangar Taxilanes at the Tracy Municipal Airport, and (2) Appropriating the additional grant funding of $39,418 to CIP 77593.

EXECUTIVE SUMMARY

Per the Airport Pavement Maintenance Management Plan (PMMP) accepted by the City of Tracy in 2013, it was recommended to perform crack repair, seal cracks, and seal coat the Tee Hangar Taxilanes in the North Hangar area in 2023.

To meet these maintenance needs, the City submitted grant applications to the Federal Aviation Administration (FAA). Staff requested funding for the following construction project: Crack Seal and Slurry Seal of the Tee Hangar Taxilanes at the Tracy Municipal Airport. As such, the City is being awarded a grant in September 2023 from the Federal Aviation Administration (FAA) to complete the project. The FAA will pay for 90% of grant eligible project costs through the Airport Improvement Program (AIP). The City and the State of California Division of Aeronautics will supply the matching funds to fulfill the grant obligation.

BACKGROUND AND LEGISLATIVE HISTORY

The Tee Hangar Taxilanes of the North Hangar Area of the airport were built in two phases,1975 and 1985, to accommodate growth at the Tracy Municipal Airport. In 2013, a Pavement Maintenance Management Study of Tracy Municipal Airport was performed by Brandley Engineering through an FAA Airport Improvement Project. At that time, the pavement conditions of the existing North Hangar Area Taxilanes were found to be fair to very poor at that time with Pavement Conditions Indices (PCI) ranging between 24 to 44. The recommendation of the Pavement Maintenance Management Plan (PMMP) was to remove and reconstruct existing sections in 2014 and in 2023, perform crack repair, seal cracks, and seal coat the area. Staff submitted a request to the FAA for an Airport Capital Improvement Program grant to meet the recommended guideline in April of 2023.

Engineering staff worked with Brandley Engineering to prepare the plans and specifications for the following project:

- CIP 77593 - Slurry Seal Tee Hangar Taxi Lanes Project to be funded by an FAA Airport Improvement Program Grant.

The City has submitted a grant application to the Federal Aviation Administration (FAA) requesting funding for the construction of CIP 77593 which includes crack seal and slurry seal of the Tee Hangar Taxilanes, at the Tracy Municipal Airport with funding coming from the AIP program.

ANALYSIS

Accepting this grant will allow the City to complete CIP 77593 - Slurry Seal Tee Hangar Taxi Lanes Project.

The total estimated cost of this project is as follows:

Construction Cost	$98,798
Administration	$4,000
Preliminary, Engineering Design, Preparation of Plans and Specs	$31,000
Design Engineering through Bidding and Award	$4,000
Engineering Design During Construction/ Final Closeout	$13,000
Residential Engineering, Testing and Inspection	$30,000
Total Project Cost	**$180,798**
FAA Participation- Entitlement/Discretionary	$162,718
Sponsor Local Match + State Matching Grant	$18,080

Funding for this grant comes from the FAA's AIP annual entitlement for the City of Tracy. If the City chooses to not accept this grant, the City will forfeit $120,000 of AIP entitlement funds that are set to lapse this year.

Upon acceptance of this grant, the award of the construction contract to complete this project will be brought forward to City Council for approval at the October 3, 2023, City Council meeting.

FISCAL IMPACT

CIP 77593, Slurry Seal Tee Hangar Taxi Lanes Project, has an approved budget of $123,300 from FAA funding, based on an estimated FAA Grant amount prior to receiving the award. However, an appropriation is necessary for an additional $39,418 to the project to match the full grant award of $162,718.

COORDINATION

Engineering staff coordinated with the Mobility & Housing Department and the Airport Engineering consultant firm during the application phase of the project.

CEQA/NEPA DETERMINATION

On January 26, 2023, the FAA had determined the proposed project is Categorically Excluded pursuant to FAA Order 1050.1F as it relates to the National Environmental Policy Act of 1969, as amended (NEPA). No further federal environmental disclosure documentation for the project is necessary for NEPA purposes.

STRATEGIC PLAN

This agenda item supports the Quality-of-Life Strategic Priority which is to provide an outstanding quality of life by enhancing the City's amenities, business mix and services and cultivating connections to promote positive change and progress in our community.

ACTION REQUESTED OF THE CITY COUNCIL

Staff recommends that the City Council adopt the resolution (1) authorizing the Mayor to sign terms and conditions of accepting the grant award from the Airport Improvement Program through the Federal Aviation Administration (FAA) for grant agreement AIP #3-06-0259-025-2023 in the amount of $162,718 for the design and construction for the Crack Seal and Slurry Seal of the Tee Hangar Taxilanes at the Tracy Municipal Airport, and (2) appropriating the additional grant funding of $39,418 to CIP 77593.

Prepared by: Ilene Macintire, Senior Civil Engineer
Paula Jessup, Airport Manager

Reviewed by: Adriana Castaneda, Mobility and Housing Director
Sara Cowell, Finance Director
Brian MacDonald, Interim Assistant City Manager

Approved by: Midori Lichtwardt, Interim City Manager

APPROVED AS TO FORM AND LEGALITY

_____
CITY ATTORNEY'S OFFICE

TRACY CITY COUNCIL

RESOLUTION NO. _____

AUTHORIZING (1) THE MAYOR TO SIGN TERMS AND CONDITIONS OF ACCEPTING THE GRANT AWARD FROM THE AIRPORT IMPROVEMENT PROGRAM THROUGH THE FEDERAL AVIATION ADMINISTRATION (FAA) FOR GRANT AGREEMENT AIP #3-06-0259-025-2023 IN THE AMOUNT OF $162,718 FOR THE DESIGN AND CONSTRUCTION FOR THE CRACK SEAL AND SLURRY SEAL OF THE TEE HANGAR TAXILANES AT THE TRACY MUNICIPAL AIRPORT, AND (2) APPROPRIATING THE ADDITIONAL GRANT FUNDING $39,418 TO CIP 77593

WHEREAS, the Airport Pavement Maintenance Management Plan (PMMP), accepted by the City of Tracy in 2013, advised to perform crack repair, seal cracks, and seal coat the Tee Hangar Taxilanes in the North Hangar area in 2023; and

WHEREAS, the Crack Seal and Slurry Seal of the Tee Hangar Taxilanes is an approved FAA project to meet those maintenance requirements; and

WHEREAS, to meet these maintenance requirements, the City received grant funding from the Federal Aviation Administration (FAA) in the amount of $162,718 from the Airport Improvement Program for the design and construction for the Crack Seal and Slurry Seal of the Tee Hangar Taxilanes at the Tracy Municipal Airport; and

WHEREAS, CIP 77593, Slurry Seal Tee Hangar Taxi Lanes Project, has an approved budget of $123,300, based on an estimated FAA Grant amount prior to receiving the award; and

WHEREAS, an appropriation is necessary for an additional $39,418 to the project to match the full grant award total of $162,718; now, therefore, be it

RESOLVED: That the above recitals are true and correct; and be it

FURTHER RESOLVED: That the City Council of the City of Tracy hereby authorizes the Mayor to sign terms and conditions of accepting the Airport Improvement Program Grant award through the Federal Aviation Administration (FAA) for grant agreement AIP #3-06-0259-025-2023 in the amount of $162,718 for the design and construction for the Crack Seal and Slurry Seal of the Tee Hangar Taxilanes at the Tracy Municipal Airport; and be it

FURTHER RESOLVED: That the City Council of the City of Tracy authorizes the appropriating the additional grant funding of $39,418 to CIP 77593.

* * * * * * * * * * * * * * *

The foregoing Resolution 2023-_____ was adopted by the Tracy City Council on September 5, 2023, by the following vote:

AYES:	COUNCIL MEMBERS:
NOES:	COUNCIL MEMBERS:
ABSENT:	COUNCIL MEMBERS:
ABSTENTION:	COUNCIL MEMBERS:

_____
NANCY D. YOUNG
Mayor of the City of Tracy, California

ATTEST:_____
ADRIANNE RICHARDSON
City Clerk and Clerk of the Council of the
City of Tracy, California

September 5, 2023

Agenda Item 3.A

RECOMMENDATION

Staff recommends that Council conduct a public hearing to consider declaring the existence of weeds, rubbish, refuse, and flammable materials on each of the parcels listed in Exhibit "A" to this Agenda Item a public nuisance; hear and consider objections to said declaration and to the potential abatement thereof; and adopt a resolution authorizing the South San Joaquin County Fire Authority ("Authority") staff to abate said nuisances and directing Authority and City staffs to recover the costs of abatement in accordance with the requirements of the Joint Powers Agreement of the South San Joaquin County Fire Authority and the Tracy Municipal Code.

EXECUTIVE SUMMARY

The South San Joaquin County Fire Authority ("Fire Authority") performs inspections on its own and after complaints are received from citizens regarding the existence of weeds, rubbish, refuse and flammable material on residential and commercial parcels. Abatement notices are sent to parcel owners within the City when the parcels are deemed to be a public nuisance and dangerous to the public health and safety by Fire Authority staff.

The notice states the time and date of the Public Hearing to be conducted by the City Council to address any and all objections to the proposed abatement and, as necessary, authorize the Fire Authority staff to direct the Fire Authority's contractor to abate parcels Council finds to be a nuisance.

DISCUSSION

Under the Joint Powers Agreement of the South San Joaquin County Fire Authority ("JPA") Section 3.1(A)(3), the Fire Authority is responsible to coordinate abatement activities for hazardous materials and nuisances. Pursuant to the Tracy Municipal Code, a Public Hearing is required prior to the abatement of any parcels. Sections 4.12.250 through 4.12.340 of the Tracy Municipal Code set forth the procedure for the City to abate weeds, rubbish, refuse and flammable material on private property.

Pursuant to Tracy Municipal Code, Section 4.12.280, the Fire Authority sent a notice to the property owner(s) listed in Exhibit "A" to this staff report. This notice was sent after multiple unsuccessful attempts to obtain voluntary compliance. The notice required the said owner to abate weeds, rubbish, refuse and flammable material on his/her parcel within twenty (20) days, and informed the property owner(s) that a Public Hearing would be conducted on September 5, 2023, where any protests regarding the notice to abate would be heard. The Tracy Municipal Code provides that upon failure of the owner, or authorized agent, to abate within 20 days from the date of notice, the City will perform the necessary work by private contractor and the cost of such work will be made a personal obligation of the owner, or become a tax lien against the property.

Under the provisions of Tracy Municipal Code, Section 4.12.290, and barring any objections allowed by Council at the hearing, the Fire Authority will proceed at Council's direction with instructing the Fire Authority's contractor to perform weed, rubbish, refuse and flammable material abatement on the parcels listed in Exhibit "A". Section 3.1(A)(3) of the JPA also requires the Fire Authority to work with Member Agencies to recover the costs of abatement from the owners of the parcels. Per the Tracy Municipal Code, property owners are liable for the cost of abatement and will be billed for the actual cost of the Fire Authority's contractor's services, plus a twenty-five percent administrative charge are billed to the property owner. All unpaid assessments will be filed with the San Joaquin County Auditor Controller's office to establish a lien on the property.

STRATEGIC PLAN

This agenda item is a routine operational item and does not relate to the Council's Strategic Plans.

FISCAL IMPACT

There is no fiscal impact to the City. Weed abatement services are provided on a cost recovery basis. Actual costs incurred by the City to provide weed abatement services plus a twenty-five percent administrative charge are billed to the property owner.

ACTION REQUESTED OF THE CITY COUNCIL

That City Council conduct a Public Hearing to hear and consider any and all objections to the proposed abatement, and by resolution, declare the weeds, rubbish, refuse, and flammable material located at the parcels listed within Exhibit "A" to be a nuisance, authorize the Fire Authority to direct the Fire Authority's contractor to abate such nuisance, and authorize the Fire Authority's and City's staffs to recover the costs of abatement in accordance with the requirements of the JPA and Tracy Municipal Code.

Prepared by: Timothy Spears, Fire Marshal

Reviewed by: Randall Bradley, Fire Chief
Sara Cowell, Director of Finance
Karin Schnaider, Assistant City Manager

Approved by: Midori Lichtwardt, Interim City Manager

ATTACHMENTS

1. Exhibit A – List of Parcels
2. Proposed Resolution Declaring the Existence of Weeds, Rubbish, Refuse and Flammable Material on the Parcels Listed in Exhibit "A" A Public Nuisance, Authorizing the Fire Authority to Abate Said Public Nuisance, and Authorizing Fire Authority and City Staffs to Recover the Costs of Abatement from the Property Owners

South San Joaquin County Fire Authority Weed Abatement						
APN	**SITUS ADDRESS**	**NAME/BUSINESS**	**MAILING ADDRESS**	**CITY**	**STATE**	**ZIP**
234-070-04	800 Beechnut Ave	Texaco Downstream Properties Inc. ETL	PO BOX 1392	Bakersfield	CA	93302
238-050-20	2480 W Byron Rd	Patel Panchaksha C ETAL	469 W Bonaventure Ave.	Mountain House	CA	95391

Attachment 2

APPROVED AS TO FORM AND LEGALITY

_____
CITY ATTORNEY'S OFFICE

TRACY CITY COUNCIL

RESOLUTION 2023-_____

---

(1) DECLARING THE EXISTENCE OF WEEDS, RUBBISH, REFUSE, AND FLAMMABLE MATERIAL ON THE PARCELS LISTED IN EXHIBIT "A" A PUBLIC NUISANCE;

(2) AUTHORIZING THE SOUTH SAN JOAQUIN COUNTY FIRE AUTHORITY STAFF TO DIRECT ITS CONTRACTOR TO ABATE SAID PUBLIC NUISANCE; AND

(3) AUTHORIZING THE SOUTH SAN JOAQUIN COUNTY FIRE AUTHORITY STAFF AND CITY OF TRACY STAFF TO RECOVER THE COSTS OF ABATEMENT FROM THE PROPERTY OWNERS IN ACCORDANCE WITH THE REQUIREMENTS OF THE JOINT POWERS AGREEMENT OF THE SOUTH SAN JOAQUIN COUNTY FIRE AUTHORITY AND THE TRACY MUNICIPAL CODE.

WHEREAS, Pursuant to Tracy Municipal Code, Section 4.12.280, the South San Joaquin County Fire Authority ("Fire Authority") staff mailed, via certified mail, a notice to each of the owners of record of the properties listed within Exhibit "A", that the existence of weeds, rubbish, refuse and flammable material on their properties was determined by the Fire Authority and the City to be a public nuisance and dangerous to public health and safety of the inhabitants of the City pursuant to Section 4.12.260 of the Tracy Municipal Code; and

WHEREAS, Each of the notices included an order to abate said public nuisance within twenty (20) days and informed each property owner of its opportunity to appear and object to the determination of public nuisance and abatement order at a public hearing before the City Council on September 5, 2023; and

WHEREAS, Objections, if any, to said declarations of public nuisance and abatement orders have been heard and considered, and

WHEREAS, Weed abatement services are provided on a cost recovery basis. Actual costs incurred by the Fire Authority and the City of Tracy to provide weed abatement services are billed to the property owner; now, therefore, be it

RESOLVED, That the City Council of the City of Tracy declares the weeds, rubbish, refuses and flammable material on the parcels listed on Exhibit "A" to be a public nuisance, authorizes Fire Authority staff to order the Fire Authority's contractor to abate said public nuisances on the listed parcels, and further authorizes the Fire Authority's and City

of Tracy's staffs to recover the costs of abatement in accordance with the requirements of the Joint Powers Agreement for the Fire Authority and the City of Tracy Municipal Code.

****

The foregoing Resolution 2023- was passed and adopted by the Tracy City Council on the 5th day of September 5, 2023, by the following vote:

AYES:	COUNCIL MEMBERS:
NOES:	COUNCIL MEMBERS:
ABSENT:	COUNCIL MEMBERS:
ABSTENTION:	COUNCIL MEMBERS:

_____
NANCY D. YOUNG
Mayor of the City of Tracy, California

ATTEST: _____
ADRIANNE RICHARDSON
City Clerk and Clerk of the Council of the
City of Tracy, California

September 5, 2023

Agenda Item 3.B

RECOMMENDATION

Staff recommends that City Council review and discuss the Wastewater Master Plan Update.

EXECUTIVE SUMMARY

This is an informational item in which City staff and consultants will provide a summary of the proposed Wastewater Master Plan Update (Update). This Update will update the City's wastewater infrastructure needed to serve new development identified in the City's General Plan and the growing population of the City.

BACKGROUND AND LEGISLATIVE HISTORY

The City's existing Wastewater Master Plan (Master Plan) was approved in January 2013. The Master Plan was based on the City's 2011 General Plan. The City has incorporated many general plan amendments since the 2011 adoption and has seen a significant increase in residential and commercial development. The changes to the general plan and increased development has resulted in the need for an update to all seven of the City's Master Plans. The General Plan, as amended, identifies existing and new areas of development within and around the existing City limits. It includes areas east of the City, up to Chrisman Road, and west of the City, up to the Altamont Pass south of I-205, as well as the Larch Clover area both north and south of I-205.

ANALYSIS

The Update provides an evaluation of the required backbone wastewater collection system facilities required to serve the City's existing and future needs. The State endured five years of drought starting in 2012, including the driest four consecutive years in California history. These unprecedented conditions led to State mandated water conservation, significant surface water supply reductions and curtailments and legislation establishing new water efficiency standards. This water conservation also resulted in a reduction in per capita wastewater flow generation for existing and future planned development. This has resulted in a general reduction in the required wastewater facilities, despite the City's continued growth.

The Update was recently revised based on flows seen at the wastewater treatment plant during the significant and unprecedented rainfall at the end of 2022. Revisions to the existing and peak wet weather flow (PWWF) were included to account for this new information. The presentation (Attachment A) will include a summary of what is included in the Update and will include the following:

- An overview of our current wastewater system.
- Provide an explanation of the work that was completed for the Update.
- Review of the hydraulic model used.
- An explanation of the existing capacity.
- Information on planned future development and how that will affect wastewater flows.
- A comparison of existing flows, projected flows in 2040 and projected flows at Build-out of the City of Tracy.

- Wastewater Treatment Plant expansion needs for the future.
- Recommended infrastructure to serve future growth.
- The costs associated with the recommended improvements.
- Include new gravity sewers, new pumping stations and force mains and future needs for wastewater treatment.

FISCAL IMPACT

There is no fiscal impact associated with the approval of the Update. The cost of completion of the Update was funded from program management fees collected through our development impact fee program. The cost of construction of the physical infrastructure listed in the Master Plan and the Update will be funded through development impact fees paid by new developments or wastewater rates collected from existing users, as outlined in the Master Plan.

PUBLIC OUTREACH / INTEREST

A Public Outreach Meeting for the Wastewater Master Plan Update is planned for August 2023.

COORDINATION

The City's Engineering Division coordinated with our Operations and Utilities Department and Carollo Engineers, Inc. to complete this update.

CEQA DETERMINATION

This is an informational report only and no environmental review is necessary at this time.

STRATEGIC PLAN

This agenda item supports the City of Tracy's Quality of Life Strategic Priority, which is to provide an outstanding quality of life by enhancing the City's amenities, business mix and services and cultivating connections to promote positive change and progress in our community.

ACTION REQUESTED OF THE CITY COUNCIL

Staff recommends that City Council review and discuss the Wastewater Master Plan Update.

Prepared by: Veronica Child, Management Analyst II

Reviewed by: Koosun Kim, PE, City Engineer / Assistant Director of Development Services
Sara Cowell, Finance Director
Bijal M. Patel, City Attorney
Karin Schnaider, Assistant City Manager

Approved by: Midori Lichtwardt, Interim City Manager

ATTACHMENTS

Attachment A – PowerPoint Presentation
Attachment B – Wastewater Master Plan Update

Attachment A

Wastewater Master Plan Update - City of Tracy

September 5, 2023



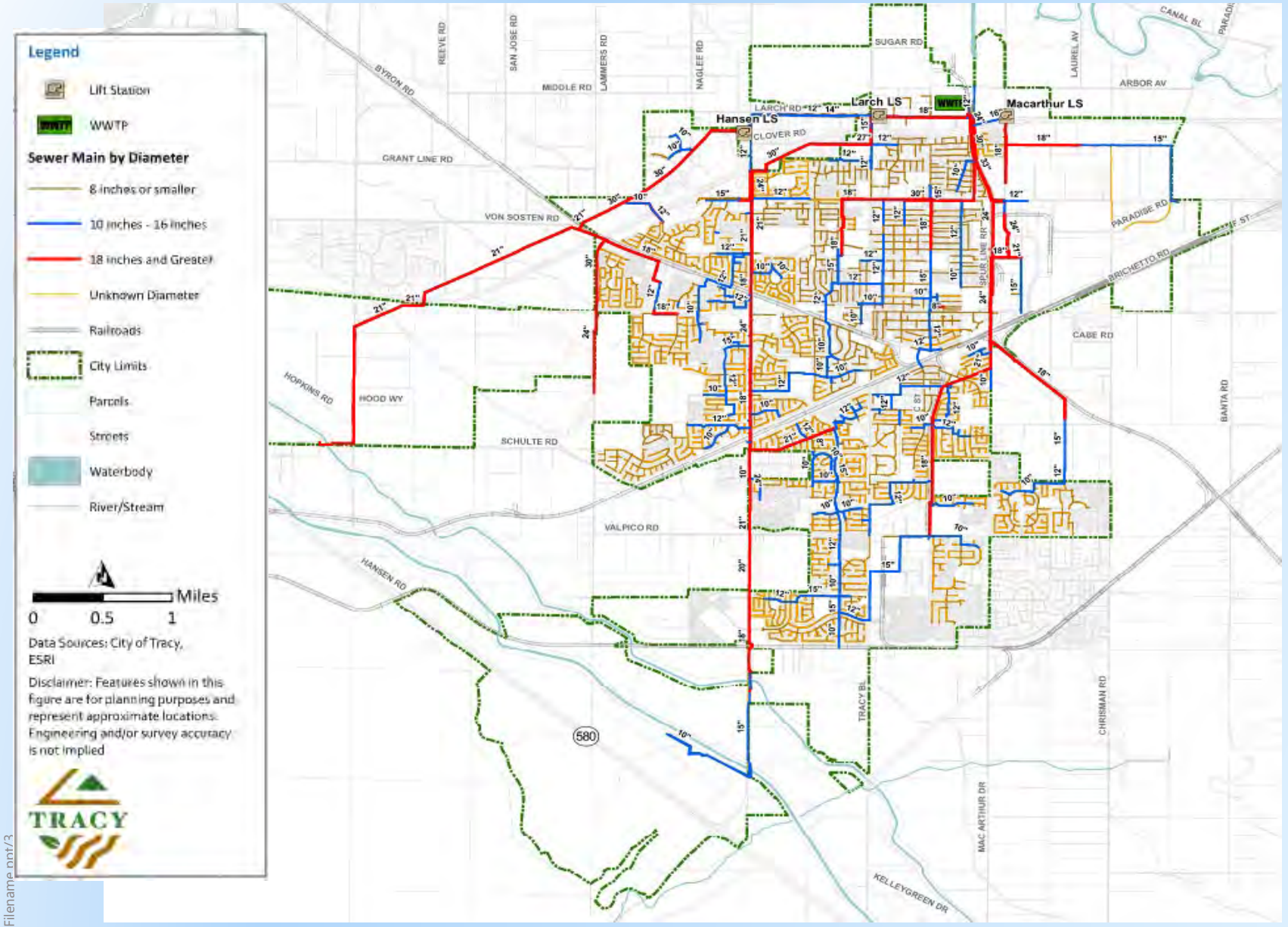
TRACY

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Agenda

- Existing Wastewater System
- Master Plan Work Plan
- Hydraulic Model
- Existing Capacity Evaluation
- Planned Development and Projected Flows
- Future System Evaluation
- Wastewater Treatment Plant
- Capital Improvement Plan

Existing Wastewater Collection System

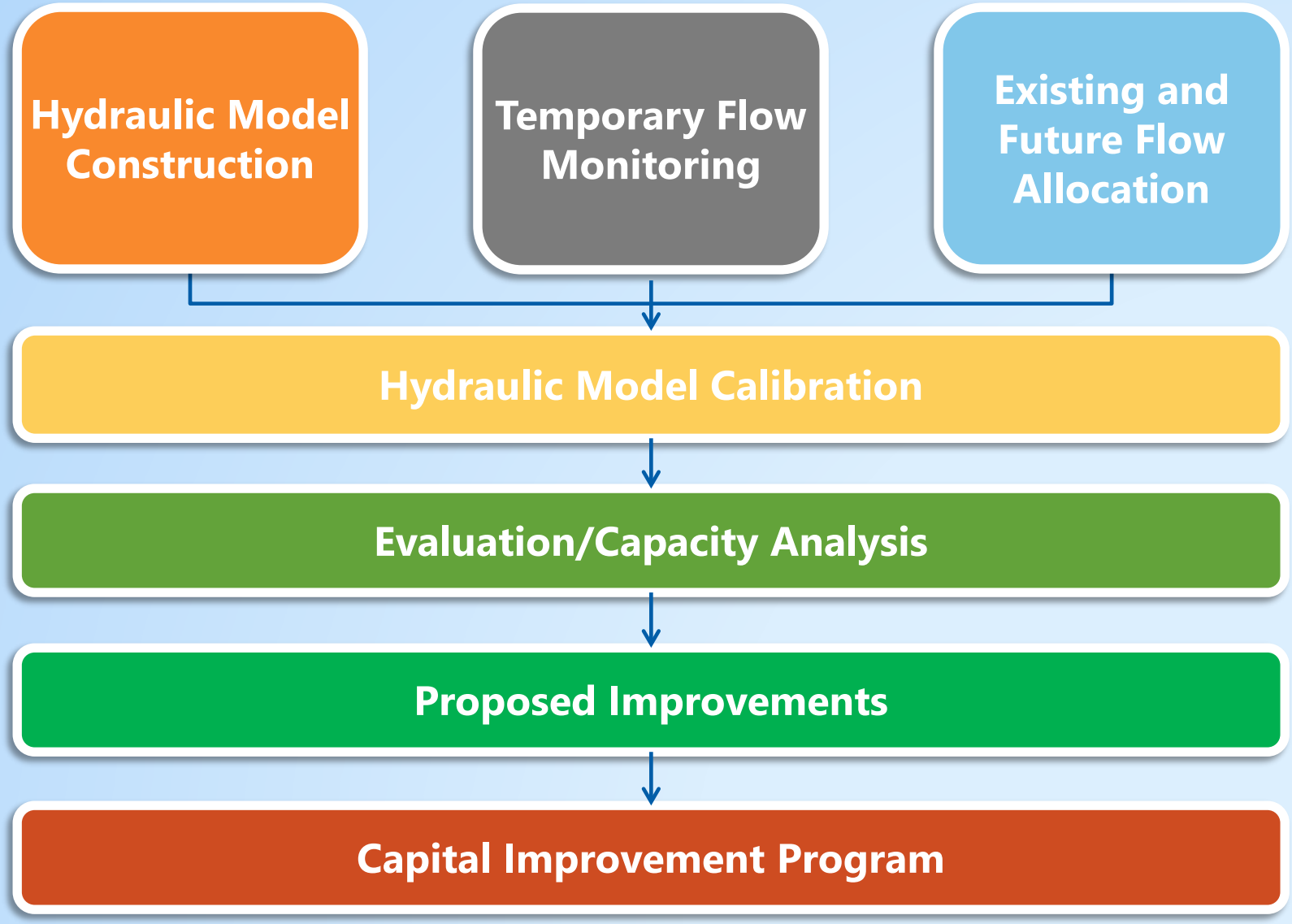


- 210 miles of gravity sewer
- 4 to 48 inches in diameter
- 3 Wastewater Lift Stations
- Serves Existing City Limits

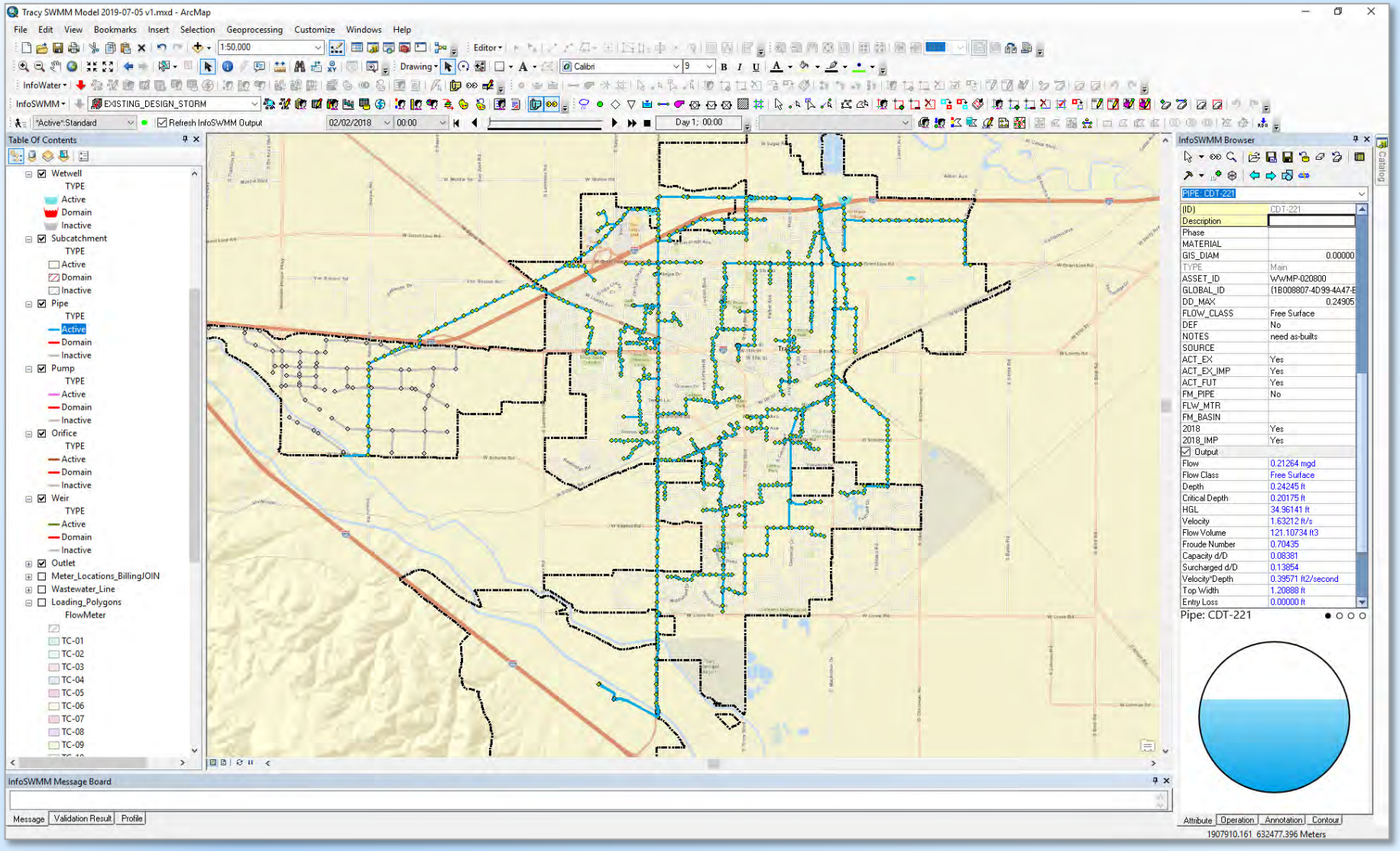
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Master Plan Evaluation Work Plan

- Establish Existing Conditions
- Evaluate Planned Growth
- Determine service plan
- Develop Costs

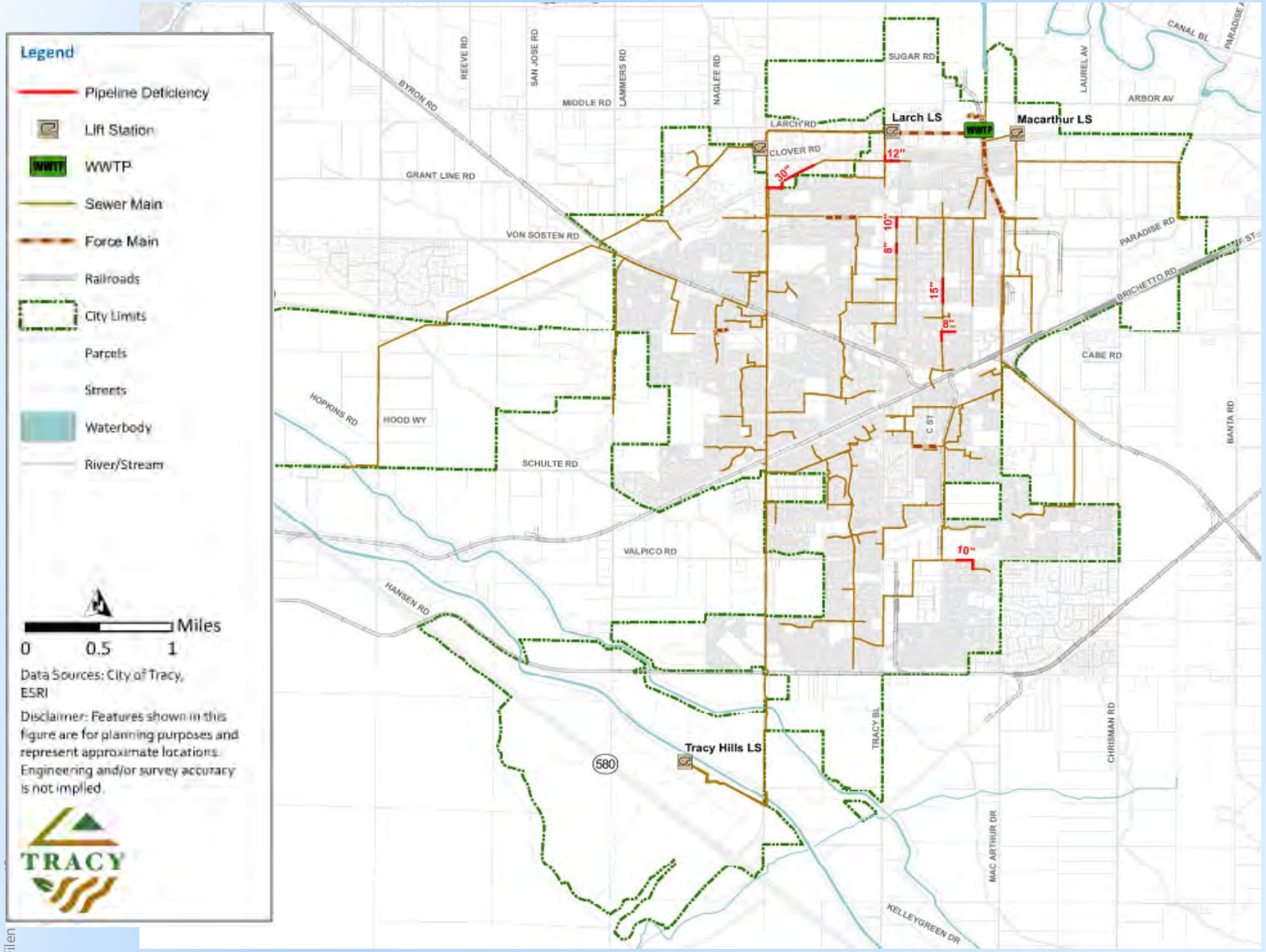


A hydraulic computer model was developed to evaluate capacity and ability to serve growth



- Calibrated to Industry Standards
- Temporary Flow Monitoring Program

Evaluation of existing capacity showed good performance



- Evaluation criteria was developed in coordination with City staff
- Existing system is performing well in terms of hydraulic capacity
- Deficiencies and improvements developed were evaluated based on risk

Evaluation of future developments established future conditions

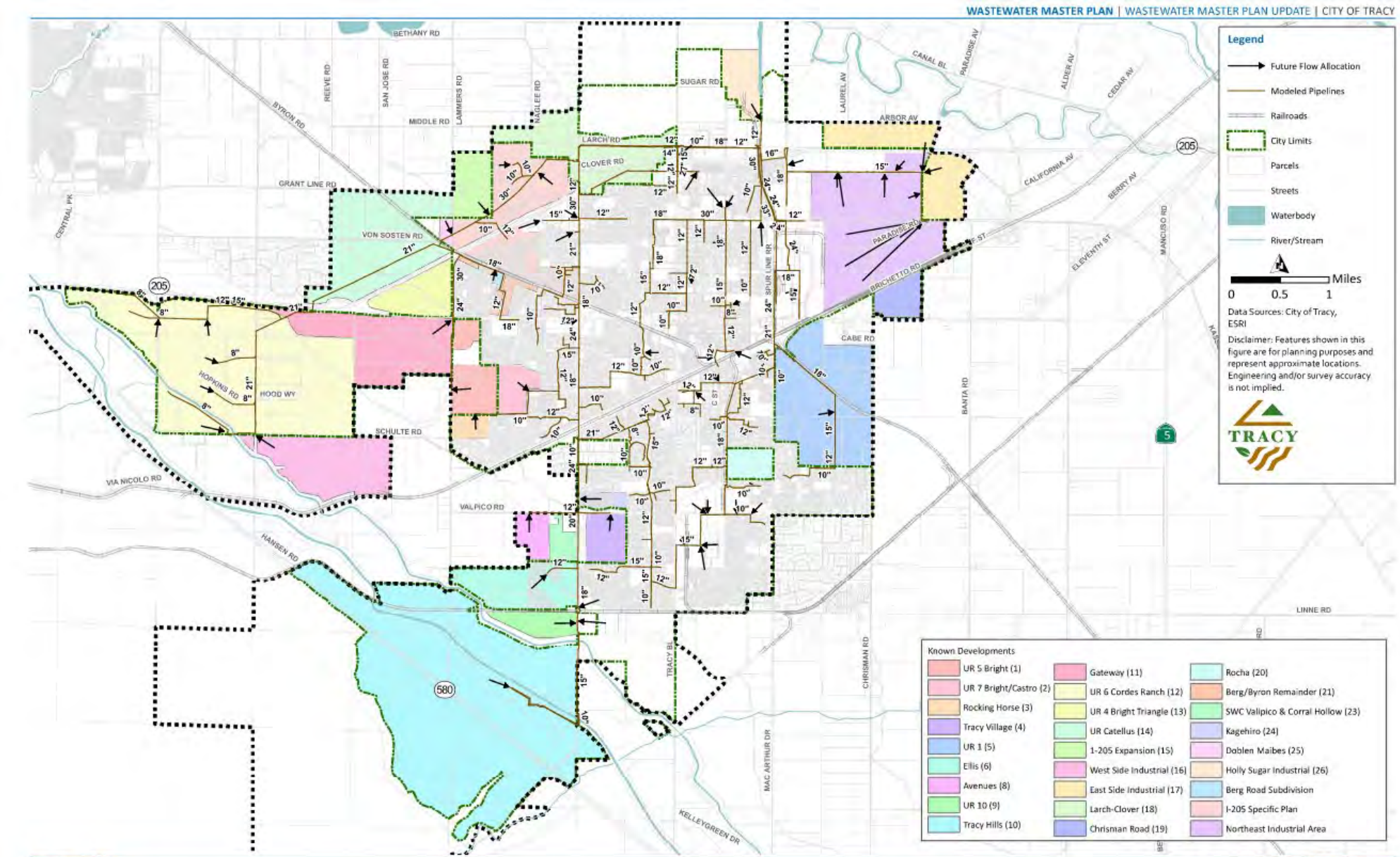
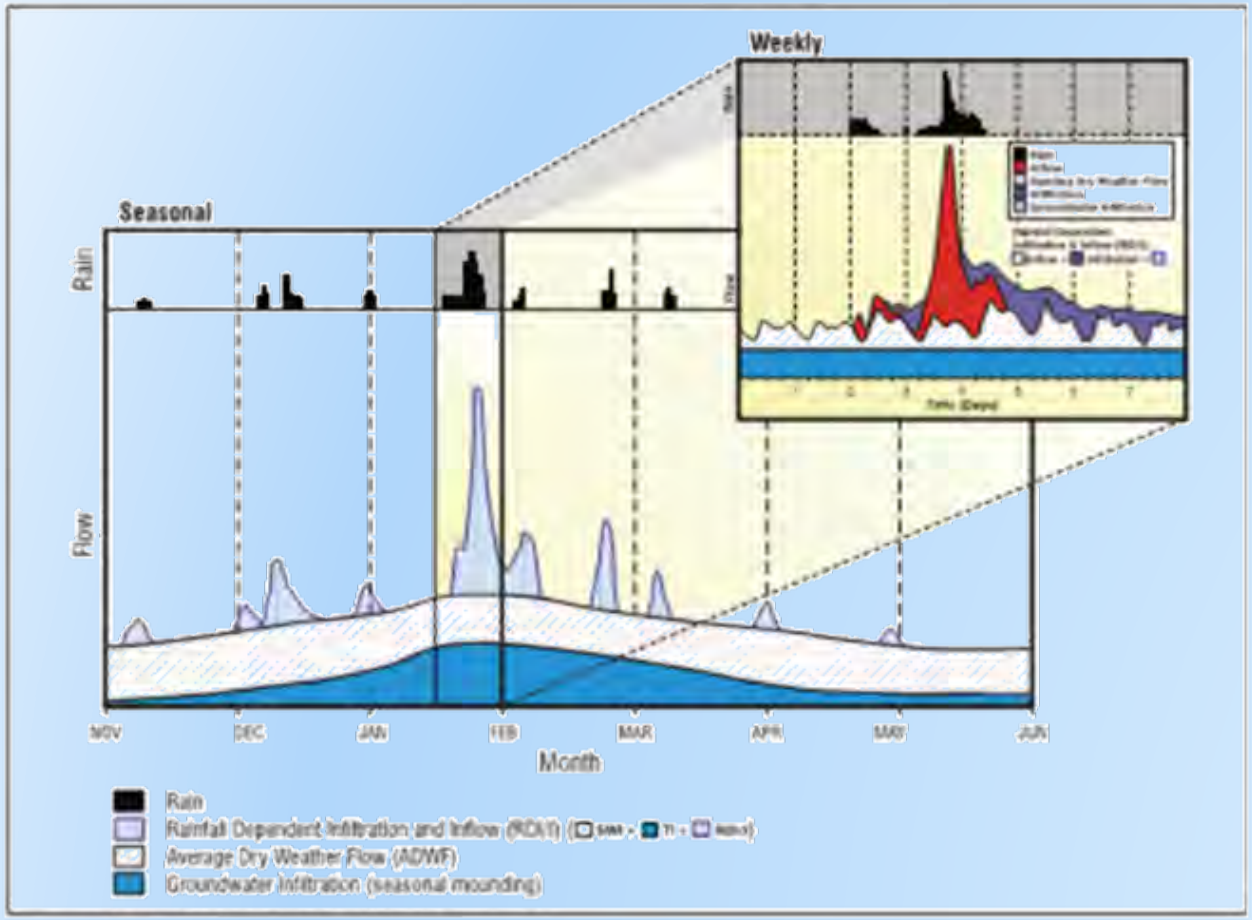
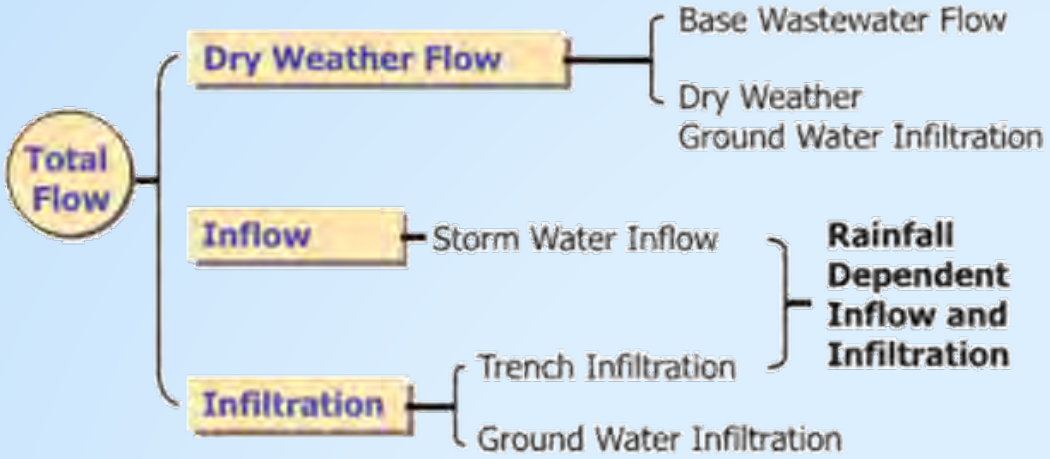


Figure 2.2 Known Development

Wastewater flows include multiple components





Typical sources of infiltration and inflows

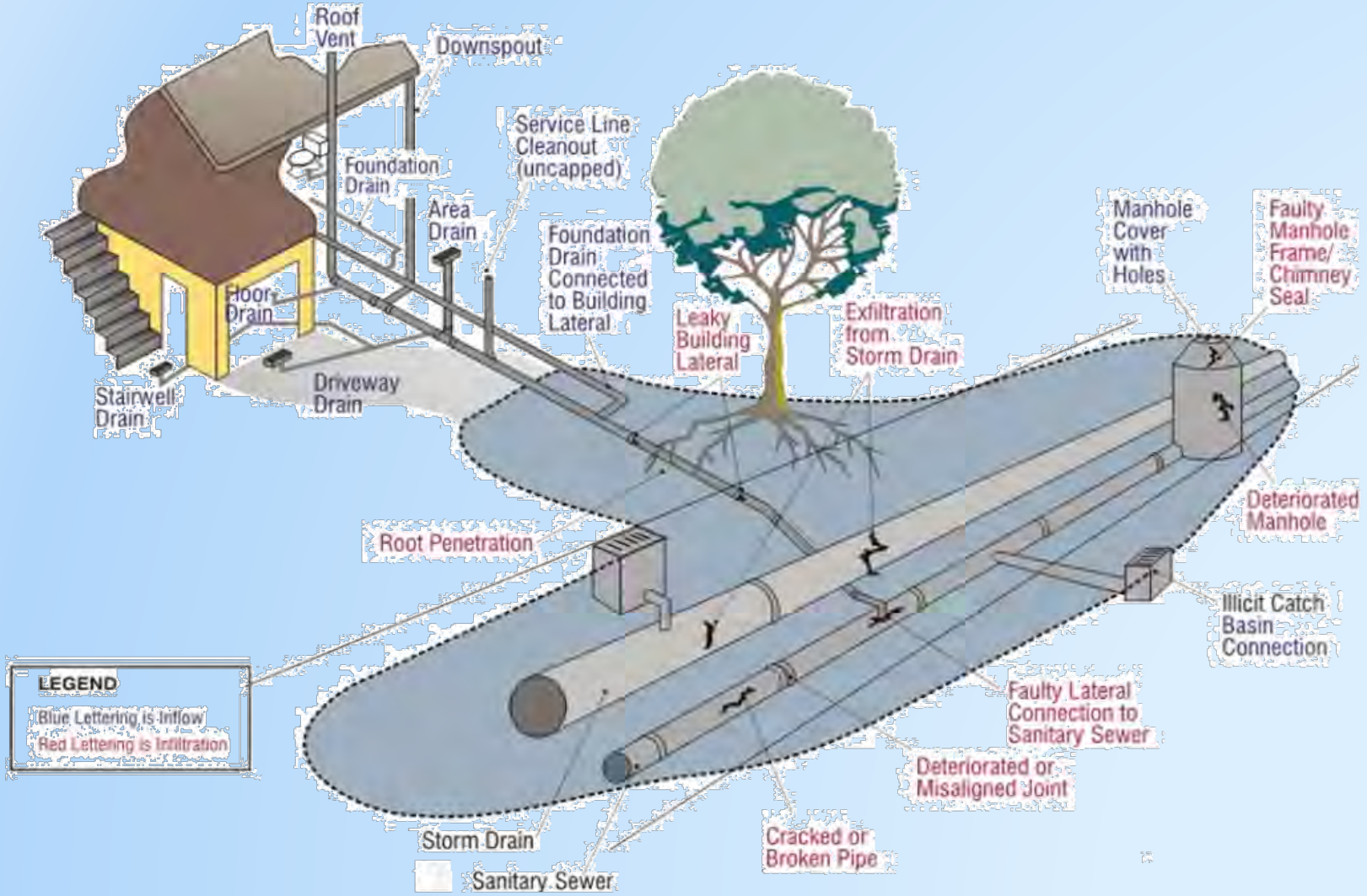


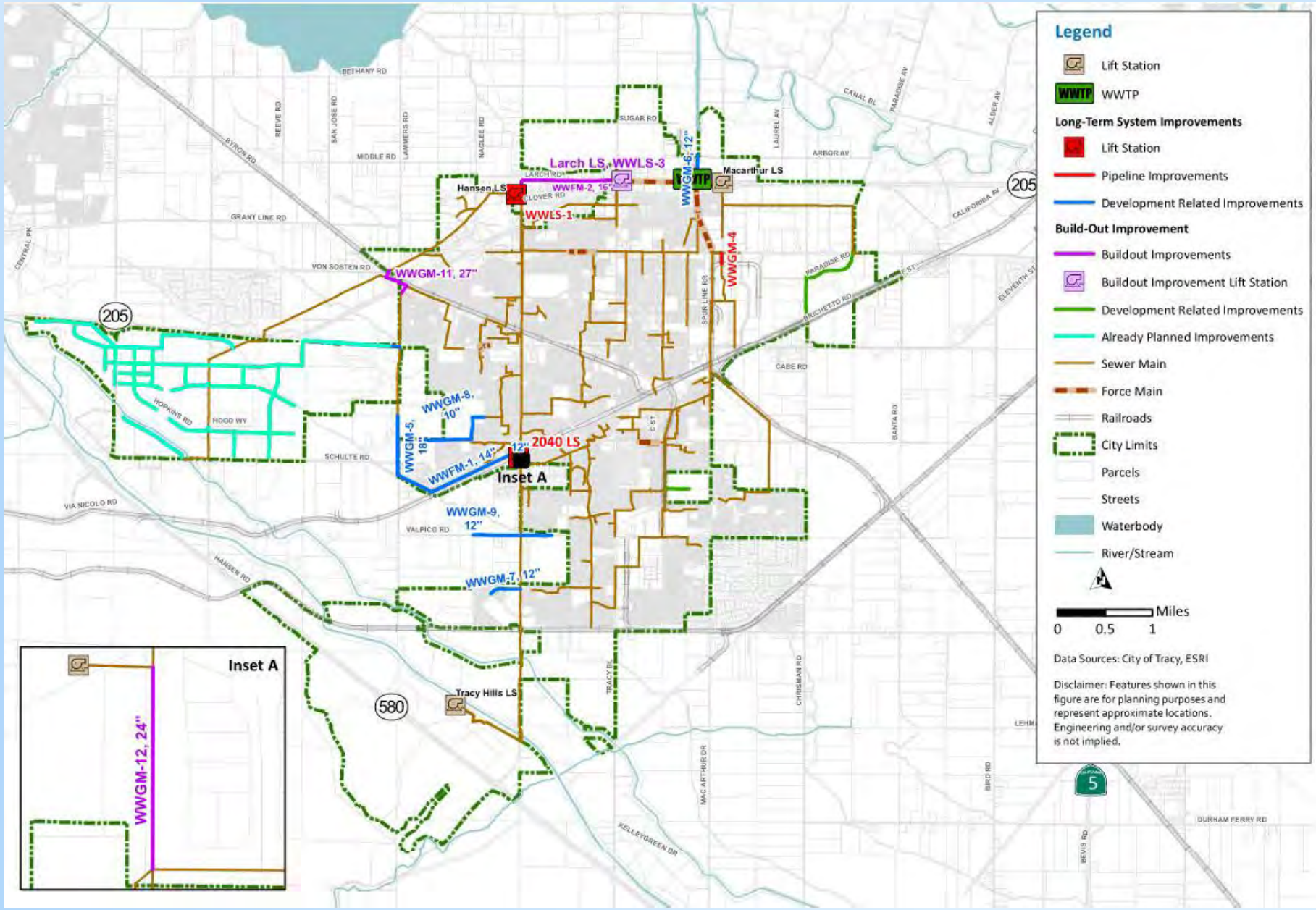
Figure 4.2 Typical Sources of Infiltration and Inflow

Existing and future flows in million gallons per day (mgd)

Planning Horizon	Average Dry Weather Flow (ADWF, mgd)	Peak Wet Weather Flow (PWWF, mgd)	PWWF/ADWF Factor
Existing	7.35	16.95	2.31
2040	12.22	25.35	2.07
Buildout	15.65	30.14	1.93

PWWF = peak wet weather flow
ADWF = average dry weather flow
mgd = million gallons per day

Future system evaluation



Wastewater Treatment Plant – Master Plan Phases

Phase 2	Revised Phase 3	Revised Phase 4	Phase 5
Phase 2A, 2B Completed Phase 2C Designed -Outfall and Aeriation Tanks Under Construction	Required for 2040 Flows	Required for Buildout Flows	Not required based on current projected flows

Wastewater Treatment Plant Expansion Phase 3

Revised Phase 3 Upgrades
Grit Removal Basin #3
Circular Clarifier #3
Primary Sludge Pump Station #2
Primary Effluent Equalization Tank #2
Aeration Basin #5
Secondary Clarifier #2
New WAS and Mixed Liquor Pump Station
Anaerobic Digester #4
Remove 1975 Trickling Filters
New Centrate Equalization Tank and Pump Station
New Sludge Drying Bed #4

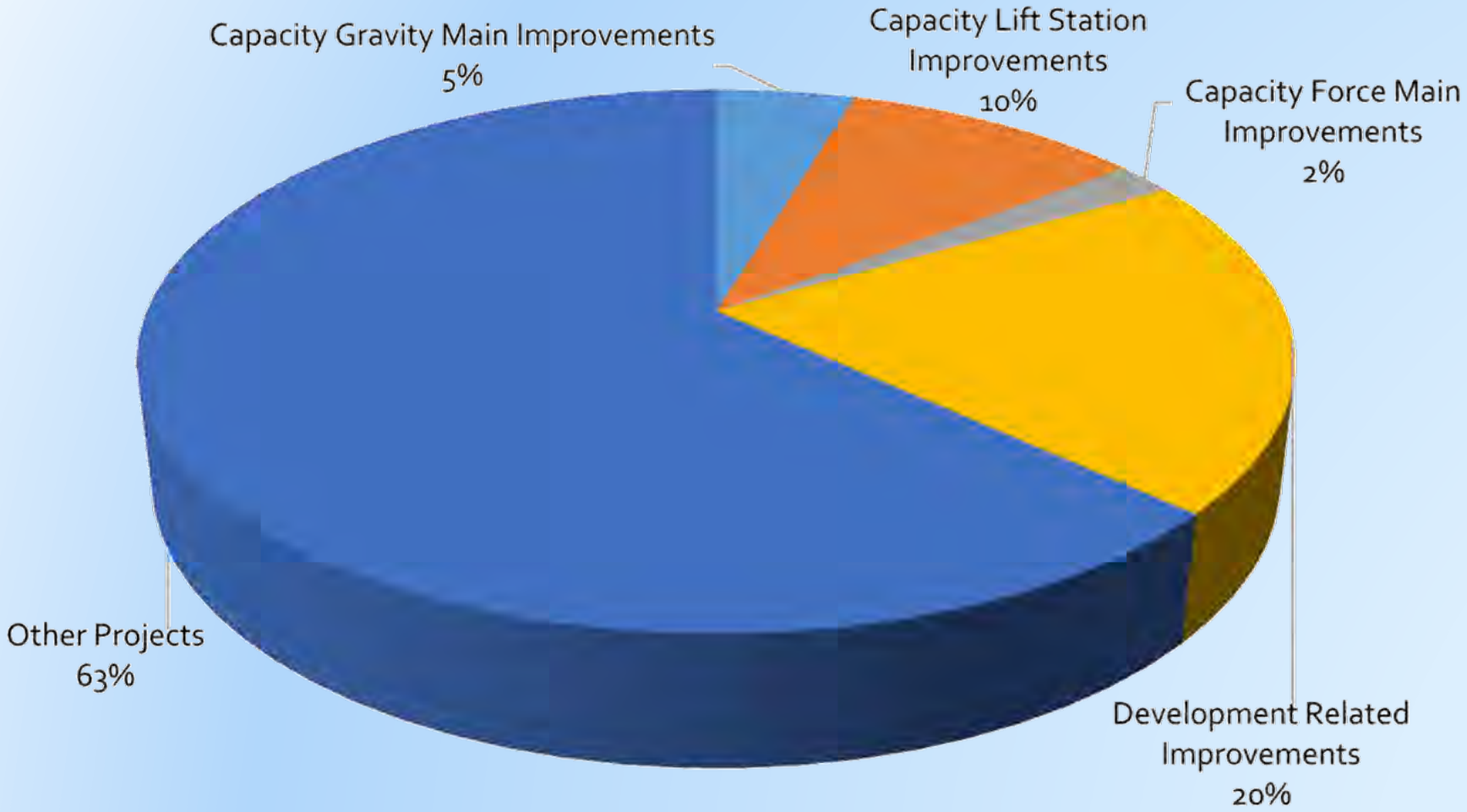
Wastewater Treatment Plant Expansion Phase 4

Revised Phase 4 Upgrades
Additional Influent Screen and Channel
New Primary Effluent Equalization Pump Station
New Outfall Pipeline

The capital improvement program included pipelines, pump stations, treatment, rehabilitation and replacement costs

Project Type	Horizon 1 (2022-2026) ($)	Horizon 2 (2027-2030) ($)	Horizon 3 (2031-2040) ($)	Horizon 4 (2041 & Beyond) ($)	Total ($)
Capacity/Storage Improvements					
Gravity Mains	$550,000	-	$4,105,000	$4,698,000	$9,353,000
Lift Station	-	-	$7,034,000	$13,331,000	$20,365,000
Force Main	-	-	-	$3,857,000	$3,857,000
Subtotal	**$550,000**	**-**	**$11,139,000**	**$21,886,000**	**$33,575,000**
Development Related Improvements					
Gravity Mains	-	$1,474,000	$4,753,000	$26,961,000	$33,188,000
Lift Station	-	$3,068,000	-	-	$3,068,000
Force Main	-	$4,680,000	-	-	$4,680,000
Subtotal	**-**	**$9,222,000**	**$4,753,000**	**$26,961,000**	**$40,936,000**
Other Projects					
Master Plan	-	$150,000	$300,000	-	$450,000
Annual Sewer Line Replacement	$600,000	$600,000	$1,500,000		$2,700,000
WWTP Expansion	$35,000,000	-	$55,587,000	$34,058,000	$124,645,000
Subtotal	**$35,600,000**	**$750,000**	**$57,387,000**	**$34,058,000**	**$127,795,000**
Total	**$36,150,000**	**$9,972,000**	**$73,279,000**	**$82,905,000**	**$202,306,000**

Capital costs by project type



- "Other Projects" Include
  - Treatment Plant Expansion
  - Pipe replacement
  - Future studies

The capital improvement plan costs were allocated to existing and future users

Reimbursement Category	Horizon 1 (2022-2026) (Million $)	Horizon 2 (2027-2030) (Million $)	Horizon 3 (2031-2040) (Million $)	Horizon 4 (2041- and beyond) (Millon $)	Total (Million $)
Existing Users	$1.2	0.75	$1.6	$1.5	$4.9
Future Users	$35	$9.2	$72.0	$81.4	$197.3
Total	$36.2	$10.0	$73.3	$82.9	$202.3

Thank You

Attachment B



City of Tracy
Wastewater Master Plan Update

WASTEWATER MASTER PLAN

FINAL | July 2023

City of Tracy
Wastewater Master Plan Update

WASTEWATER MASTER PLAN

FINAL | July 2023

Digitally signed by Timothy J. Loper
Contact Info: Carollo Engineers, Inc.
Date: 2023.07.14 14:01:18-07'00'



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Abbreviations

AACE	Association for the Advancement of Cost Engineering
AAF	average annual flow
AC	acre
ADWF	average dry weather flow
BOD	biochemical oxygen demand
BWF	base wastewater flow
Carollo	Carollo Engineers
CEQA	California Environmental Quality Act
CIMIS	California Irrigation Management Information System
CIP	capital improvement program
City	City of Tracy
CST	Combined Solar Technologies
d	depth of flow
D	diameter
d/D	depth/diameter ratios
DAFT	dissolved air floatation thickening
DO	dissolved oxygen
du	dwelling unit
DWF	dry weather flow
EDU	equivalent dwelling unit
EIR	environmental impact report
ENR CCI	Engineering News Record Construction Cost Index
EPA	Environmental Protection Agency
ETo	evapotranspiration
F	Fahrenheit
ft/s	feet per second
GIS	geographic information system
gpd/ac	gallons per day per acre
gpd/du	gallons per day per dwelling unit
GWI	groundwater infiltration
I/I	infiltration/inflow
Master Plan	wastewater master plan update
mgd	million gallons per day
MLSS	mixed liquor suspended solids
n	Manning's coefficient
NH_3	ammonia
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service

PHF	peak hour dry weather flow
ppd	pounds per day
PWWF	peak wet weather flow
RAS	return activated sludge
RDI	rain-dependent infiltration
RDII	rain derived infiltration and inflow
ROW	right-of-way
SOI	sphere of influence
SSO	sanitary sewer overflows
SWMM	storm water management model
TSS	total suspended solids
V&A	V&A Consulting Engineers
WaPUG	wastewater planning users guide
WAS	waste activated sludge
WWF	wet weather flow
WWTP	wastewater treatment plant

Chapter 1

INTRODUCTION

This chapter presents a brief summary of the City of Tracy's (City's) need for the Wastewater Master Plan Update (Master Plan), the objectives of the Master Plan, and a description and organization of the seven chapters that cover the wastewater collection system in Tracy.

1.1 Background

The City is located in the southwestern portion of San Joaquin County in California in a geographic triangle formed by Interstate 205 to the north, Interstate 5 to the east, and Interstate 580 to the southwest. Figure 1.1 presents a location map of the City.

The City initially grew rapidly and prospered as an agricultural area. In the 1980's more rapid growth occurred as a result of people migrating out of the Bay Area in search of more affordable living. Today, the City continues to prosper as an agricultural area.

The City, incorporated in 1910, provides water, sewer and storm drainage services to its residents. The City owns and operates its own water and wastewater treatment plants.

1.2 Wastewater Collection System Overview

The City provides wastewater service to approximately 83,000 residents, industrial and commercial customers. The wastewater collection system includes approximately 210 miles of active gravity sewer lines, ranging from 4 to 48 inches in diameter, 3 lift stations and associated force mains. Wastewater generated in the sewer service area is conveyed to the wastewater treatment plant (WWTP).

1.3 Study Purpose, Scope, and Authorization

The purpose of this Master Plan is to update the 2012 Master Plan and to identify existing and future capacity deficiencies in the wastewater system, and to develop and prioritize a capital improvement program (CIP) to correct these deficiencies.

In February 2018, the City approved a professional services agreement with Carollo Engineers (Carollo) to prepare this Wastewater System Master Plan Update. The professional services agreement includes the following main tasks:

- Task 1 – Project Management and Meetings.
- Task 2 – Master Planning.
- Task 3 – Funding Assistance.
- Task 4 – Technical Support to the City's Environmental Impact Report (EIR) Consultant.
- Task 5 – Tracy Gateway Sewer Generation and Conveyance Planning.
- Task 6 – South Schulte Sewer Generation and Conveyance Planning.
- Task 7 – City Standards Review.

1.4 Report Organization

The Master Plan contains eight chapters, followed by appendices that provide supporting documentation for the information presented in the report. The chapters are briefly described below:

- **Chapter 1 – Introduction.** This chapter presents the need for this Master Plan and the objectives of the study.
- **Chapter 2 – Study Area Description.** This chapter presents a description of the study area, defines the planning horizon for this study, and summarizes the zoning classifications and future development of the study area.
- **Chapter 3 – Planning and Evaluation Criteria.** This chapter presents the planning criteria and methodologies for the analysis used to evaluate the City's existing wastewater collection system and associated facilities, which are utilized to identify existing system deficiencies and to size future improvements. The planning criteria address the collection system capacity, acceptable gravity sewer pipe slopes, and maximum allowable depth of flow, design velocities, and changes in pipe size. This chapter also summarizes existing (2019), interim (2040), and future buildout design flows.
- **Chapter 4 – Wastewater Flows.** This chapter summarizes the existing and projected wastewater flows for the City's wastewater collection system. Flow data obtained as part of the temporary flow monitoring program are also presented.
- **Chapter 5 – Wastewater Collection System Facilities and Hydraulic Model.** This chapter discusses the wastewater collection system hydraulic model, including modeling software, model elements and the model creation process.
- **Chapter 6 – System Evaluation and Proposed Improvements.** This chapter discusses the hydraulic evaluation of the wastewater collection system and the proposed projects that correct capacity deficiencies and serve future users.
- **Chapter 7 – Wastewater Treatment Plant Evaluation and Proposed Upgrades.** This chapter discusses the treatment plant overview and its projected flows and loads. This chapter also discusses the treatment plant evaluation and proposed upgrades.
- **Chapter 8 – Capital Improvement Program.** This chapter presents the capital improvement projects, a summary of the capital costs, and a basic assessment of the possible financial impacts.

1.5 Acknowledgements

We would like to thank the following City staff for their assistance and oversight of this project:

- Paul Verma – Project Manager.
- Robert Armijo – City Engineer.

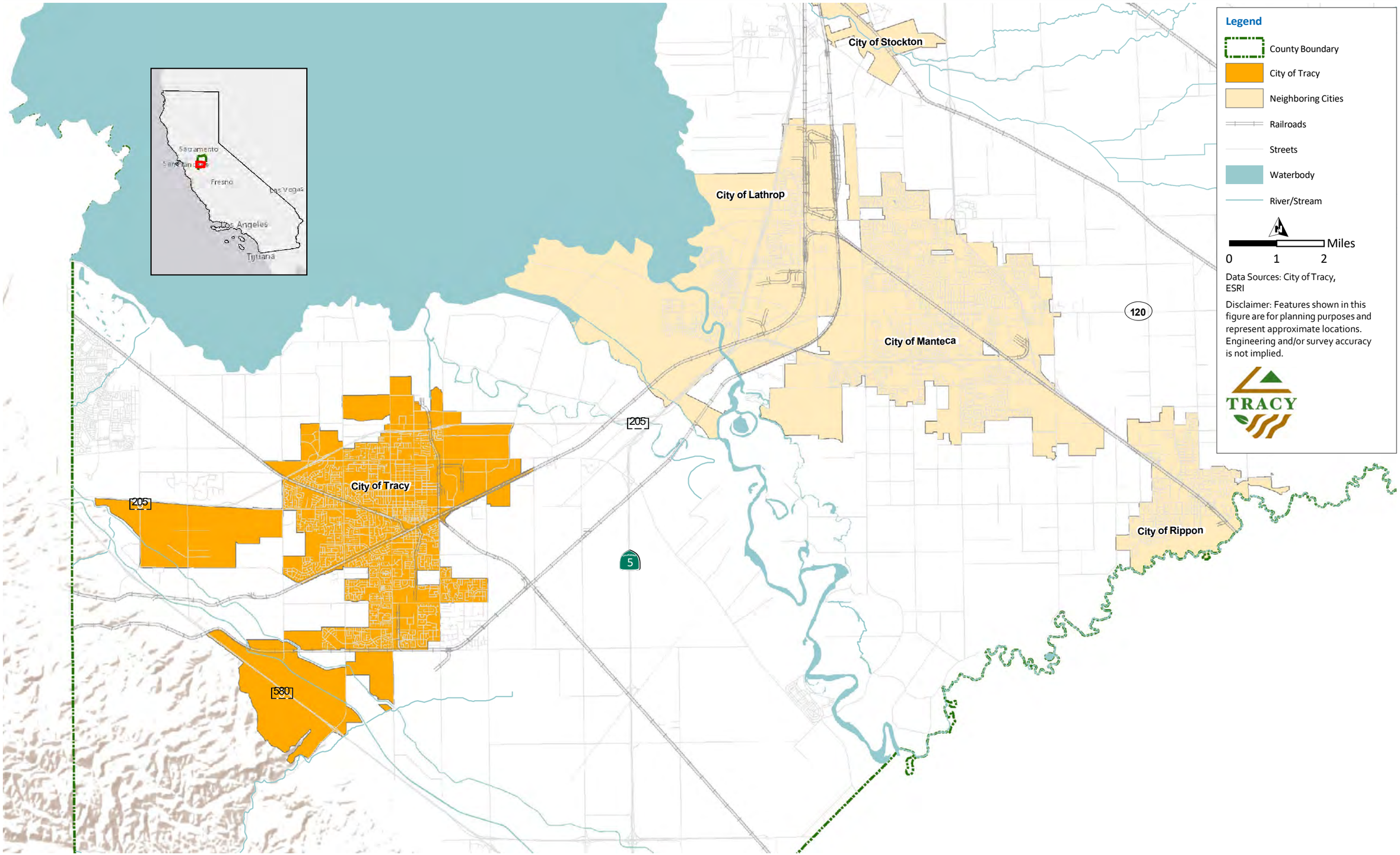
The following Carollo staff members were principally involved in this project:

- Tim Loper – Project Manager.
- Ryan Orgill – Project Engineer.
- Grace Mitzel – Engineer.
- Kevin Christensen – Graphics.

1.6 Reference Material

The following documents were referenced in the preparation of this Master Plan:

- City of Tracy Wastewater Master Plan, December 2012.
- City of Tracy General Plan, 2011.
- City of Tracy Housing Element.
- City of Tracy Sewer Design Standards.



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Figure 1.1 Regional Location Map

Chapter 2

STUDY AREA DESCRIPTION

This chapter outlines the planning area for the wastewater collection system, defines land use classifications and described planned development within the City's service area. The planning assumptions described in this chapter form the basis for the wastewater flow projections included in Chapter 4.

2.1 Study Area

The City's study area consists of two boundaries which are identified in the General Plan. These boundaries are the City limits and sphere of influence (SOI). The City provides wastewater collection service to residents, businesses, industrial, and other institutions within City limits. Figure 2.1 shows the City's existing and future boundaries.

2.2 Planning Period

This Master Plan is intended to serve as a guiding document for the planning and implementation of system improvements to accommodate future growth for the planning years of 2040 and buildout.

2.3 Climate and Topography

Table 2.1 summarizes the study areas climate. As shown, the City's climate is characterized by hot dry summers and mild winters with an average annual rainfall of approximately 12.03 inches. Approximately 80 percent of the average annual precipitation occurs between November and March. The City's elevation ranges from approximately 9 feet above sea level in the northwestern portion of the City to approximately 259 feet above sea level in the southern portion of the City.

2.4 Land Use and Future Developments

Land use information is an integral component in determining the wastewater generation within a given service area. The type of land use in an area will affect the volume and character of the wastewater generation. Adequately estimating wastewater flow from various land use types is important in sizing and maintaining effective system facilities.

Table 2.1 Study Area Climate

Month	Average Temperature[1] (degrees F)		Monthly Average ETo[2]	Average Total Precipitation[1]
	Minimum	Maximum	(inches)	(inches)
January	38.3	54.8	1.84	2.54
February	41.9	61.2	1.83	2.13
March	44.7	66.4	3.34	1.57
April	47.8	72.2	5.55	0.83

Month	Average Temperature[1] (degrees F)		Monthly Average ETo[2]	Average Total Precipitation[1]
	Minimum	Maximum	(inches)	(inches)
May	53.4	79.7	6.35	0.40
June	57.8	87.2	8.91	0.13
July	60.5	92.6	9.01	0.03
August	60.4	91.9	7.44	0.06
September	58.3	87.7	5.80	0.23
October	52.3	78.3	4.10	0.65
November	44.2	64.7	2.08	1.56
December	38.6	55.2	2.02	1.91
Average or Total	**49.9**	**74.3**	**58.27**	**12.03**

Abbreviations: ETo - evapotranspiration; F - Fahrenheit.
Notes:
(1) Source: Western Regional Climate Center Tracy Pumping Plant (049001). Represents monthly average from February 1955 to June 2016.
(2) Source: California Irrigation Management Information System (CIMIS) Station 249 Ripon. Represents monthly average ETo from June 2018 to May 219.

2.4.1 Existing Land Use

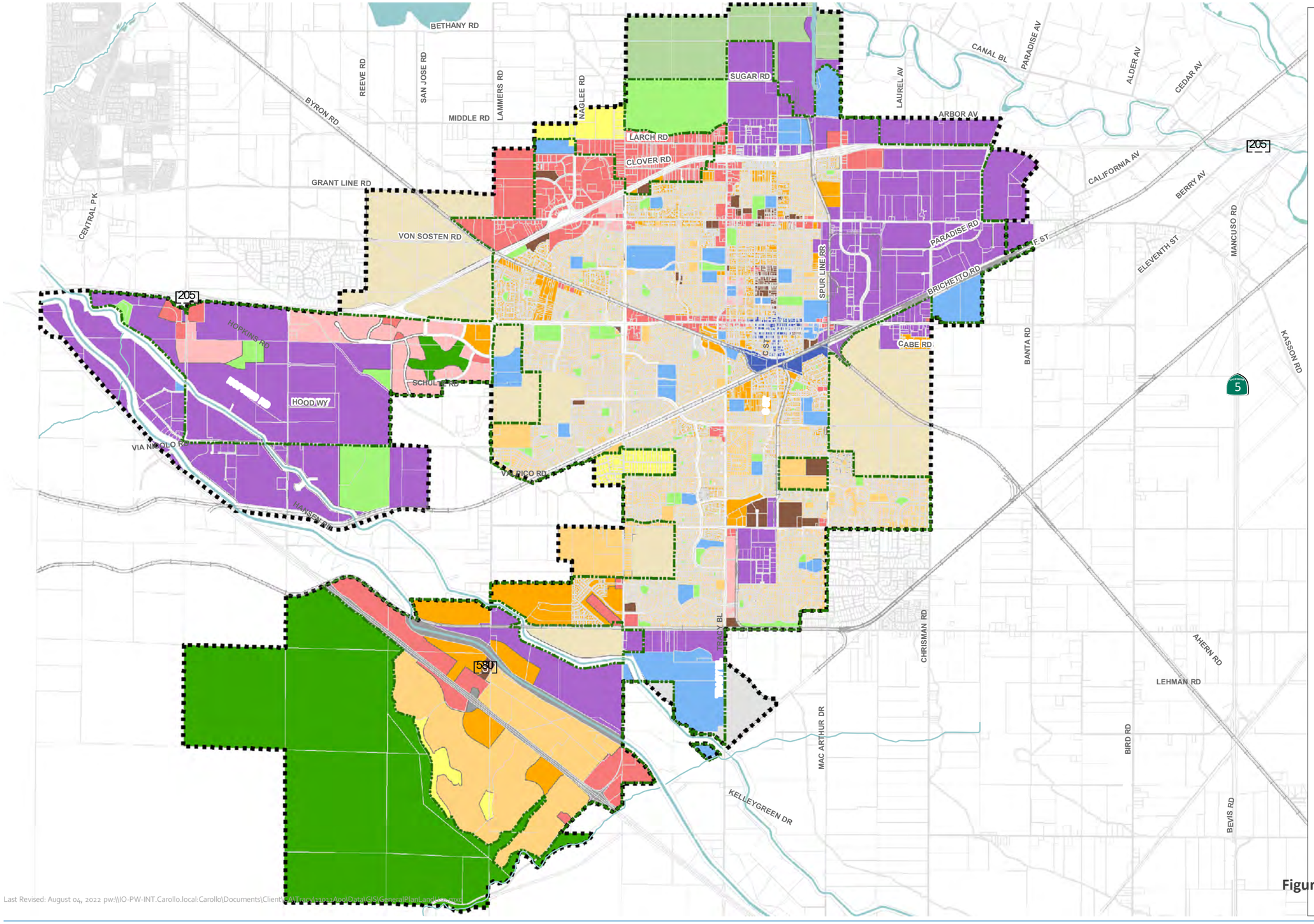
Figure 2.1 shows the City's existing land use within the City's service area. Table 2.2 provides a summary, by land use, of the amount of developed and developable land within the study area.

Table 2.2 Existing Land Use

Land Use Type	Developed Area (acres [ac])	Developable Area (ac)[1]
Residential Very Low	76	0
Residential Low	2,817	33
Residential Medium	792	31
Residential High	158	66
Commercial	501	80
Industrial	1,828	250
Downtown	111	3
Public Facilities	665	0
Park	227	26
Aggregate	2	0
Total	**7,176**	**488**

Notes:
(1) Acreages do not include Known Development.

As shown in Table 2.2, there are approximately 7,176 acres of developed land within the City limits (excluding right-of-way such as streets, highways, and railroads). Of the 7,176 developed acres, 3,842 ac (54 percent) are classified as residential, 2,329 ac (32 percent) are classified as commercial/industrial, and the remaining 1,005 (14 percent) are associated with downtown, public facilities, park, or aggregate.



Legend

- Railroads
- City Limits
- Sphere of Influence
- Parcels
- Streets
- Waterbody
- River/Stream

General Plan Land Use

- Agriculture
- Residential Very Low
- Residential Low
- Residential Medium
- Residential High
- Office
- Commercial
- Downtown
- Public Facilities
- Industrial
- Open Space
- Park
- Right of Way
- Urban Reserve
- Aggregate

N

Miles

0 0.5 1

Data Sources: City of Tracy, ESRI

Disclaimer: Features shown in this figure are for planning purposes and represent approximate locations. Engineering and/or survey accuracy is not implied.

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Figure 2.1 General Plan Land Use

2.4.2 Known Development

The City has plans for development of new residential, industrial, commercial, and institutional areas through 2040 and buildout. As shown in Table 2.3 and on Figure 2.2, the City currently has twenty six planned developments. Projected acreages were provided by the City for each of these development areas. The City also provided a timeline of when these developments would come online (either by 2040 or sometime between 2040 and buildout). The City also provided infill data on which developments would be built by 2040 and buildout. Appendix A shows the known development and infill data provided by the City.

Table 2.3 Known Development

Planning Area Name	Total Area (ac)
UR 5 (Bright) (1)	170
UR 7 (Bright/Castro) (2)	112
Rocking Horse (3)	58
Tracy Village (4)	135
UR1 (5)	780
Ellis (6)	321
Ellis DA additional RGAs (7)	--
Avenues (8)	96
UR10 (9)	116
Tracy Hills (10)	2,732
Gateway (11)	535
UR6 (Cordes Ranch) (12)	1,730
UR4 (Bright Triangle) (13)	190
UR3 (Catellus) (14)	700
I-205 Expansion (15)	172
West Side Industrial (16)	487
East Side Industrial (17)	370
Larch Clover (18)	442
Chrisman Road (19)	116
Rocha (20)	91
Berg/Byron remainder (21)	56
Berg Road Subdivision (22)	10
SWC Valpico and Coral Hollow (23)	65
Kagehiro (24)	47
Dobler/Maibes (25)	23
Holly Sugar Industrial (26)	160
Northeast Industrial Area	906
I-205 Specific Plan	620

2.4.3 Future Development

Future land use includes the development of vacant or underdeveloped areas not defined as known development. This includes growth outside of the current City limits and encompassed by the planning area. It is assumed that development and redevelopment will occur according to the land use designations as depicted on Figure 2.1.

Build-out is defined as development of all land including the planning area of the City. At build-out, the service area will encompass approximately 41.9 square miles.

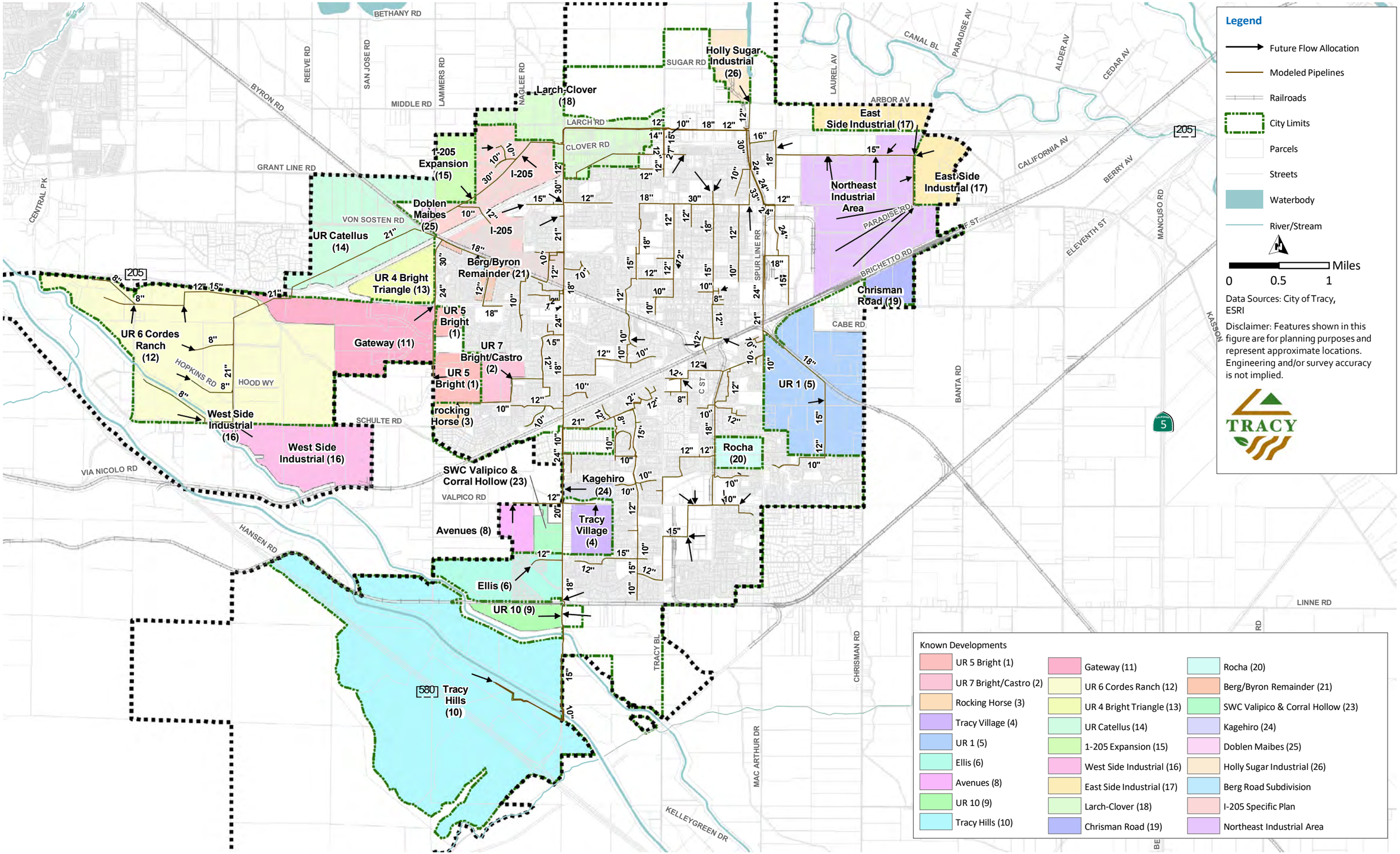


Figure 2.2 Known Development

Chapter 3

PLANNING AND EVALUATION CRITERIA

This chapter presents the planning criteria and methodologies for the analysis used to evaluate the City's existing wastewater collection system and associated facilities. The planning criteria is utilized to identify existing system deficiencies, and to size future improvements. The planning criteria address the collection system capacity, acceptable gravity sewer pipeline slopes, maximum allowable depth of flow, design velocities, and changes in pipe size.

3.1 Collection System Evaluation Criteria

The capacity of the City's sanitary sewer collection system was evaluated based on the planning criteria defined in this section. The planning criteria address the collection system capacity, gravity sewer pipes slopes, and maximum allowable depth of flow within a sewer. The evaluation criteria used for the evaluation of the City's sewer system are summarized in Table 3.1.

3.1.1 Manning's Coefficient (n)

The Manning's coefficient "n" is a friction coefficient that varies with respect to pipe material, size of pipe, depth of flow, smoothness of joints, root intrusion, and other factors. For sewer pipes, the Manning's coefficient typically ranges between 0.011 and 0.017, with 0.013 being a representative value used for system planning purposes. Due to unknown conditions of existing pipelines, a conservative Manning's "n" factor of 0.013 was initially used for the evaluation of all existing collection system pipelines. Pipe roughness values were adjusted during calibration. The evaluation of all proposed pipelines used a Manning's "n" factor of 0.013.

3.1.2 Peak Flow Depth Criteria

The primary criterion used to identify pipeline capacity deficiencies or to size new sewer improvements is the maximum flow depth-to-pipe diameter ratio (d/D). The d/D value is defined as the depth of flow (d) in a pipe during peak (design) flow conditions divided by the pipe's diameter (D). Based on Carollo's experience and industry standards, the following criteria were recommended.

- **Flow depth criteria for existing sewers:** maximum flow-depth criteria for existing sanitary sewers are established based on a number of factors, including the acceptable risk tolerance of the utility, local standards and codes, and other factors. Using a conservative d/D ratio when evaluating existing sewers may lead to unnecessary replacement of existing pipelines. Conversely, lenient flow-depth criteria could increase the risk of sanitary sewer overflows (SSOs). Ultimately, the maximum allowable flow-depth criteria should be established to be as cost-effective as possible, while at the same time reducing the risk of SSOs to the greatest extent possible. For the City, existing pipelines were flagged based on the maximum flow depth criteria listed in

Table 3.1. As shown in Table 3.1, the maximum allowable flow depth varied depending on flow condition:

- **Peak hour dry weather flow (PHF):** under dry weather flow conditions, the maximum allowable flow d/D ratio is 0.75 for all pipelines.
- **Peak wet weather flow (PWWF):** under PWWF conditions, flow depths are allowed to exceed the maximum d/D ratio established for dry weather conditions. The maximum d/D ratio is 0.90 for all pipelines.

- **Flow depth criteria for new sewers:** when sizing new sewer pipelines, it is common practice to adopt variable flow depth criteria for various pipe sizes. Design d/D ratios typically range from 0.5 to 0.92, with the lower values typically used for smaller pipes, which may experience flow peaks greater than design flow or blockages from debris, paper, or rags. For pipelines 12 inches in diameter and smaller, the maximum d/D value is 0.67. For pipelines 15 inches and larger, the maximum d/D is 0.75.

Table 3.1 Wastewater System Evaluation Criteria

Minimum Slopes for New Circular Pipes	
Pipe Size (inches)	Minimum Slope (foot/foot)[1]
6	0.0049
8	0.0033
10	0.0025
12	0.002
15	0.0015
18	0.0012
21	0.0009
24	0.0008
27	0.0007
30	0.0006
36	0.0005
Flow Depth, d/D	
Maximum Flow Depth for Existing Sewer	
Pipe Diameter	Maximum d/D Ratio
All Pipe Sizes	0.75 (PHF), 0.90 (PWWF)
Maximum Flow Depth for Future Sewers	
Pipe Diameter	Maximum d/D Ratio
12 inches and Smaller	0.67
Larger than 12 inches	0.75
Head Loss in Pipelines	
Gravity Pipeline — Manning's n =	0.013
Pressure Pipelines — Hazen William's C =	120

Lift Stations and Force Mains	
Minimum Velocity	3 feet per second (ft/s)
Maximum Velocity	8 ft/s
Lift Station Capacity	Firm Capacity under PWWF[3][4]

Note:
(1) Minimum Slope values are based on pipeline flowing half full at 2 ft/s.
(2) Firm capacity represents the lift stations capacity with the largest pump out of service.

3.1.3 Design Velocities and Minimum Slopes

In order to minimize the settlement of sewage solids, it is standard practice in the design of gravity sewers to specify a minimum velocity of 2 ft/s be maintained when the pipeline is half-full. At this velocity, the sewer flow will provide self-cleaning of the pipe. Table 3.1 lists the recommended minimum slopes, which were calculated to maintain a minimum velocity of 2 ft/s when flowing half full or at the maximum d/D ratio, whichever is more conservative.

3.1.4 Changes in Pipe Diameter

When a smaller sewer joins a larger pipe, the invert of the larger sewer should be lowered sufficiently to maintain the same energy gradient. An approximate method for securing these results is to place the 80 percent depth point of both sewers at the same elevation. For planning purposes and designing new pipes, and in the absence of field data, sewer crowns are typically matched at the manholes.

3.1.5 Lift Station and Force Mains

Industry standard practice is to require that sewage lift stations have sufficient capacity to pump the peak flow with the largest pump out of service (firm capacity).

Force main piping should be sized to provide a minimum velocity of 3 ft/s at the design flow rate of the lift station and no more than 7 ft/s. For the determination of head loss, the Hazen Williams Equation is used with a C-factor of 120. These factors are typical for sewer system master planning purposes.

3.2 Peak Wet Weather Flow Design Storm

Design storms are rainfall events used to analyze the performance of a collection system under extreme wet weather events. The City's design storm was routed through the collection system model to determine PWWFs. The first step in the development of the design storm is to define its recurrence interval and rainfall duration. The recurrence interval is based on the probability that a given rainfall event will occur or be exceeded in any given year. For example, a "100-year storm" means there is a 1 in 100 chance that a storm as large as or larger than this event will occur at a specific location in any year.

Duration is the length of time in which the rainfall occurs. It is industry standard to use the 10-year, 24-hour design storm for analyzing wastewater collection system performance during PWWF conditions. The 10-year, 24-hour design storm volume for the City is 1.79 inches, as document by National Oceanic and Atmospheric Administration Atlas 14.

Once the design storm recurrence interval, duration, and associated rainfall volume have been determined, the next step in defining the design storm is to distribute the total rainfall over the duration of the storm. The Natural Resources Conservation Service (NRCS) Type 1 rainfall distribution was used. Figure 3.1 shows the 10-year, 24-hour design storm.

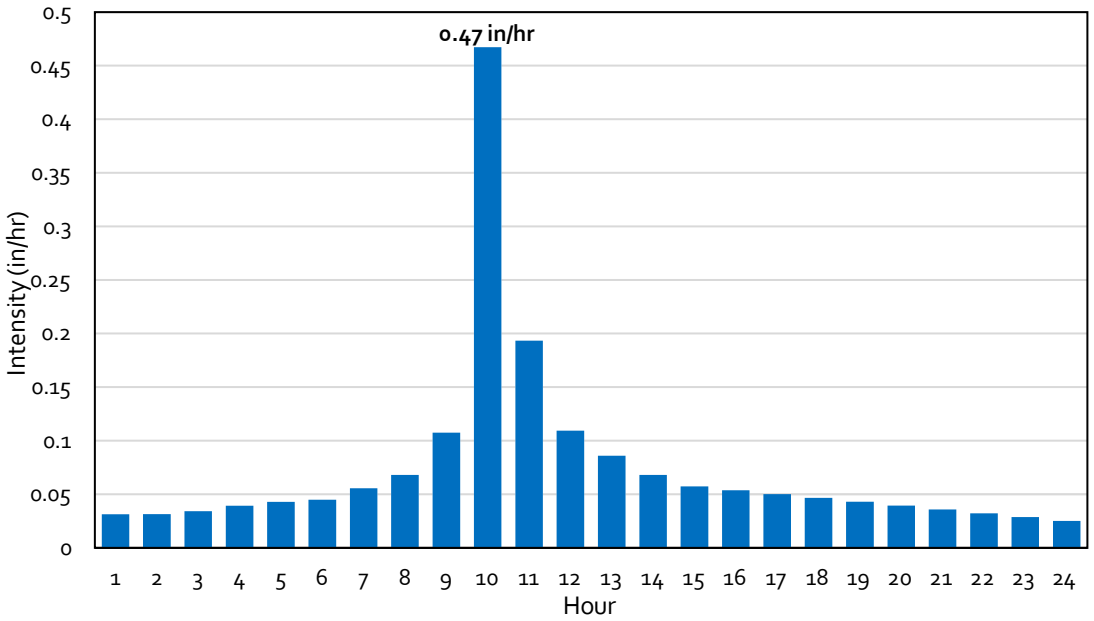


Figure 3.1 10-Year, 24-Hour Design Storm

Chapter 4

WASTEWATER FLOWS

This chapter summarizes the existing and projected wastewater flows for the City's collection system. Flow data obtained as part of the temporary flow monitoring program is also presented.

4.1 Wastewater Flow Components

This section describes and provides definitions of commonly used terminology in the sewer collection system analysis and evaluations conducted as part of this project. Wastewater flows vary according to the season. Dry weather flow (DWF) or base flow is flow generated by routine water usage in the residential, commercial, and industrial sectors of the collection system.

Another component of DWF is the contribution of dry weather groundwater infiltration (GWI) into the collection system. Dry weather GWI will enter the sewer system when the relative depth of the groundwater table is higher than the depth of the pipeline and when the susceptibility of the sanitary sewer pipe allows infiltration through defects such as cracks, misaligned joints, and broken pipelines. Figure 4.1 illustrates the various flow components of wastewater in general, which are described in detail in the following sections.

Wet weather flow (WWF) includes storm water inflow, trench infiltration, and GWI. The storm water inflow and trench infiltration comprise the WWF component termed infiltration/inflow (I/I). The response in the sewer system to rainfall is seen immediately (as with inflow) or within hours after the storm (as with infiltration):

- **Base wastewater flow (BWF).** The BWF is the flow generated by the City's customers independent of wet weather influences. BWF is estimated by measuring flows during dry weather conditions. The flow has a diurnal pattern that varies depending on the type of use. Commercial and industrial patterns, though they vary depending on the type of use, typically have more consistent higher flows during business hours and lower flows at night. Furthermore, the diurnal flow pattern experienced during a weekend may vary from the diurnal flow experienced during a weekday.
- **Average annual flow (AAF).** The AAF is the average flow that occurs on a daily basis throughout the year, including both periods of dry and wet weather conditions.
- **Average dry weather flow (ADWF).** The ADWF is the average flow that occurs on a daily basis during the dry weather season. The ADWF includes the BWF generated by the City's residential, commercial, and industrial users, plus the dry weather GWI component.
- **PWWF.** PWWF is the highest observed flow that occurs following a design storm event. Wet weather I/I causes flows in the collection system to increase. PWWF is typically used for designing sewers, lift stations, and some unit processes in a treatment plant. Therefore, the PWWF and the "Design Flow" are synonymous and will be used interchangeably throughout this report.
- **GWI.** GWI is the result of extraneous water entering the sewer system through defects in pipes and manholes. GWI is related to the condition of the sewer pipes, manholes, and

groundwater levels. GWI may occur throughout the year, although rates are typically higher in the late winter and early spring. Dry weather GWI (or base infiltration) cannot easily be separated from BWF by flow measurement techniques. Therefore, dry weather GWI is typically grouped with BWF.

- **Rain derived infiltration and inflow (RDII).** Infiltration is defined as storm water flows that enter the sewer system by percolating through the soil and then through defects in pipelines, manholes, and joints. Examples of infiltration entry points are cracks in pipelines, misaligned joints, and root penetration. Inflow is defined as storm water that enters the sewer system via storm drain cross connections, leaky manhole covers, or cleanouts. Examples of inflow entry points are roof drain and downspout connections, leaky manhole covers, and illegal storm drain connections. Some of the most common sources of I/I are shown on Figure 4.2 The adverse effects of I/I entering the sewer system is that it increases both the flow volume and peak flows, as illustrated on Figure 4.3.

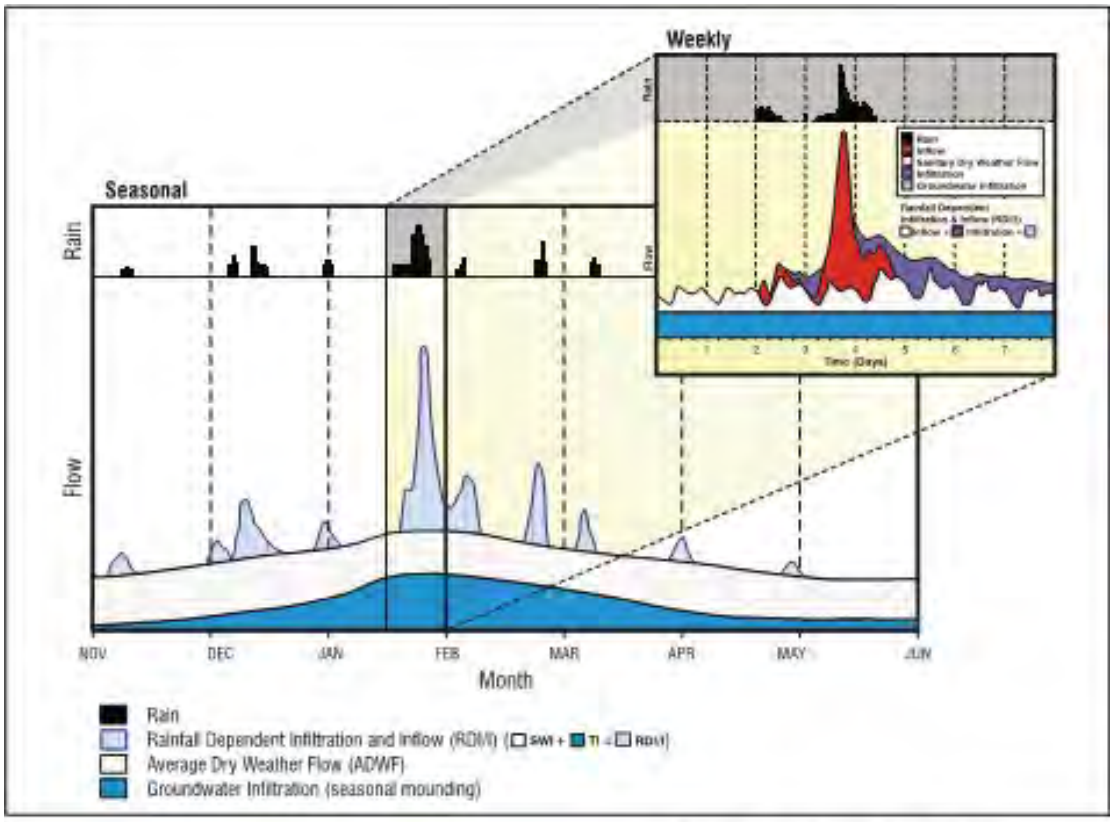
4.2 Temporary Flow Monitoring Program

Carollo contracted with V&A Consulting Engineers (V&A) to conduct a temporary flow monitoring program within the City's sanitary sewer collection system. V&A provided site reports for all of the flow monitoring locations, which is included in Appendix B. Flow monitoring was performed over a 1-month period from February 27, 2018 to March 29, 2018 at 16 flow monitoring sites.

The temporary flow monitoring program helped develop design flow criteria and correlate actual collection system flows to the hydraulic model predicted flows. Flow monitoring data was used to calibrate the collection system hydraulic model for dry weather and wet weather flow and to help to identify areas of the system with the highest rates of I/I.

4.2.1 Flow Monitoring Sites and Tributary Areas

A total of 15 flowmeters were used at 16 open channel sites during the temporary flow monitoring program. One meter was moved from Site 16 to Site 7 approximately halfway through the 1-month period. Additionally, flow monitoring data for Site 3 was only collected from March 13 to March 29, 2018.The flowmeter sites were selected to best isolate and model the critical areas and subareas within the City's wastewater collection system. The flow monitoring sites are listed in Table 4.1 and shown on Figure 4.4. Figure 4.5 provides a schematic illustration of the flow monitoring locations.



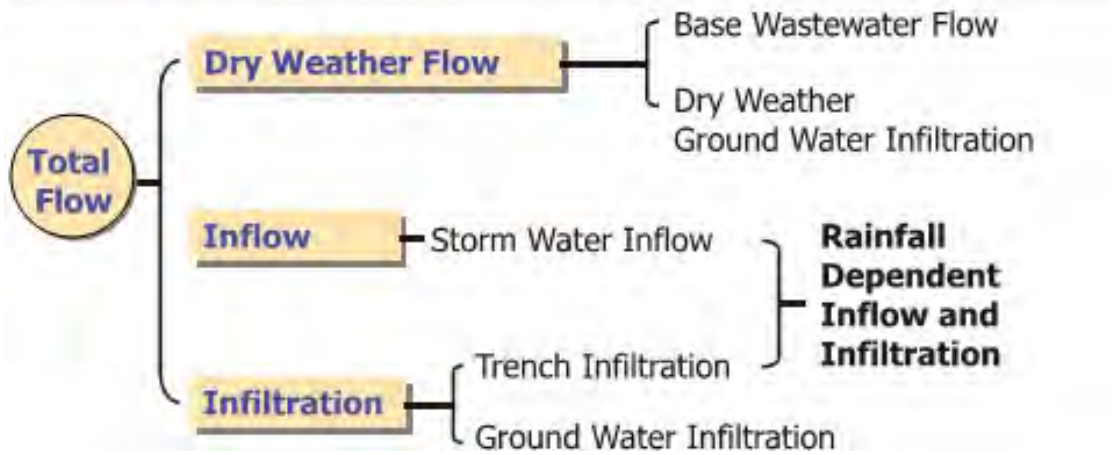


Figure 4.1 Typical Wastewater Flow Components

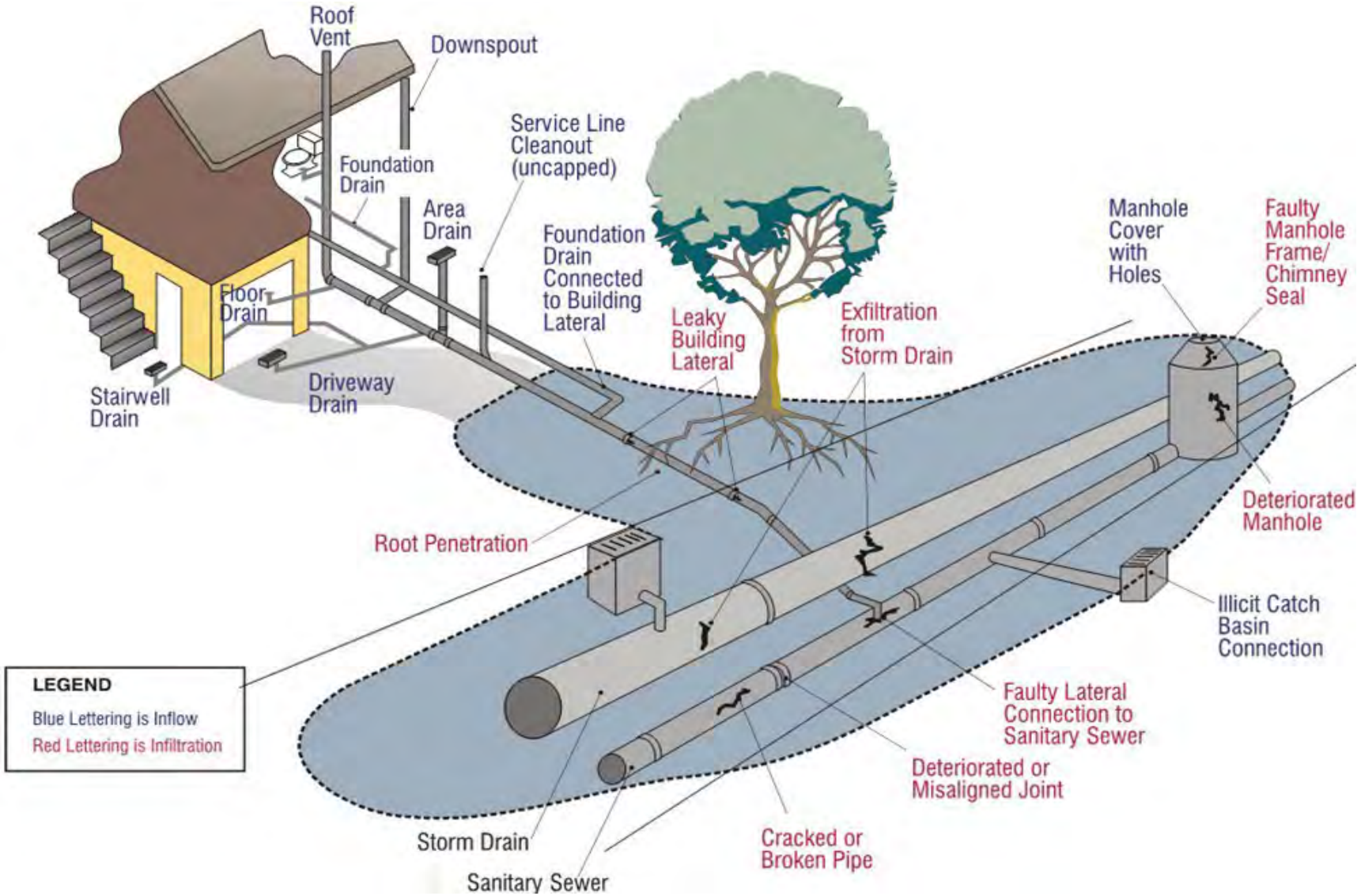


Figure 4.2 Typical Sources of Infiltration and Inflow

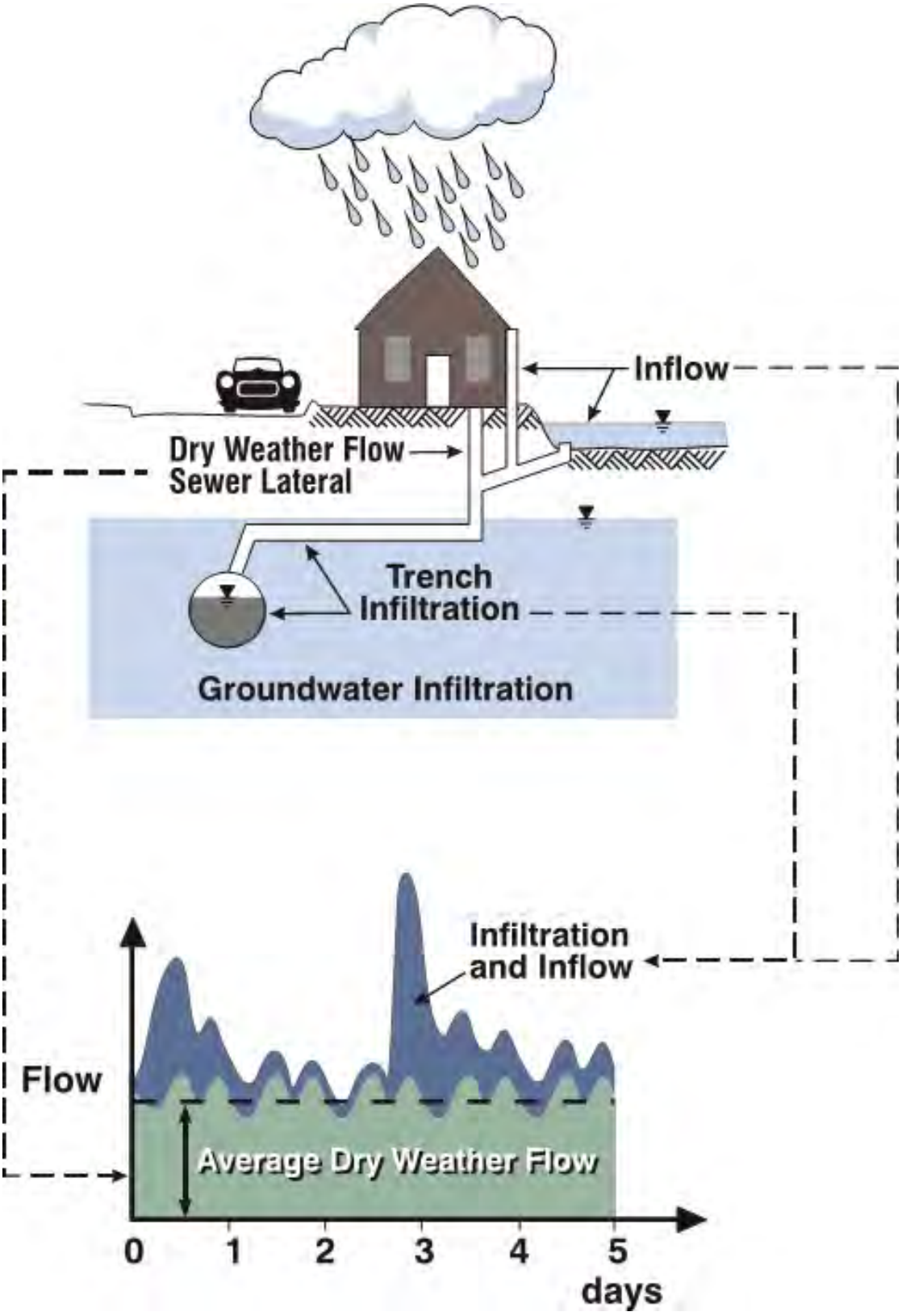


Figure 4.3 Typical Effects of Infiltration and Inflow

Table 4.1 Flow Monitoring Locations

Meter Name	Measured Diameter	Location
TC-01	24.5	Intersection of Larch Road and Spurline Railroad
TC-02	29.75	E Grant Line Road, between Colony Drive and Entrada Way
TC-03	24	MacArthur Drive, north of I205 Freeway
TC-04	15	Tracy Boulevard, north of I205 Freeway (east pipeline)
TC-05	24	Tracy Boulevard, north of I205 Freeway (west pipeline)
TC-06	29.25	North of West Valley Mall
TC-07(2)	20.25	South of intersection of Byron Road and Von Sosten Road
TC-08	18	Holly Drive., south of E Grant Line Road
TC-09	18	Summer Gate Drive and Westbury Court
TC-10	24	Corral Hollow Road between 11th Street and Krohn Road
TC-11	15	Sycamore Park Drive and Sienna Park Drive
TC-12	20.75	Leamon Street and Avila Street
TC-13	18	Along UPRR, east of MacArthur Drive
TC-14	18	East of Cairo Court and De bord Drive
TC-15	21.5	Corral Hollow Road and Alegre Drive
TC-16(2)	12	Bessie Avenue and 23rd Street

Notes:
(1) Source: V&A 2018 Sewer Flow Monitoring and Inflow/Infiltration Study.
(2) Meter moved from Site 16 to Site 7 on 3/13/2018.

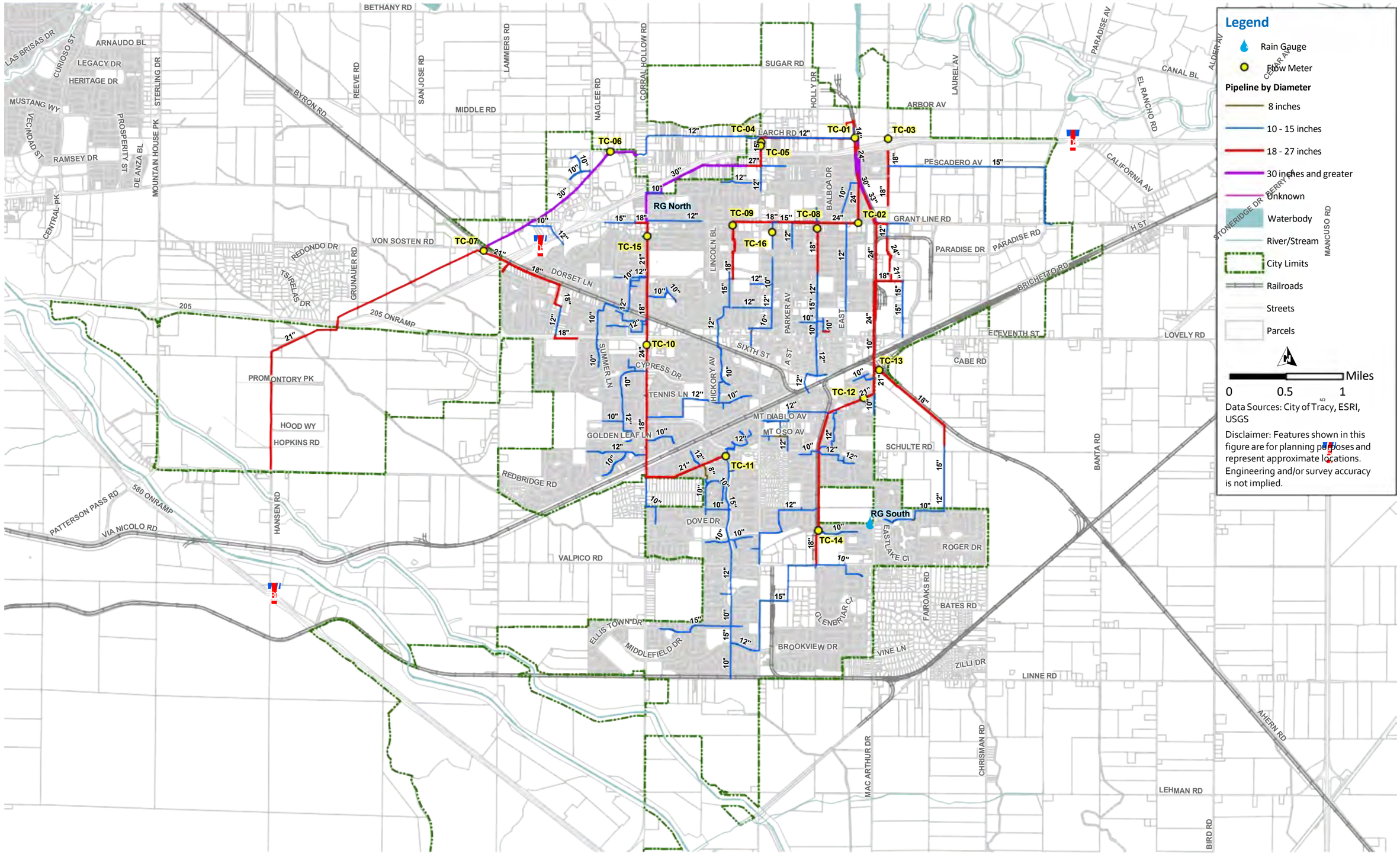


Figure 4.4 Temporary Flow Monitoring Locations

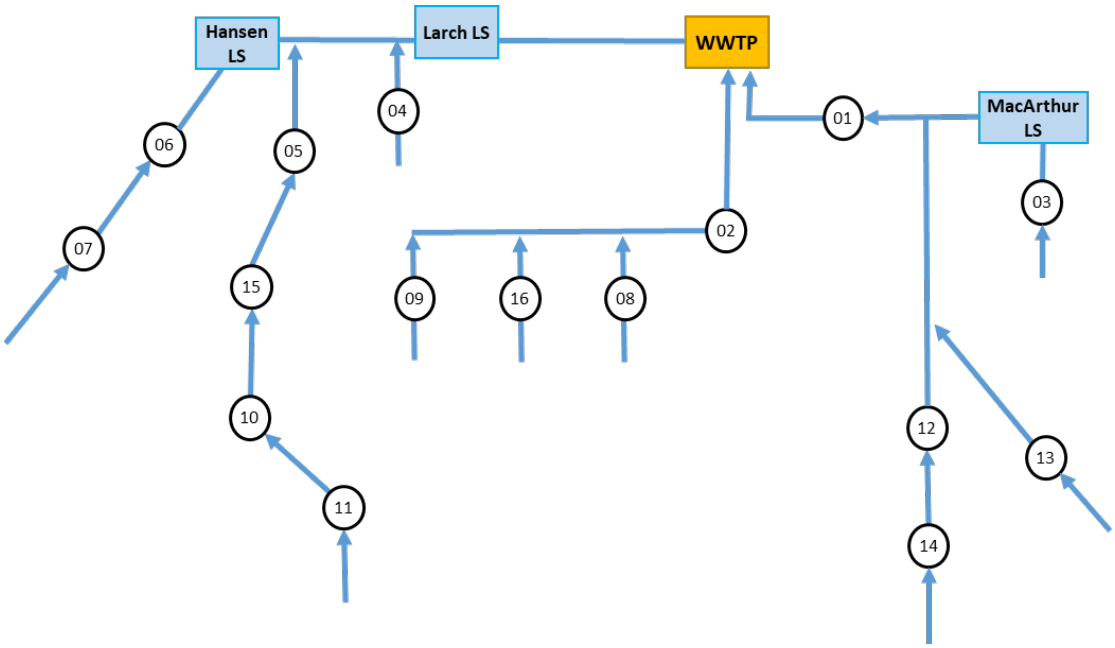


Figure 4.5 Temporary Flow Monitoring Schematic

4.2.2 Flowmeter Installation and Flow Calculation

V&A reviewed the hydraulics of the selected flow monitoring locations to select the optimal flow monitoring technology.

In order to ensure that each meter was accurate and calibrated, manual level and velocity measurements were taken by V&A when each meter was installed and again when they were removed. These manual measurements were compared to simultaneous level and velocity readings from the flowmeters. The pipe diameter was also verified, because the pipe diameter is needed to calculate flow rate in a pipe based on the velocity and level measurements. In addition, the depth of sediment, if any, was measured as this affects the cross sectional area of flow within a pipe. V&A conducted an analysis of the data retrieved from each flowmeter, and made adjustments as needed for calibration based on the field measurements, and to account for any sediment build up. Flow data was collected in 15-minute intervals throughout the flow monitoring period. The flow at each meter was then calculated at 15-minute intervals based on the continuity equation:

$Q = V \times A$, where:

Q = Pipeline flow rate, cfs.

V = Average velocity, ft/sec.

A = Cross sectional flow area, ft^2.

4.3 Flow Monitoring Program Results

This section summarizes the results of the flow monitoring program, including DWF data, rainfall data, and WWF data.

4.3.1 Dry Weather Flow Data

During the flow monitoring period, flow, depth, and velocity data were collected at each meter at 15-minute intervals. Carollo aggregated the 15-minute data to hourly data for use in the hydraulic model. Characteristic dry weather 24-hour diurnal flow patterns for each site were developed based on the hourly data. This hourly flow data was then used to calibrate the hydraulic model for the observed dry weather flows during the flow monitoring period. For this flow monitoring program, V&A developed four ADWF curved for each site location (Monday through Thursday, Friday, Saturday, and Sunday). Hourly patterns were separated this way to better understand how the dry weather flows vary day to day as flows often differ on Friday evenings compared to Monday through Thursday. Similarly, Saturday and Sunday flow patterns were unique during the evening. V&A used the data from days least affected by rainfall to estimate the weekday and weekend ADWF. For sites TC-06 and TC-07, the Monday flow pattern was significantly different from the Tuesday through Friday flow pattern. Therefore, a special Monday average flow condition curve was created for these two sites.

Figure 4.6 illustrates a typical variation of Monday through Thursday, Friday, Saturday, and Sunday flows in the City's collection system, which is based on the data collection from flowmeter Site TC-05. Similar graphics associated with the remaining sites are included in Appendix B. In addition, V&A provided estimates for the average weekday and weekend levels and velocities at each site, which are used for dry weather calibration. Table 4.2 summarizes the dry weather flows at each meter.

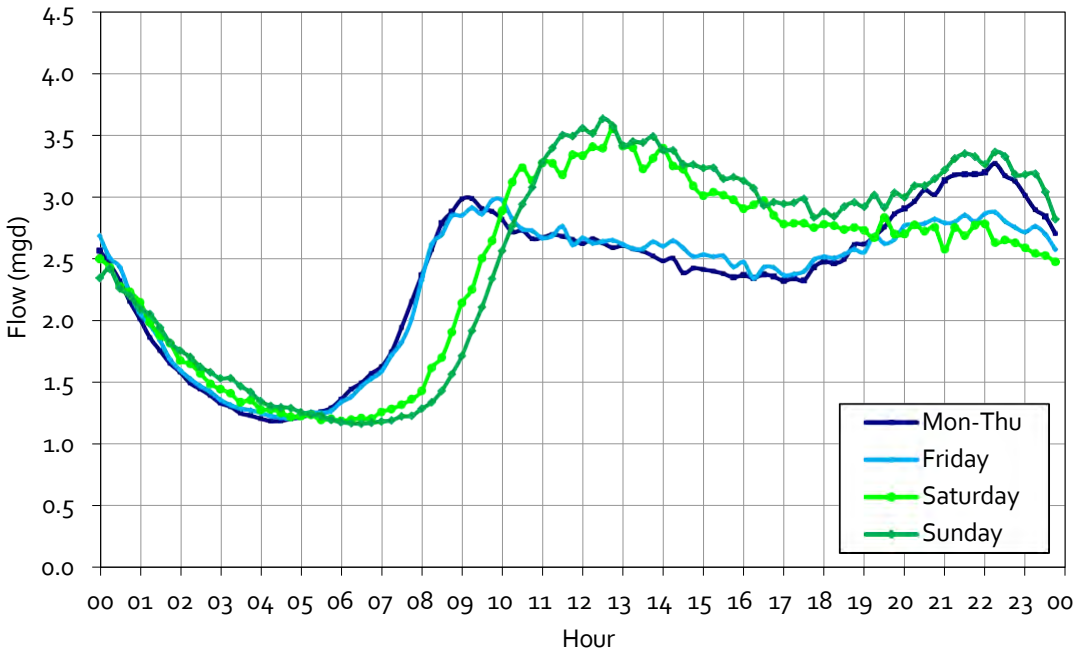


Figure 4.6 Typical Dry Weather Flow Variation (Site TC-05)

Table 4.2 Dry Weather Flow Summary

Meter Site[1]	Monday-Thursday ADWF (mgd)	Friday ADWF (mgd)	Saturday ADWF (mgd)	Sunday ADWF (mgd)	Overall ADWF (mgd)
TC-01	1.63	1.53	1.64	1.65	1.62
TC-02	1.11	1.08	1.11	1.15	1.11
TC-03	0.27	0.28	0.26	0.26	0.27
TC-04	0.60	0.59	0.61	0.61	0.60
TC-05	2.33	2.30	2.40	2.50	2.36
TC-06	1.35 [2]	1.33	1.35	1.24	1.32
TC-07	0.34 [3]	0.32	0.24	0.17	0.28
TC-08	0.44	0.44	0.45	0.47	0.45
TC-09	0.33	0.33	0.35	0.35	0.34
TC-10	1.10	1.12	1.18	1.27	1.14
TC-11	0.33	0.33	0.35	0.39	0.34
TC-12	1.06	1.04	1.14	1.17	1.09
TC-13	0.19	0.18	0.20	0.22	0.19
TC-14	0.62	0.59	0.66	0.69	0.63
TC-15	1.51	1.50	1.59	1.72	1.55
TC-16	0.22	0.21	0.21	0.21	0.21

Notes:
(1) Source: V&A 2018 Sewer Flow Monitoring and Inflow/Infiltration Study.
(2) Meter Site TC-06 has a significantly different Monday ADWF compared to the rest of the week. This number is the Tuesday-Thursday ADWF. The Monday ADWF for TC-06 is 1.26.
(3) Meter Site TC-07 has a significantly different Monday ADWF compared to the rest of the week. This number is the Tuesday-Thursday ADWF. The Monday ADWF for TC-07 is 0.19.

Table 4.3 summarizes the peak measured flows, and peak pipe flow d/D ratios for each meter site during the flow monitoring period.

Table 4.3 Peak Measured Flows During the Flow Monitoring Program

Meter Site	Measured Diameter (inches)	ADWF (mgd)	Peak Measured Flow (mgd)	Peak d/D Ratio
TC-01	24.5	1.62	3.58	0.71
TC-02	29.75	1.11	1.84	0.43
TC-03	24	0.27	0.42	0.32
TC-04	15	0.60	1.03	0.34
TC-05	24	2.36	3.82	0.55
TC-06	29.25	1.32	1.78	0.31
TC-07	20.25	0.30	1.17	1.00
TC-08	18	0.45	0.91	0.39
TC-09	18	0.34	0.59	0.38
TC-10	24	1.14	2.03	0.50
TC-11	15	0.34	0.59	0.26

Meter Site	Measured Diameter (inches)	ADWF (mgd)	Peak Measured Flow (mgd)	Peak d/D Ratio
TC-12	20.75	1.09	1.91	0.29
TC-13	18	0.19	0.46	0.26
TC-14	18	0.63	1.16	0.47
TC-15	21.5	1.55	2.70	0.47
TC-16	12	0.21	0.33	0.58

4.3.2 Rainfall Data

The rainfall data collected by V&A was used to correlate the I/I response observed in the collection system to specific storm recurrence intervals. Several minor rainfall events occurred during the flow monitoring period. The March 3-4, 2018 rainfall event was the largest event captured and elicited the greatest I/I response throughout the collection system. The rain gauges recorded 0.26 inch during the March 3-4, 2018 storm event and a total of 1.89 inches during the entire flow monitoring program.

It is important to classify the size of any major storm events captured during the flow monitoring period. National Oceanic and Atmospheric Administration Atlas 14 provides precipitation frequency estimates for the United States based on historical rainfall data and serves as the industry standard for determining total rainfall depth at specified frequencies and durations. The Atlas provides precipitation frequency estimates for 5-minute through 60-day durations at average recurrence intervals of 1-year through 1,000-year. For example, the Atlas classifies a 10-year, 24-hour storm event in the City as 1.79 inches. This means that in any given year, there is a 10 percent chance that 1.79 inches of rain will fall within a 24-hour period.

4.3.3 Wet Weather Flow Data

The flow monitoring data was also evaluated to determine how the collection system responds to wet weather events. As mentioned above, the flow monitoring program captured one significant rainfall event. The rainfall event that occurred on March 3-4, 2018 was associated with the largest I/I response during the flow monitoring period, and was used for the I/I analysis and model calibration

Figure 4.7 shows an example of the wet weather response at flowmeter TC-08 during the March 3-4, 2018 storm event. The dashed line is the calculated ADWF (baseline flow) while the black line is the measured flow from the flow monitoring period (realtime flow). As shown on Figure 4.7 significant amounts of I/I do enter portions of the collection system during wet weather events. Additional wet weather monitoring results for all meters can be found in Appendix B. The following section summarizes the results from V&A's Inflow/Infiltration Analysis as part of the Temporary Flow Monitoring Program.

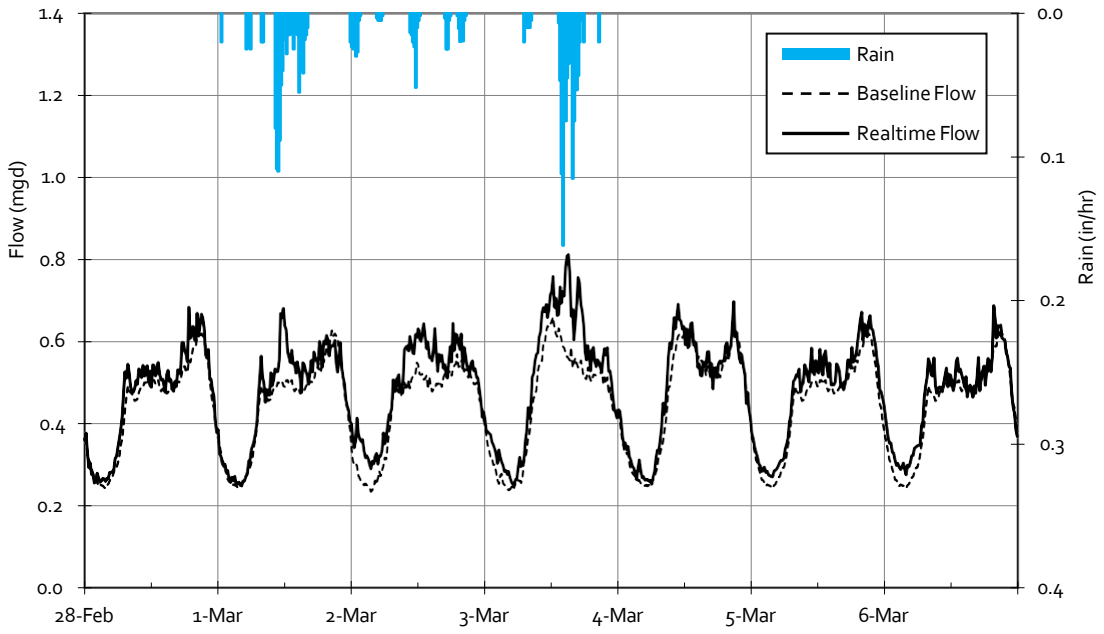


Figure 4.7 Example Wet Weather Response (TC-08)

4.3.4 Inflow and Infiltration Analysis

This section summarizes the I/I findings from the flow monitoring program.

4.3.4.1 Inflow

As discussed earlier in this chapter, inflow is storm water discharged into the sewer system through direct connections. The corresponding flow rates from these direct connections are closely related to the intensity of the storm. Inflow causes peak flow problems that often dictate downstream pipeline and lift station capacity.

4.3.4.2 Rain-Dependent Infiltration

Rain-dependent infiltration (RDI) is water that enters the sanitary sewer system through defects in pipes, joints and manholes. RDI enters the system indirectly and is characterized by flows that increase gradually, are typically sustained for a period after the rainfall has stopped, and then gradually drop off as soils become less saturated and as groundwater levels recede to normal. The major impact of RDI is the cost of pumping and treating the additional volume of water.

4.3.4.3 Peak I/I Rate

The combined I/I analysis considers the total volume of inflow and RDI over the source of a storm event. Table 4.4 summarizes the peak I/I rate for each flow monitoring basin. I/I rate is defined as the rate of flow entering the system during a storm event. The I/I rate is calculated by subtracting out the base flow from the real time inflow.

Table 4.4 Flow Monitoring Basin Peak I/I Rates

Meter Site[1]	ADWF (mgd)	Peak I/I Rate (mgd)
TC-01	1.62	1.57
TC-02	1.11	0.62
TC-03	0.27	0.13
TC-04	0.6	0.31
TC-05	2.36	0.42
TC-06	1.32	0.26
TC-07	0.28	0.66
TC-08	0.45	0.43
TC-09	0.34	0.10
TC-10	1.14	0.25
TC-11	0.34	0.05
TC-12	1.09	0.23
TC-13	0.19	0.07
TC-14	0.63	0.22
TC-15	1.55	0.28
TC-16	0.21	0.09

Notes:
(1) Source: V&A 2018 Sewer Flow Monitoring and Inflow/Infiltration Study.

4.4 Design Flows

This section summarizes the existing and projected flows for the City's wastewater collection system. Flow parameters used to evaluate capacities of treatment processes are also discussed.

4.4.1 Wastewater Flow Factors

In order to develop wastewater flow projections and allocate future flows to the collection system, relationships between land use and wastewater generation were developed. These relationships, called wastewater flow factors are established based on the average wastewater flow generated (based on flow data collected from the temporary flow monitoring program) for each existing land use type. These wastewater flow factors were compared to the per capita wastewater generation flow rates used to project future wastewater flows in the City's previous capacity analysis studies.

Unit flow factors provide a means to estimate flow per acre for each land use category. Wastewater unit flow factors, expressed in gallons per day per acre (gpd/ac), are applied to land use acreage for calculating average day flow generated from a particular land use type. A unit flow factor was developed for each of the City's existing land use classifications.

The wastewater flow factors were developed based on flow monitoring data collected during the 2018 Temporary Flow Monitoring Program only and includes all flowmeter basins within the study area.

The wastewater flow factors were developed using the following procedure:

1. Average flow for the entire system was derived from the flow monitoring data (described in detail in Section 4.3).
2. Using geographic information system (GIS), the acres for each land use type were calculated.
3. Preliminary wastewater flow factors for each land use type are estimated based on values that are typical for the approximate number of dwelling units per acre and the typical number of people per dwelling unit for each land use type.
4. The coefficients are then adjusted up or down (balanced) so that the calculated average flows match the measured data from the flow monitoring data.

The final wastewater flow factors developed for this Master Plan are summarized in Table 4.5. In general, flow factors for residential areas can range between 250 to 4,000 gpd/ac, and commercial and industrial areas may range from 500 to 3,000 gpd/ac or higher. Open space land use types were assumed to generate negligible amounts of wastewater flow. For the City's collection system, the developed flow factors ranged from 350 gpd/ac for very low density residential land uses to 3,600 gpd/ac for high density residential land uses, as shown in Table 4.5.

Table 4.5 Wastewater Flow Factors

Land Use Type	Existing Developed Acreage	Wastewater Flow Factor (gpd/ac)	Wastewater Flow (mgd)
Residential Very Low	76	350	0.03
Residential Low	2,817	1,000	2.82
Residential Medium	792	2,100	1.66
Residential High	158	3,600	0.57
Commercial	501	900	0.45
Industrial	1,828	750	1.37
Downtown	111	800	0.09
Public Facilities	665	550	0.37
Park	227	0	0.00
Aggregate	2	0	0.00
Total	**7,176**	**-**	**7.35**

For future developments, Carollo recommended using a flow per dwelling unit (du) factor for single family residential and multi-family residential. These flow factors were determined based on the wastewater flow factors presented in Table 4.5, and the number of existing single family and multi-family residential units in the system now. A flow factor of 230 gallons per day per dwelling unit (gpd/du) is recommended for single family residential, and a flow factor of 150 gpd/du is recommended for multi-family residential. These flow factors were determined based on a total of 22,945 single family residential units, 4,506 multi-family residential units, and an average of 3.64 persons per households. These flow factors were utilized for known developments where the number of units was known. If the number of units was not known for future development areas, the flow factors from Table 4.5 were used.

4.4.2 Average Dry Weather Flow

Developing an accurate estimate of the future quantity of wastewater generated at build out of the collection system is an important step in maintaining and sizing sewer system facilities, for both existing conditions and future developments. The calibrated ADWF based on the flow monitoring data was not changed for the existing parcels currently connected to the City's wastewater collection system. In General, the following assumptions were used for determining the future ADWF for the interim and buildout scenarios:

Future development wastewater flow projections were based on planned development areas, land use, per capita rates and wastewater flow factors. These flows were then added to the appropriate planning year.

Known residential development flows were calculated based on per capita flow rates and residential units. Known development, other than residential, used wastewater flow factors to project ADWF. As shown in Table 4.6, known development within the City is projected to be 4.09 million gallons per day (mgd) for planning year 2040 and an additional 2.84 mgd by ultimate buildout.

Table 4.6 Known Development Flows

Planning Area Name	Planning Year ADWF (mgd)		
	2025	2040	Buildout
UR 5 (Bright) (1)	0.00	0.18	0.00
UR 7 (Bright/Castro) (2)	0.03	0.10	0.00
Rocking Horse (3)	0.06	0.00	0.00
Tracy Village (4)	0.09	0.05	0.00
UR1 (5)	0.04	0.17	0.46
Ellis (6)	0.03	0.14	0.00
Ellis DA additional RGAs (7) **2250 RGAs	0.00	0.52	0.00
Avenues (8)	0.00	0.10	0.00
UR10 (9)	0.00	0.00	0.09
Tracy Hills (10)	0.27	1.03	0.54
Gateway (11)	0.10	0.25	0.09
UR6 (Cordes Ranch) (12)	0.10	0.60	0.05
UR4 (Bright Triangle) (13)	0.00	0.00	0.23
UR3 (Catellus) (14)	0.00	0.00	0.49
I-205 Expansion (15)	0.00	0.22	0.17
West Side Industrial (16)	0.12	0.24	0.00
East Side Industrial (17)	0.00	0.28	0.00
Larch Clover (18)	0.01	0.00	0.34
Chrisman Road (19)	0.00	0.00	0.09
Rocha (20)	0.00	0.00	0.13
Berg/Byron remainder (21)	0.01	0.00	0.09
Berg Road Subdivision (22)	0.02	0.00	0.00

Planning Area Name	Planning Year ADWF (mgd)		
	2025	2040	Buildout
SWC Valpico and Corral Hollow (23)	0.00	0.00	0.06
Kagehiro (24)	0.01	0.00	0.00
Dobler/ Maibes (25)	0.00	0.02	0.00
Holly Sugar Industrial	0.00	0.09	0.00
Northeast Industrial Area	0.19	0.07	0.00
I-205 Specific Plan	0.00	0.03	0.00

Along with known development, the city provided some infill information. The same methodology that was used to calculate flows for known developments was used to calculate infill flows. Table 4.7 summarizes the existing and future ADWF.

Table 4.7 Existing and Projected ADWF Summary

Planning Horizon	ADWF (mgd)
Existing	7.35
2040	12.84
Buildout	15.65

4.4.3 Peak Wet Weather Flow

The PWWF is the highest observed hourly flow that occurs following the design storm event (discussed in Chapter 3). Wet weather (I/I), which occurs during and after rainfall events, increases flows in the collection system. PWWF is typically used for designing sewers and lift stations. Therefore, the PWWF is the design flow for the purpose of this study. The City's sewers and lift stations were evaluated based on their capacity to convey the PWWF.

The existing PWWF was derived based on the hydraulic modeling results. This was accomplished by routing the 10-year, 24-hour design storm through the hydraulic model, which was calibrated to both dry weather and wet weather conditions. Detailed information regarding the calibration of the City's hydraulic model is provided in Chapter 5.

Similar to the existing PWWF, the future PWWF was derived by routing a 10-year, 24-hour design storm through the hydraulic model. A future R-value was developed to generate average peak I/I rate of 500 gpd/ac and was assigned to large vacant areas within the study area. The future I/I for large vacant areas was calculated by multiplying the peak I/I rate of 500 gpd/ac and the total area in acres. The peak I/I rate for future growth typically ranges from 500 to 1,000 gpd/ac. Small, infill areas that fell within an existing loading polygon were assigned the calibrated R-values of the associated flow monitoring basin.

Table 4.8 presents a concise summary of flow and rainfall characteristics observed over several years. Ten years of hourly historical flow data influent to the treatment plant was reviewed and correlated to rainfall data for the same period to determine the existing PWWF. The data analysis suggests that the system exhibits a PWWF of 17.0 mgd during a period characterized by saturation and rainfall conditions similar in duration and intensity to a 10-year 24-hour event. As shown in Table 4.8 summarizes the events in January of 2023 most closely correlated to the design storm event. The data highlights variations in flow rates and rainfall amounts, providing

insights into the water system's behavior. The average annual daily flow ranges from 7.3 mgd to 8.2 mgd, with peak hourly flows ranging from 12.5 mgd to 20.0 mgd. Rainfall amounts vary from 3.6 inches to 13.0 inches annually, with peak daily rainfall ranging from 0.6 inches to 3.39 inches. The peaking factor indicates the magnitude of flow during peak periods, while the storm classification categorizes the intensity based on the duration.

Table 4.8 Historical Data of Flow and Rainfall Characteristics

Year	Average Annual Daily Flow (mgd)	Peak Hourly Flow (mgd)	Total Annual Rainfall (inch)	Peak Daily Rainfall (inch)	Peaking Factor	Storm Classification (24-hour)
2013	7.7	13.3	3.6	0.8	1.72	<1 year
2014	7.6	13.2	11.3	0.8	1.73	<1 year
2015	7.3	13.1	4.6	1.2	1.79	2 years
2016	8.2	15.0	10.7	1.2	1.83	2 years
2017	7.8	15.8	6.9	0.8	2.02	<1 year
2018	7.5	12.8	11.0	1.2	1.71	2 years
2019	7.9	12.8	13.0	0.6	1.62	<1 year
2020	7.7	12.5	5.0	0.7	1.62	<1 year
2021	7.6	14.0	12.0	1.9	1.84	10 – 25 years
2022	8.2	20.0	9.3	3.39	2.44	200 - 500 year
2023	NA	17.0	NA	1.54	NA	5 – 10 years
MP	7.6	13.1	NA	1.8	1.78	10 years
Average	7.75	14.25	8.74	1.13	1.832	NA

Table 4.9 presents a summary of the existing and future ADWF and PWWFs as well as the PWWF peaking factors. In the existing scenario, the ADWF is 7.35 mgd, and the PWWF is 16.95 mgd. The factor indicates the ratio of PWWF to ADWF is 2.31. In the 2040 scenario, the ADWF increases to 12.22 mgd, and the PWWF is approximately 22.53 mgd. The PWWF/ADWF factor decreases to 1.84. In the buildout scenario, the PWWF rises to 30.14 mgd. The PWWF/ADWF factor also increases slightly to 1.93.

Table 4.9 Projected PWWF Summary

Planning Horizon	ADWF (mgd)	PWWF (mgd)	PWWF/ADWF Factor
Existing	7.35	16.95	2.31
2040	12.22	25.35	2.07
Buildout	15.65	30.14	1.93

Overall, Table 4.9 provides a comparison of flow values and factors for different planning horizons, highlighting potential changes in water flow patterns.

Chapter 5

COLLECTION SYSTEM FACILITIES AND HYDRAULIC MODEL

This chapter describes the development and calibration of the City's wastewater collection system hydraulic model. It provides a description of the existing collection system, the hydraulic model, and an outline of the steps used to develop the model, as well as a detailed summary of the hydraulic model calibration steps and results.

5.1 Existing Wastewater Collection System

The existing wastewater collection system consists of approximately 210 miles of sanitary sewer pipelines ranging from 4 inches to 48 inches, as well as 3 wastewater lift stations. Figure 5.1 presents the City's existing wastewater collection system. Generally, the flow within the system flows from south to north. The Hansen lift station collects flow from the Hansen Road sewer and the flows into the Larch lift station which is then conveyed to the WWTP. Larch lift station collects flows from Corral Hollow Road. MacArthur lift station collects flows on the east side of the system and conveys flows to the WWTP. A gravity main along the spur line railroad conveys a portion of the system to the WWTP by gravity. Figure 5.2 shows a schematic of the City's existing collection system.

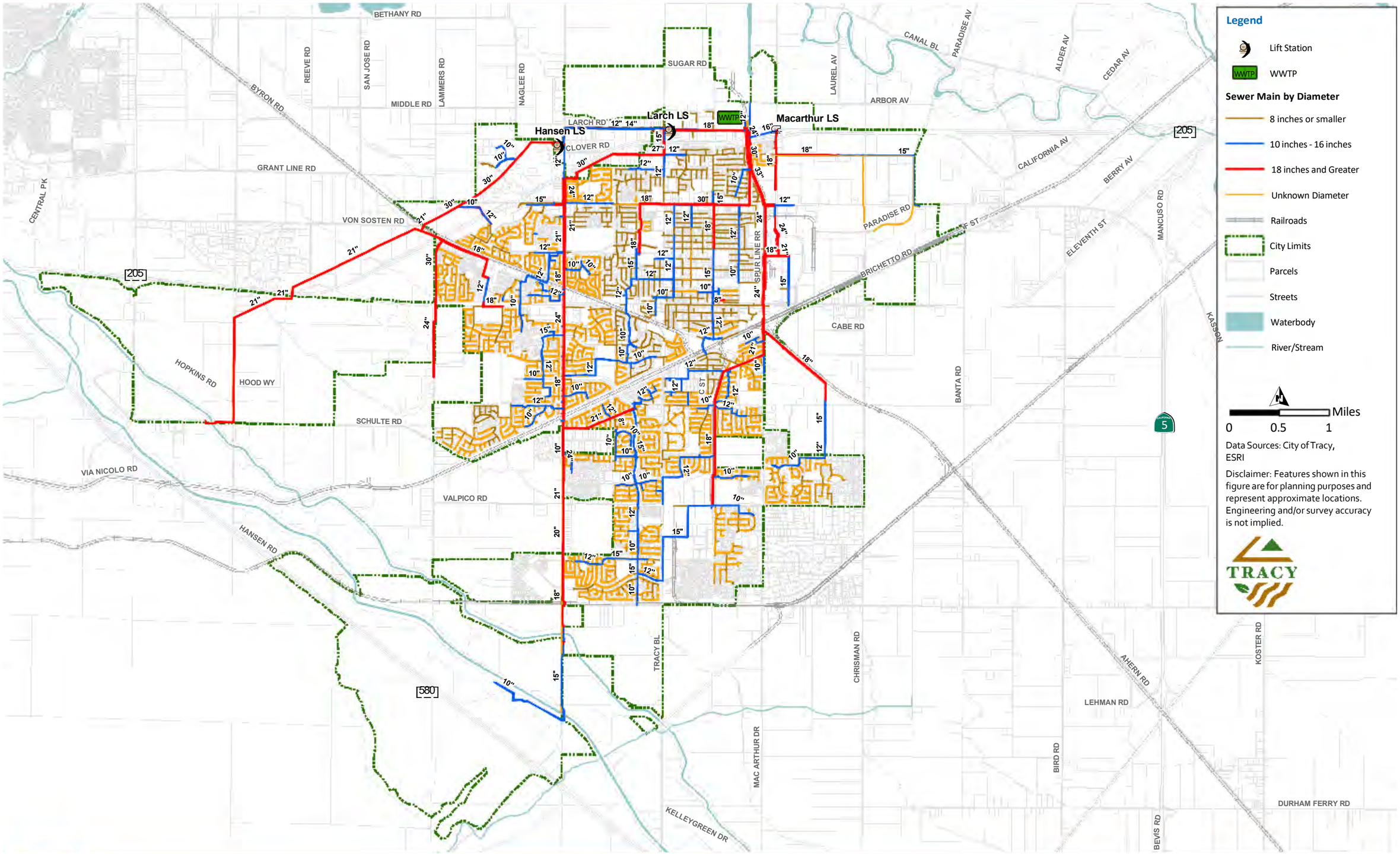
5.1.1 Pipeline Distribution by Diameter

Table 5.1 summarizes the total length of pipeline for each diameter in the domestic collection system. The table is based on GIS data and available drawings provided by City staff. The table excludes private sewer pipelines within the study area and does not account for pipelines within the WWTP.

As shown in Table 5.1, nearly all of the City's sewer pipelines are gravity. The majority of the City's gravity sewers are 8 inches in diameter, with the largest being 48 inches in diameter.

5.1.2 Lift Stations

The City owns and operates 3 active wastewater lift stations throughout the City. Figure 5.1 shows the location of each lift station. Table 5.2 summarizes the available data for each of the City's active lift stations.



Legend

- Lift Station
- WWTP

Sewer Main by Diameter

- 8 inches or smaller
- 10 inches - 16 inches
- 18 inches and Greater
- Unknown Diameter
- Railroads
- City Limits
- Parcels
- Streets
- Waterbody
- River/Stream

N

0 0.5 1 Miles

Data Sources: City of Tracy, ESRI

Disclaimer: Features shown in this figure are for planning purposes and represent approximate locations. Engineering and/or survey accuracy is not implied.

TRACY

Figure 5.1 Wastewater Collection System

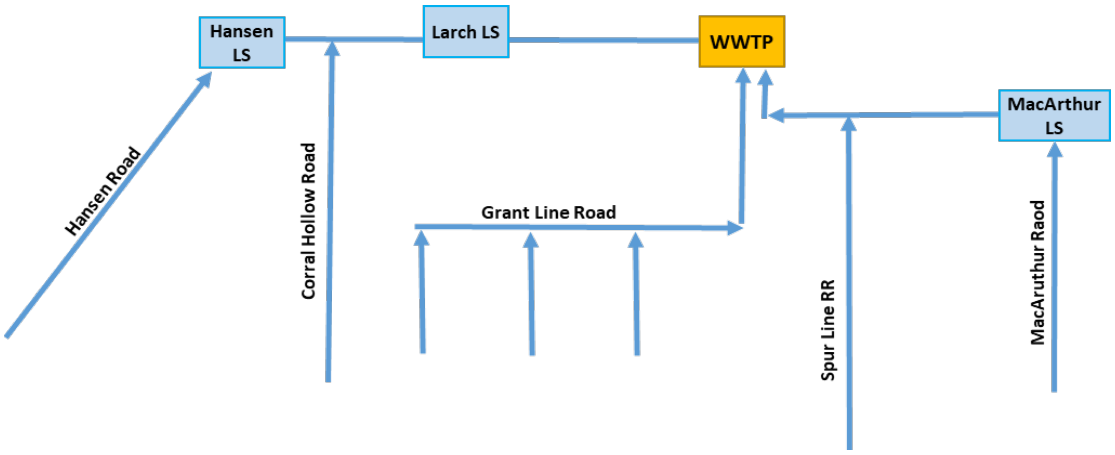


Figure 5.2 Existing System Schematic

Table 5.1 Total System Pipeline Diameter Overview

Diameter	Length (feet)	Length (miles)	Percent
Gravity			
4	11,527	2.2	1.0 percent
6	70,900	13.4	6.3 percent
8	691,500	131	61.8 percent
10	69,600	13.2	6.2 percent
12	72,900	13.8	6.5 percent
15	41,900	7.9	3.7 percent
16	700	0.1	0.1 percent
18	38,800	7.3	3.5 percent
20	3,000	0.6	0.3 percent
21	40,200	7.6	3.6 percent
24	27,000	5.1	2.4 percent
27	1,300	0.2	0.1 percent
30	22,700	4.3	2.0 percent
33	4,000	0.8	0.4 percent
48	200	0	0.0 percent
Subtotal	**1,096,227**	**207.6**	**98.0 percent**
Force Main			
12	6,415	1.2	0.6 percent
14	6,415	1.2	0.6 percent
16	1,907	0.4	0.2 percent
18	4,069	0.8	0.4 percent
24	4,069	0.8	0.4 percent
Subtotal	**22,875**	**4.4**	**2.0 percent**
Total	**1,119,102**	**212.0**	**100.0 percent**

Table 5.2 Lift Station Information

Lift Station Name	Location	No. of Pumps	Firm Capacity[1] (mgd)
Hansen[2]	Corral Hollow Road, n/o Clover Road	4	9.01
Larch[2]	Larch Road and Tracy Boulevard	4	12.96
MacArthur	205 Freeway and MacArthur Drive	3	5.33

Notes:
(1) Firm capacity represents the lift station capacity with the largest pump out of service.
(2) Capacity determined from flow tests performed by the City.

5.2 Hydraulic Model Development

A sewer collection system model is a simplified representation of the real sewer system. Sewer system models can assess the conveyance capacity for a collection system. In addition, sewer system models can perform "what if" scenarios to assess the impacts of future developments and land use changes. The City's collection system hydraulic model was constructed using a multi-step process utilizing data from a variety of sources. This chapter summarizes the hydraulic model development process, including a summary of the modeling software selection, a description of the modeled collection system, the hydraulic model elements, the model creation process, and the model calibration process.

5.2.1 Hydraulic Modeling Software

There are several software applications for network analysis with a variety of capabilities and features. The selection of a particular model is generally dependent upon user preference, the requirements of a particular collection system, and the cost associated with the software.

InfoSWMM®, developed by Innovyze (formerly MWH Soft), was selected as the software platform for the development of the City's hydraulic model. The hydraulic modeling engine for InfoSWMM® uses the Environmental Protection Agency's (EPA's) Storm Water Management Model (SWMM), which is widely used throughout the world for planning, analysis, and design related to stormwater runoff, combines sewers, sanitary sewers, and other drainage systems. InfoSWMM® routes flow through the model using the Dynamic Wave method, which solves the complete Saint Venant, one dimensional equations of fluid flow.

InfoSWMM® consists of multiple products that work together to bring a graphical approach to the analysis and design of wastewater and stormwater collection systems, the program includes seamless integration with GIS data.

5.2.2 Data Collection and Validation

The primary sources for the development of the hydraulic model were available design drawings, as-builts construction drawings, and GIS data. The existing collection system was mainly constructed with drawings and as-builts, while GIS was used for the collection system alignment and manhole placement.

5.2.3 Skeletonizing

Skeletonizing is the process of removing pipelines not considered to be essential for the purpose of analysis. While skeletonizing the system minimizes the number of pipelines analyzed, an accurate representation of the collection system is maintained. For the City's hydraulic model, pipelines 10 inches in diameter and larger were included as well as some smaller diameter

pipelines for connectivity. The skeletonized model included approximately 66 miles of pipelines. Figure 5.3 shows the skeletonized modeled wastewater collection system.

5.2.4 Elements of the Hydraulic Model

The following provides a brief overview of the major elements of the City's hydraulic model and the required input parameters associated with each:

- **Manholes:** Sewer manholes, cleanouts, as well as other locations where pipe sizes change, where pipelines intersect, or where force mains connect to gravity mains, are represented by manholes in the hydraulic model. Required inputs for manholes include diameter, sanitary loads, and ground, rim, and invert elevations. Manholes can also be used to represent locations where flows are split or diverted between two or more downstream links.
- **Conduits:** Gravity sewers are represented as conduits in the hydraulic model. Input parameters for conduits include length, diameter, material, friction factor (Manning's n), and invert elevations.
- **Pressure Pipes:** Force mains are represented as pressure pipes in the hydraulic model. Required input parameters are length, diameter, invert elevations, and friction factor (i.e., Hazen Williams C).
- **Pressure Junctions:** Pressure junctions are used to connect multiple force main segments. They are needed when an individual pipe changes in diameter or material and can be used to represent a pressure gauge. Required input includes ground and node elevations. Node elevations correspond to inverts of the contiguous pressure pipes.
- **Wet Wells:** Required input parameters for wet wells include cross section type (circular or variable area), wet well diameter or cross sectional area, and wet well base (bottom), ground (top), maximum (high water level), and minimum elevations (low water level).
- **Pumps:** Pumps are included in the hydraulic model as links. Input parameters for pumps include type (single point, multiple point, variable speed, etc.), pump capacity/head information, operational controls (on/off set points), ground elevation, and pump invert elevation.
- **Outfalls:** Outfalls represent areas where flow leaves the system. For sewer system modeling, an outfall typically represents a wastewater treatment plant. Required input parameters include boundary conditions (free outfall, normal, user-defined tailwater, etc.), ground elevation, and invert elevation.
- **Patterns:** Diurnal patterns are used to simulate the variation in flow throughout the day. Patterns can be established for any time period, including multi-day patterns (48-hour, 72-hour, etc.).
- **Catchments:** Often referred to as loading polygons, sewer sheds, or tributary areas, catchments are used in the wet weather scenarios. Required input parameters include user defined area, outflow element (typically a manhole), storm event pattern, runoff method (unit hydrograph, modified-rational, time-area, etc.), unit hydrograph method (generic, RTK, and SCS), and RTK set. The area of a catchment affects the amount of I/I to a particular manhole. A smaller catchment will have less I/I than a larger catchment.
- **Flows:** The following are the two types of wastewater flow sources that can be injected into individual model elements:
  - Loads: Loads simulate base sanitary wastewater flows and represent the average flow. The base flows are multiplied by a pattern that varies the flow temporally. The

base flow diurnal patterns are adjusted during the dry weather calibration process. Sanitary loads can be applied to manholes, wet wells, and pressure junctions.

- **Stormwater Flows:** RDII flows are applied in the model by assigning a unit hydrograph and a corresponding catchment to a given loading manhole. The unit hydrographs consists of several parameters that are used to adjust the volume of RDII that enters the system at a given location. These parameters are adjusted during the wet weather calibration process.

5.2.5 Hydraulic Model Construction

The City's hydraulic model combines information on physical and operational characteristics of the wastewater collection system and performs calculations to solve a series of mathematical equations to simulate flows in pipelines.

The model construction process consisted of six steps, as described below:

- **Step 1:** The City's drawings and GIS shapefiles for the sewer collection system were obtained.
- **Step 2:** The GIS data was reviewed and formatted to allow easy import into the InfoSWMM® modeling platform. The City's collection system alignment and manhole placement were imported into the modeling software.
- **Step 3:** Some physical and operational data for the City's wastewater collection facilities were not available from the GIS data. Data, such as pipeline inverts, wet well dimensions, pump stations, and other special features, were input manually into the model based on available information. In addition, discrepancies with pipeline alignment and junction placement were reviewed and manually input or modified based on City records, field reconnaissance, and engineering judgment.
- **Step 4:** Once all the relevant data was input into the hydraulic model, the model was reviewed to verify that the model data was input correctly and that the flow direction and size of the modeled pipelines were logical. Additionally, the modeled lift stations were also checked to verify that they operated correctly.
- **Step 5:** Dry weather wastewater flows were then allocated to the appropriate model junctions. These flows were scaled up or down, as necessary, to match the dry weather flows recorded during the flow monitoring period.
- **Step 6:** The hydraulic model contains certain run parameters that need to be set by the user at the beginning of the project. These include run dates, time steps, reporting parameters, output units, and flow routing method. Once the run parameters were established, the model was debugged to ensure that it ran without errors or warnings.

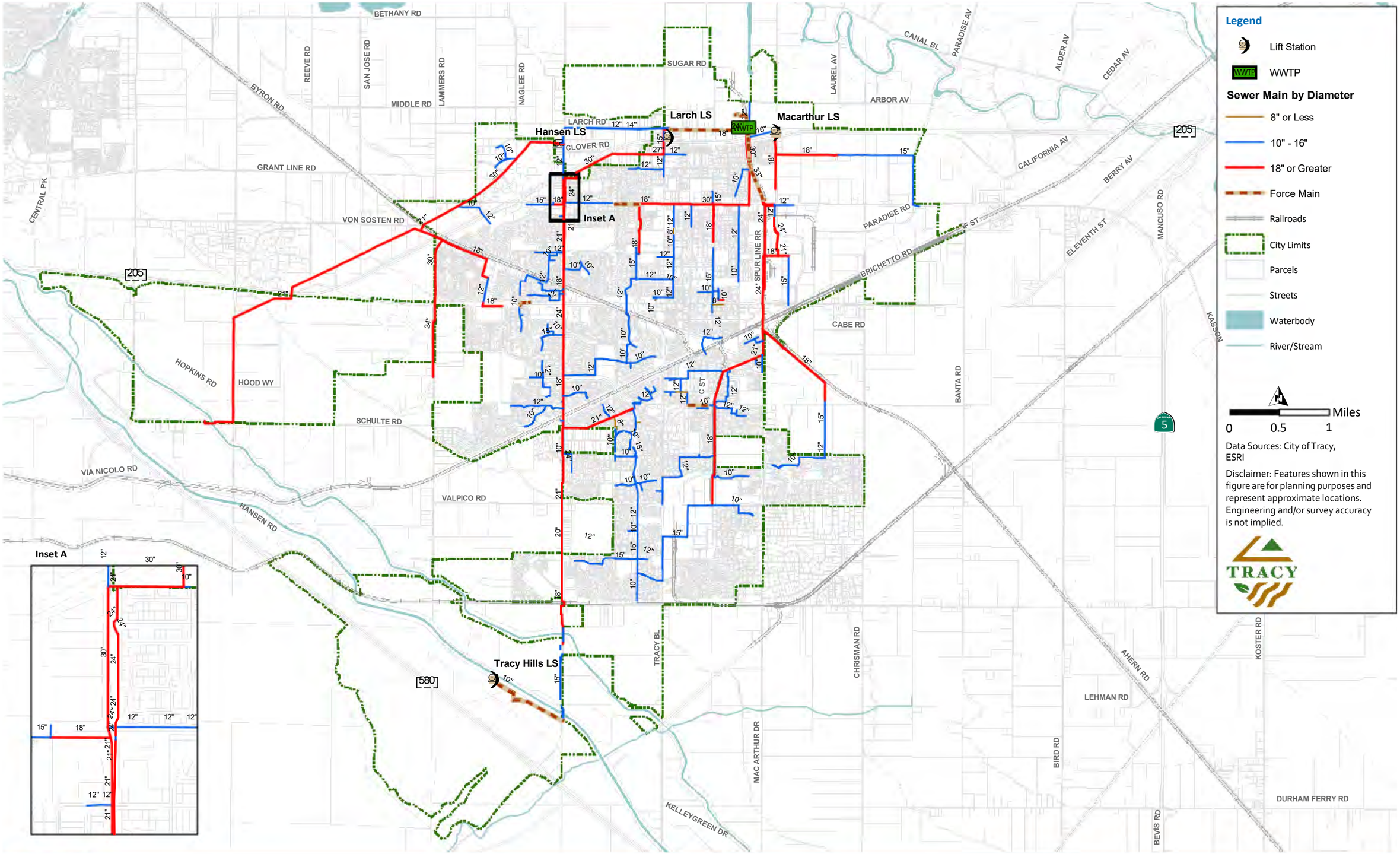


Figure 5.3 Modeled Collection System

5.3 Load Allocation

Determining the quantity of base wastewater flows generated by a municipality and how they are distributed throughout the collection system is a critical component of the hydraulic modeling process.

Various techniques can be used to assign wastewater flows to individual model junctions, depending on the type of data that is available. Adequate estimates of the volume of wastewater are important in maintaining and sizing sewer system facilities, both for present and future conditions. Baseline wastewater loads were allocated (assigned to specific nodes) in the hydraulic model based on land use data provided by the City, as well as the flow data from the temporary flow monitoring program. The following steps outline the wastewater load allocation process:

- **Step 1:** The City's service area was broken up into individual loading polygons. In a "skeletonized" (i.e., truncated model) model, a loading polygon will usually encompass a particular subdivision or grouping of lots. However, a loading polygon could be as small as a few parcels. Each loading polygon represents the geographic area that contributes flows into a single model node (i.e., manhole), and was developed using GIS based on the City's parcel and sewer pipeline shapefiles.
- **Step 2:** One approach for estimating the existing ADWF associated with each loading polygon is based on land use designations, flow coefficients, and land use area. In reality, the wastewater generation rates of each existing customer will vary from an average flow coefficient (significantly in some cases). For this reason, water billing records can be considered as an alternative to the land use based load allocation method for existing DWFs. For this project, water consumption billing records were available. Thus, billing records were used. Billing records were assigned point loads in GIS. Loading polygons were developed based on the parcels that discharge into certain manholes. Using InfoSWMM's "Load Allocator" tool, point loads and the loading polygons calculated the loads in the model.
- **Step 3:** Once the existing wastewater flows were allocated into the model, they were adjusted as needed during model calibration to closely match the DWFs recorded during the flow monitoring program.

5.4 Hydraulic Model Calibration

Hydraulic model calibration is a crucial component of the hydraulic modeling effort. Calibrating the model to match data collected during the flow monitoring program is critical to achieve the most accurate results possible. The calibration process typically consists of calibrating to both dry and wet weather conditions.

For this project, DWF monitoring was conducted at 16 metering sites for a period of approximately one month. DWF calibration provides an accurate depiction of base wastewater flow generated within the study area. The WWF calibration consists of calibrating the hydraulic model to a specific storm event or events to accurately simulate the peak and volume of I/I into the sewer system. The amount of I/I is essentially the difference between the WWF and DWF components.

5.4.1 Wastewater Calibration Standards

The hydraulic model was calibrated in accordance with international modeling standards. The Wastewater Planning Users Group (WaPUG), a section of the Chartered Institution of Water and Environmental Management, has established generally agreed upon principles for model verification. The dry weather and wet weather calibration focused on meeting the recommendations on model verification contained in the "Code of Practice for the Hydraulic Modeling of Sewer Systems," published by the WaPUG (WaPUG 2002), as summarized below:

- **Dry Weather Calibration Standards:** Dry weather calibration should be carried out for two dry weather days and the modeled flows and depths should be compared to the field measured flows and depths. Both the modeled and field measured flow hydrographs should closely follow each other in both shape and magnitude. In addition to the shape, the flow hydrographs should also meet the following criteria as a general guide:
  - The timing of flow peaks and troughs should be within 1 hour.
  - The peak flow rate should be within the range of ±10 percent.
  - The volume of flow (or the average rate of flow) should be within the range of ±10 percent. If applicable, care should be taken to exclude periods of missing or inaccurate data.
- **Wet Weather Calibration Standards:** The model simulated flows should be compared to the field measured flows. The flow hydrographs for both events should closely follow each other in both shape and magnitude, until the flow has substantially returned to dry weather flow rates. In addition to the shape, the flow hydrographs should also meet the following criteria as a general guide:
  - The timing of the peaks and troughs should be similar with regard to the duration of the events.
  - The peak flow rates at significant peaks should be in the range of +25 percent to -15 percent and should be generally similar throughout.
  - The volume of flow (or the average flow rate) should be within the range of +20 percent to -10 percent.

5.4.2 Dry Weather Flow Calibration

The DWF calibration process consists of several elements, as outlined below:

- **Divide the system into flow meter tributaries.** The first step in the calibration process was to divide the City into flowmeter tributary areas. Sixteen tributary areas were created, one for each flow meter from the temporary flow monitoring program. A map showing the locations of each flow monitoring site and their associated tributary area are provided in Chapter 4 along with a schematic of the flow meters.
- **Define flow volumes within each area.** The next step was to define the flow volumes within each area, which was accomplished in the flow allocation step.
- **Create diurnal patterns to match the temporal distribution of flow.** A diurnal curve is a pattern of hourly multipliers that are applied to the base flow to simulate the variation in flow that occurs throughout the day. Two diurnal curves were developed for each flow monitoring tributary area, one representing weekday flow and one representing weekend flow. The diurnal patterns were initially developed based on the flow monitoring data and adjusted as part of the calibration process until the model

simulated flows matched the field measured flows as closely as possible. Figure 5.4 shows the calibrated weekday and weekend diurnal patterns for the area tributary to Meter TC-09. Similar diurnal curves were developed for each of the meters and its tributary area. The DWF calibration curves are provided in Appendix C.

- **Adjust model variables to match field-measured velocity and flow depths.** After the model-simulated flows satisfactorily matched the field-measured flows, the model-simulated velocity and flow depth were compared to the field-measured velocity and flow depth. Adjustments were then made to various model parameters until the modeled and measured velocity and depth closely matched each other. For this process, the primary varied parameters were pipeline roughness (Manning's n) and sediment buildup in the pipe, although other parameters can also be adjusted as calibration results are generated.
  - Manning's roughness coefficients, or n values, have industry accepted ranges based on a number of variables. Roughness coefficients increase over time depending on the construction methods, installation quality, system maintenance, and other environmental factors. There can be certain factors within the City's collection system that can result in roughness coefficients that differ from the typical range. For example, pipeline bellies, joint misalignment, cracks, and debris (e.g., root intrusion, etc.) lead to increased turbulence in a pipe, as wells as the apparent Manning's n factor.
  - If the model is unable to reasonably match the field measured flow depth and velocity without leaving the acceptable range of manning's roughness coefficients, further investigation is conducted to help determine the cause of the discrepancy. Some issues that could cause such a discrepancy can include errors in the slope or diameter of a pipeline, downstream blockages, pipeline sags, and, in some cases, influences from downstream lift station operations.

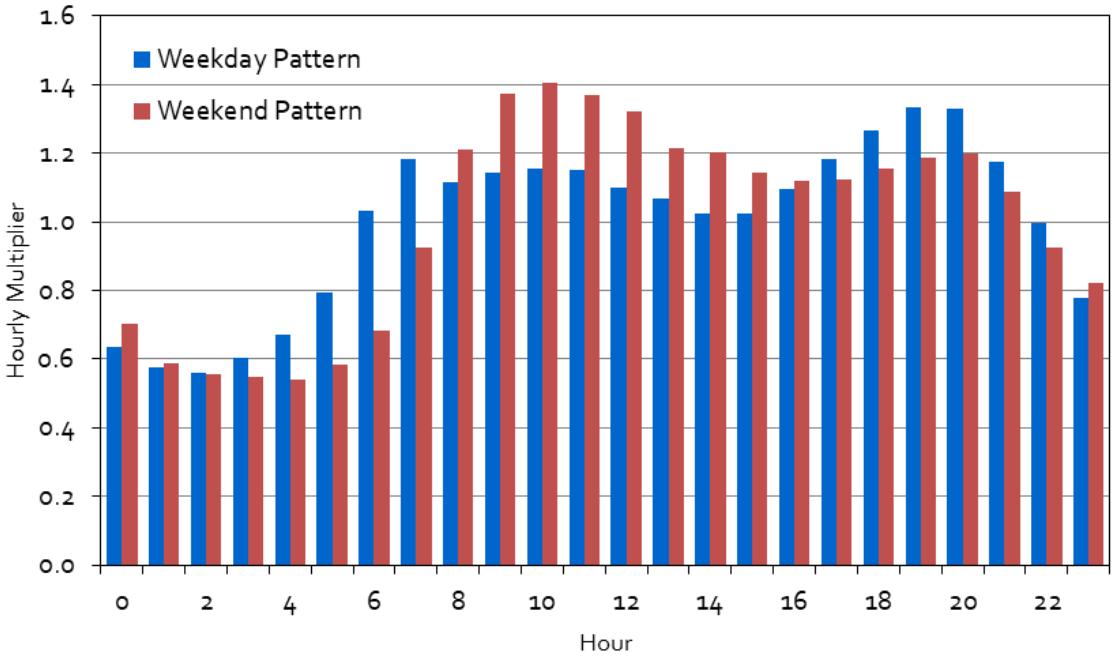


Figure 5.4 Example Weekday and Weekend ADWF Diurnal Patterns (TC-09)

Figure 5.5 is an example DWF calibration sheet for flowmeter site TC-09. Calibration sheets provide plots and tables that compare model results and the field measured flow, velocity, and level for during the calibration period. Appendix C contains detailed DWF calibration sheets for all meter locations. As shown on Figure 5.5 and Appendix C, there is good overall correlation of the field data to the model output results. The modeled flows, levels, and velocities at each site were within the generally accepted calibration tolerances, and therefore the model was considered calibrated.

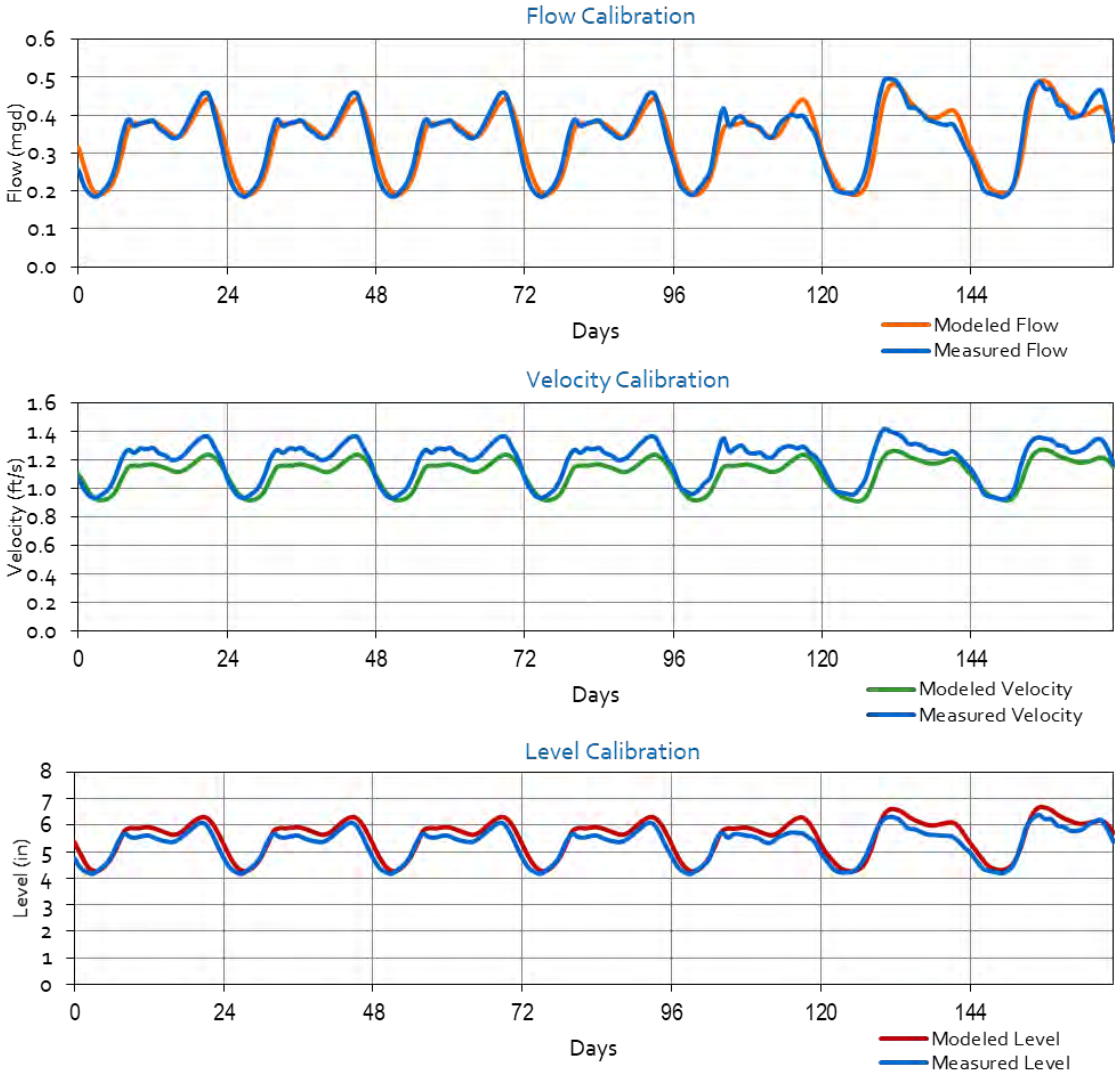


Figure 5.5 Example of Dry Weather Calibration (TC-09)

5.4.3 Wet Weather Flow Calibration

The WWF calibration enables the hydraulic model to accurately simulate I/I entering the collection system during a large storm. As outlined below, the WWF calibration consists of several elements:

- **Identify calibration rainfall events.** The WWF calibration process consists of running model simulations of historical rainfall events based on data collected as part of the

temporary flow monitoring program. The goal of any WWF monitoring program is to capture and characterize a system's response to a significant rainfall event, preferably during wet antecedent moisture conditions.

- **The selection of a particular calibration storm or group of storms is based on a review of the flow and rainfall data.** Only one significant rainfall event (total of 0.26 inch of rainfall) occurred during the flow monitoring program on March 3, 2018.
- **Define RDII tributary areas.** For the WWF calibration, RDII flows are superimposed on top of the DWF. The model calculates RDII by assigning "RDII Inflows" to each area node in the model. RDII inflows consist of both a unit hydrograph and the total area that is tributary to the model node. The RDII tributary areas were calculated in GIS using loading polygons, excluding any large vacant, open space, or other areas in the system which are not expected to contribute to I/I into the collection system. The tributary area provides a means to transform hourly rainfall depth from the rainfall hyetographs into a rainfall volume. The rainfall volume is transformed into actual RDII flows using the unit hydrograph, as described in the next step.
- **Create I/I parameter database and modify to match field measured flows.** The main step in the WWF calibration process involved creating a custom unit hydrograph for the study area using the "RTK Method", which is widely used in collection system master planning. Using the RTK Method, the RDII unit hydrograph is the summation of three separate triangular hydrographs (short term, medium term, and long term), which are each defined by three parameters: R, T, and K. R represents the fraction of rainfall over the sewer basin that enters the collection system; T represents the time to peak of the hydrograph; and K represents the ratio of time to recession to the time of peak. Therefore, there are a total of nine separate variables associated with a unit hydrograph. Figure 5.6 shows the shape of an example unit hydrograph.
  The hydrograph utilizes the R-values (percent of rainfall that enters the collection system) calculated for each basin to simulate I/I. The nine variables in each unit hydrograph were initially set based on engineering judgment and then adjusted until the model simulated flows (both peak flows and average flows) matched closely with the field measured flows.
  As with the dry weather calibration, the wet weather calibration process compared the measured flow data with the model output. Comparisons were made for average and peak flows as well as the temporal distribution of flow until flows returned to their baseline levels.
- **Refine model variables to match field measured velocity and flow depths.** After the model was considered to be satisfactorily calibrated for wet weather flows, the model simulated velocities and flow depths were checked against the field measured velocities and flow depths during the calibration storms. Refinements were made to the various model parameters so that the modeled and measured velocity and depth closely matched one another. If any adjustments were made to Manning's n-values or other parameters, the DWF calibration was rechecked as well to make sure that the flow depth and velocities still matched well under DWF conditions.

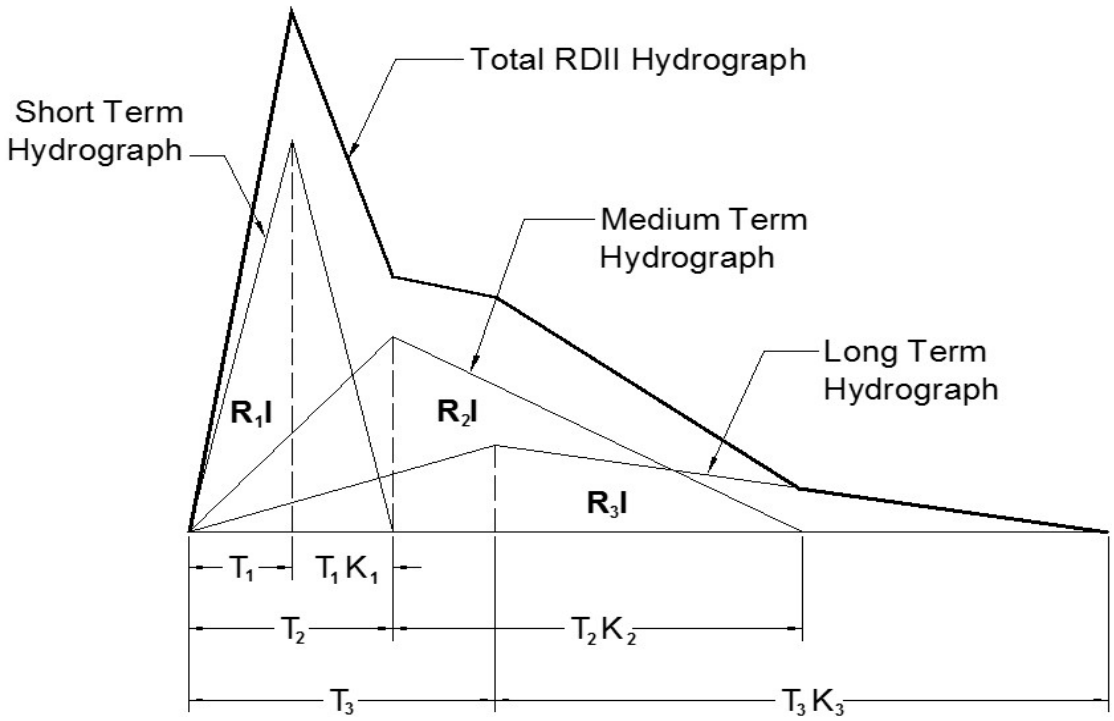


Figure 5.6 Example RDII Unit Hydrograph

Appendix D contains a detailed WWF calibration summary sheet for each of the flow monitoring sites. Each calibration sheet provides plots that compare the model simulated and field measured flow, velocity, and level data for the calibration storm. An example of the wet weather calibration for Site TC-08 is shown on Figure 5.7. As shown on Figure 5.7 and in Appendix D, there is good overall correlation of the field data to the model output results. The modeled average flows, and peak flows at each site were within the generally accepted calibration tolerances, and therefore the model was considered calibrated.

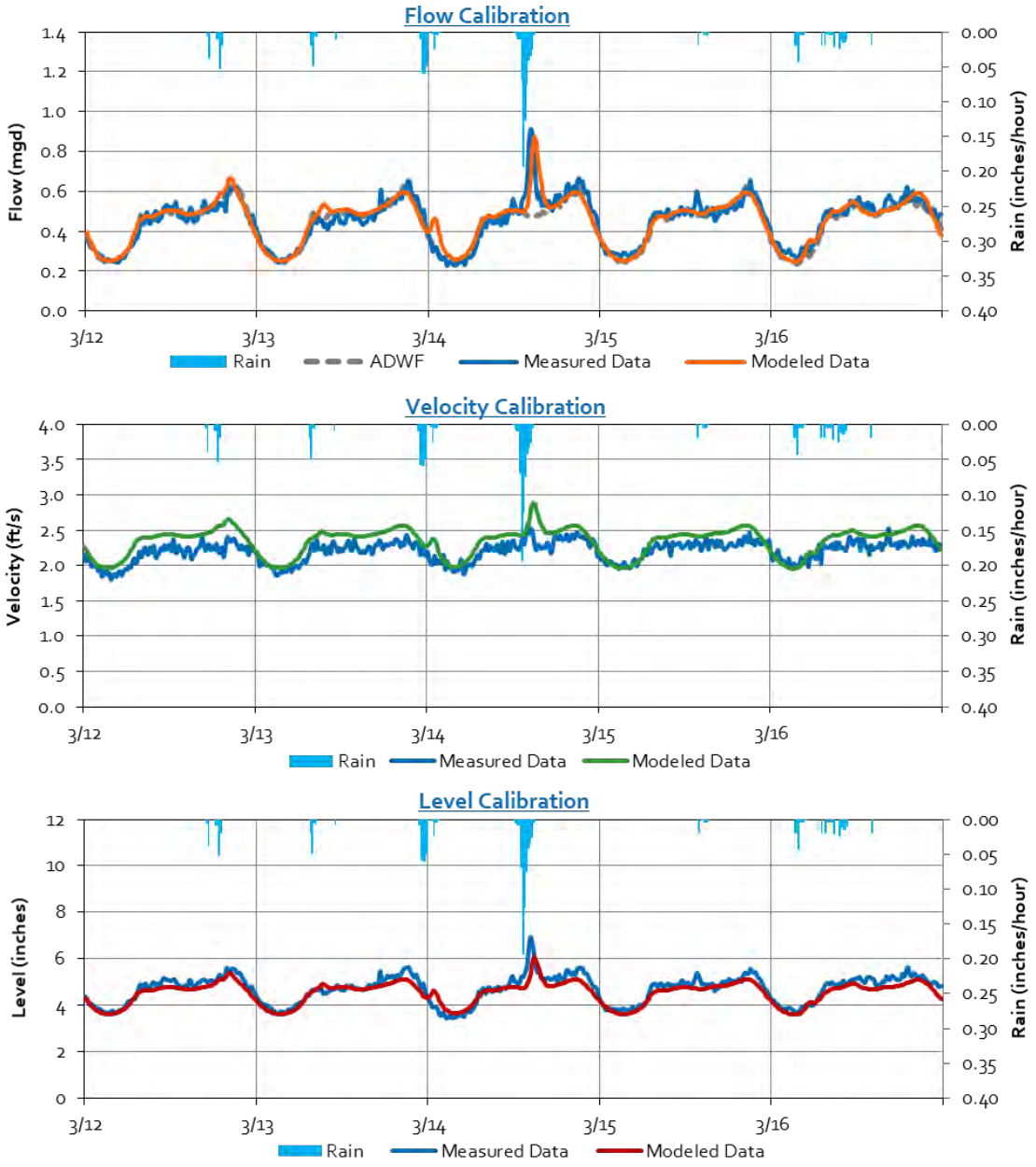


Figure 5.7 Example WWF Calibration Sheet (Site TC-08)

Chapter 6

SYSTEM EVALUATION AND PROPOSED IMPROVEMENTS

This chapter discusses the hydraulic evaluation of the City's wastewater collection system, and the proposed projects that correct capacity deficiencies and serve future users.

6.1 Wastewater Collection System Analysis

Following the DWF and WWF calibration, which is summarized in detail in Chapter 5, a capacity analysis of the existing and future collection system was performed. The capacity analysis entailed identifying area in the sewer system where flow restrictions occur or where pipe capacity is insufficient to convey either PHF or PWWFs. Sewers that lack sufficient capacity to convey PHFs and/or PWWFs create bottlenecks in the collection system that can potentially cause SSOs. The sewer system was evaluated based on planning criteria presented in Chapter 3.

This section discusses the locations of current and projected hydraulic deficiencies resulting from flows exceeding the maximum flow depth criteria.

6.1.1 Gravity System Evaluation

In accordance with the established flow depth criteria for existing sewers, pipelines with a maximum flow d/D ratio greater than 0.75 under PHF conditions and 0.90 under PWWF conditions were identified as capacity deficient. Under PHF conditions, no deficiencies were identified.

It is important to understand that not all of the existing pipelines with a d/D greater than 0.90 are necessarily capacity deficient. In some cases, a surcharged condition within a given pipeline segment is due to backwater effects created by a downstream bottleneck (i.e., upstream surcharging is caused by downstream pipeline deficiencies). An illustration of backwater effects is shown on Figure 6.1. For this reason, the hydraulic model was analyzed to identify the pipeline segments that are the cause of the surcharged conditions. These capacity deficient sewers are shown on Figure 6.2. Each pipeline that violated the evaluation criteria was looked at in closer detail to evaluate the severity of the deficiency. Improvement projects were not created for pipelines that only slightly violated the evaluation criteria. Therefore, minor criteria violations are not shown on Figure 6.2 as a deficiency.

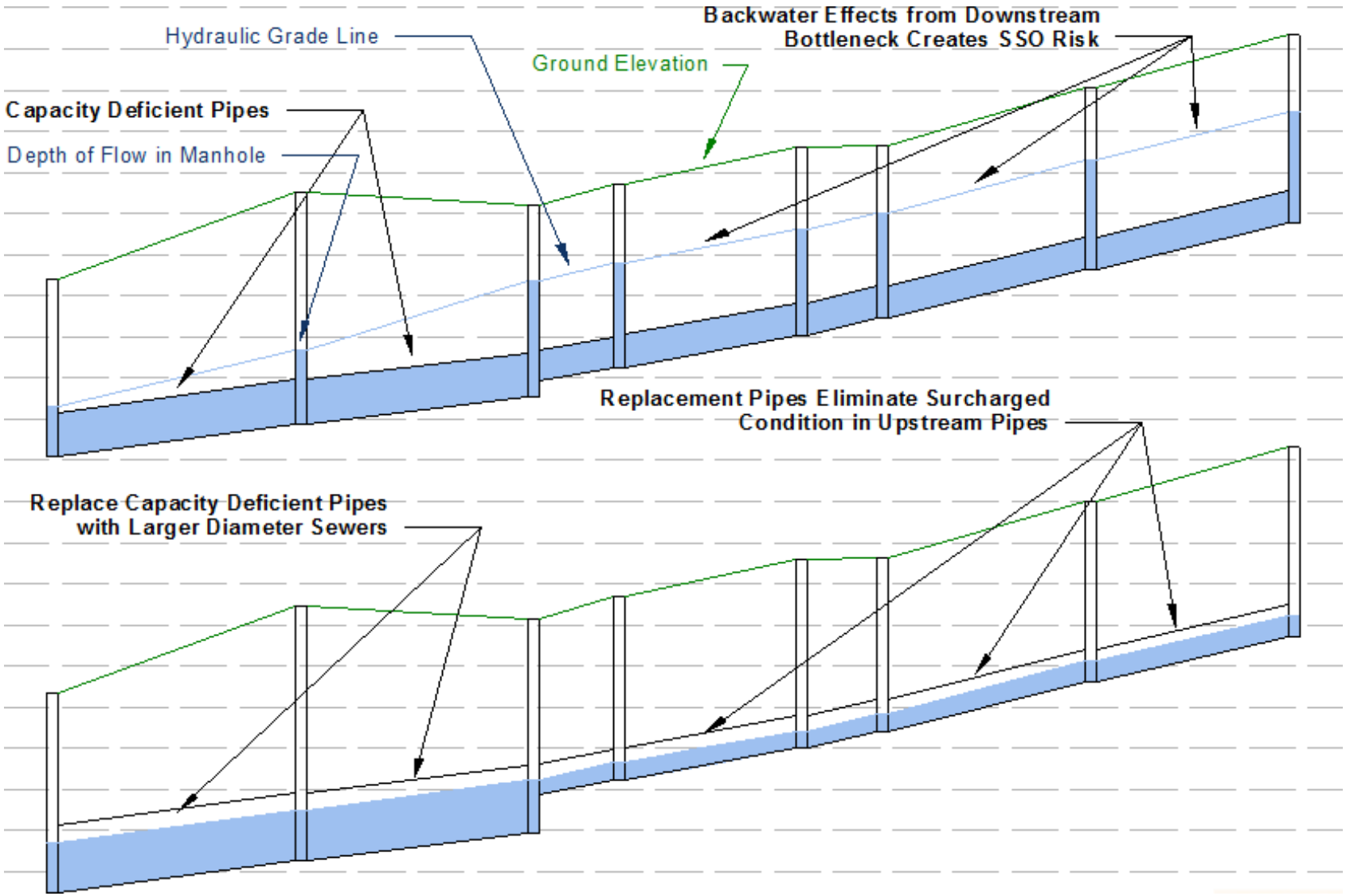
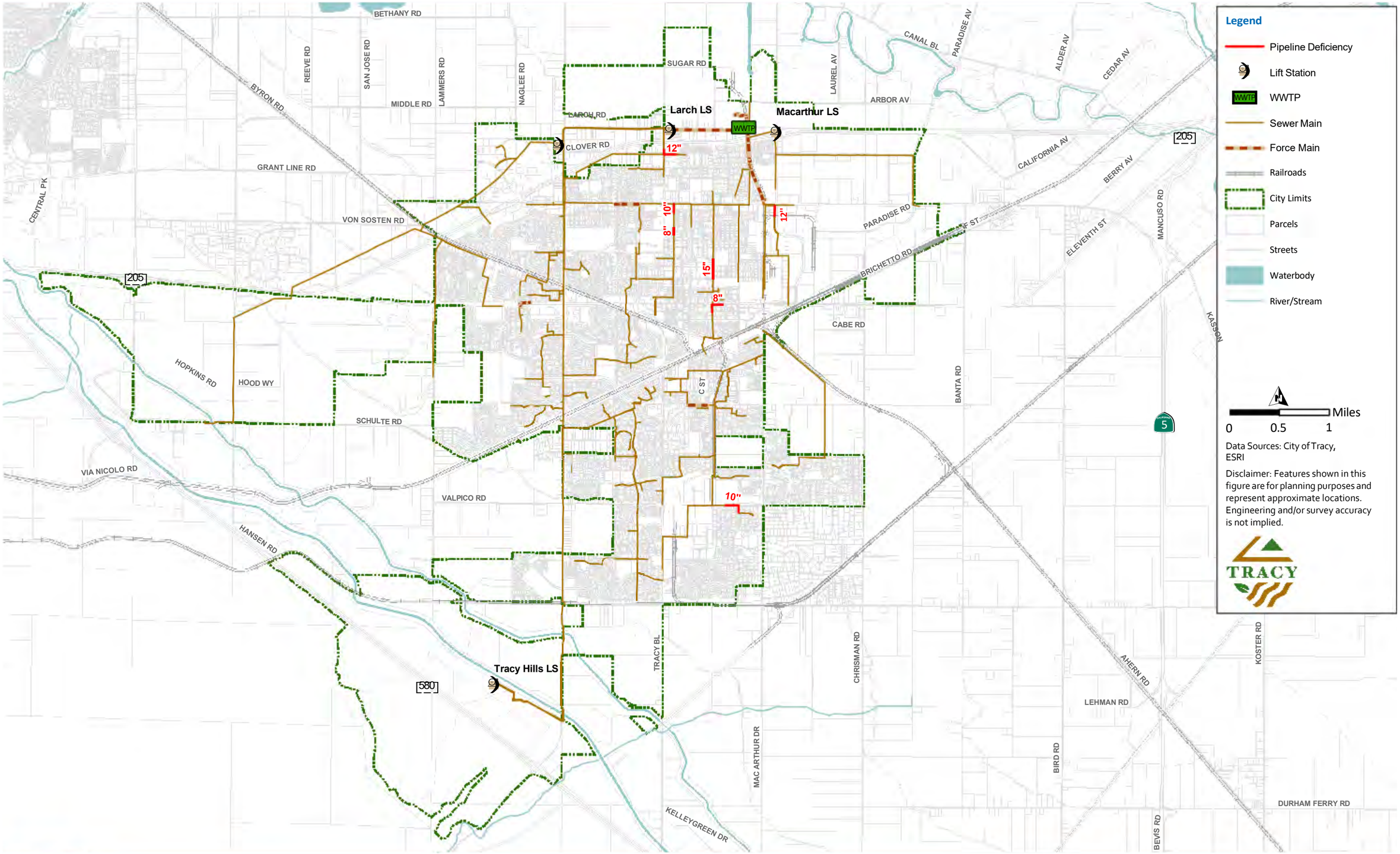


Figure 6.1 Sample Illustration of Backwater Effects in a Sewer



carollo

Last Revised: June 16, 2023 pw:\\IO-PW-INT.Carollo.local:Carollo\Documents\Client\CA\Tracy\11011A00\Data\GIS\ExistingCapacityDeficiencies.mxd

Figure 6.2 Existing Capacity Deficiencies

Following the completion of the existing system analysis, improvement projects and alternatives were identified to mitigate pipeline capacity deficiencies while maintaining a maximum d/D for new sewers (0.67 for pipes 12-inch and smaller, 0.75 for pipes 15-inch and larger). These sewers will need to be replaced by larger-diameter sewers or constructed in parallel to bypass flow around hydraulically deficient sewers. The decision on whether to upsize or parallel a particular sewer should be confirmed during the preliminary design of each proposed project and is based on a number of factors, including the condition of the existing pipeline, pipeline velocities during dry-weather flow conditions, pipeline slopes, and other relevant factors.

The goal of the future system analysis is to evaluate the collection system under projected future peak flow and to ensure existing improvements are sized to convey Buildout flows and identify future deficiencies. As part of the future system analysis, the planning years 2040 and Buildout were evaluated. The term future is a general reference to planning years 2040 and Buildout.

The future system analysis of the gravity system was performed in a manner similar to the existing system evaluation. Figure 6.3 shows the locations of deficiencies under future flow conditions for the planning horizon of the Master Plan. Preliminary projects for expansion to serve future growth is also summarized, with conceptual locations for new trunks and lift stations.

6.1.1.1 Corral Hollow Road Capacity Evaluation

The pipeline along Corral Hollow Road conveys flow from the southern portion of the City to the Larch lift station. The sewer line along Corral Hollow Road has capacity to handle approximately 3,300 additional equivalent dwelling units (EDUs). This capacity is based on the existing system, and therefore planned developments that were not contributing flow in 2018 were not included in evaluation. To calculate the number of EDUs that the Corral Hollow Sewer System could handle before it reached capacity, Carollo used the hydraulic model to determine the maximum flow that the Corral Hollow Sewer System could handle. The maximum flow in gallons per day was divided by a peaking factor of 2.5 to calculate an average flow. That average flow was then divided by a flow factor of 230 gallons per day per dwelling unit. The final product is the number of EDUs the system can handle before a deficiency occurs.

This pipeline in Corral Hollow Road is a major transmission main within the system and conveys a large portion of flows to the Larch lift station and eventually to the WWTP. The City needs to be aware of how much more capacity this line has when approving developments that will generate flow that is tributary to the sewer. It is recommended that the City track the number of approved EDUs tributary to the Corral Hollow sewer over the course of time. Tracking the number of EDUs will allow for the timely planning and construction of improvements required to convey the total amount of development tributary to this sewer in the south portions of the City. An improvement project (Lammer's Project) was developed to provide additional capacity for growth in the southern area of the City once the 3,300 EDUs of remaining capacity have been exhausted (see section 6.2.5).

The City has started the process of collecting fees for a Phase 2 parallel sewer pipeline in Corral Hollow Road which runs from Parkside Drive to Fieldview Drive. This Phase 2 pipeline will increase the capacity in Corral Hollow Sewer System to handle an additional 1,400 EDUs. Therefore, the total available capacity in the Corral Hollow Sewer System following the implementation of Phase 2 is 4,700 EDUs. The number of EDUs for Phase 2 were calculated similarly to how the existing capacity was.

6.1.1.2 Maintenance Issues

City staff confirmed that there are constant maintenance issues with buildup of grease and trash in the Hansen Road sewer. This issue should be resolved before any new developments come online in this area.

6.1.2 Lift Station and Force Main Evaluation

The City's hydraulic model includes each of the three operational lift stations. The lift stations were evaluated to determine if they have capacity to convey peak flow. Lift stations with an influent peak flow above the existing firm capacity were flagged as deficient. Table 6.1 summarizes the results of the City's lift station evaluation. As shown in Table 6.1, Larch lift station has been identified as capacity deficient under 2040 and buildout peak flow conditions and the Hansen lift station has been identified as capacity deficient under buildout conditions. MacArthur lift station has capacity through buildout.

Table 6.1 Lift Station Capacity Evaluation

Lift Station	Existing Firm Capacity	Existing PWWF (mgd)	Existing Surplus/ (Deficit) (mgd)	2040 PWWF (mgd)	2040 Surplus/ (Deficit) (mgd)	Buildout PWWF (mgd)	Buildout Surplus/ (Deficit) (mgd)
Hansen	9.01	2.88	6.13	7.43	1.58	10.79	(1.41)
Larch	12.96	11.74	1.22	16.34	(3.38)	19.75	(6.79)
MacArthur	5.33	0.67	4.66	1.21	4.12	1.78	3.55

Additionally, the force mains associated with each lift station was evaluated to determine if they have capacity to convey peak flow. Force mains with a velocity of greater than 8 ft/s were identified as deficient. Table 6.2 summarizes the results of the City's force main evaluation. As shown in Table 6.2, both the 12-inch diameter and 14-inch diameter force mains are capacity deficient under buildout peak flow conditions.

Table 6.2 Force Main Capacity Evaluation

Force Main	Force Main Diameter (inches)	Existing PWWF Velocity (ft/s)	2040 PWWF Velocity (ft/s)	Buildout PWWF Velocity (ft/s)
Hansen	12	0.67	6.03	8.47
	14	1.00	6.70	9.40
Larch	18	2.88	4.07	5.70
	24	4.20	4.28	5.38
MacArthur	16	1.00	1.97	2.54

6.2 Recommended Improvements

This section summarizes the improvements recommended for the wastewater collection system. Figure 6.4, Figure 6.5, and Figure 6.6 illustrates the recommended improvements to mitigate capacity deficiencies and to serve future growth. Detailed improvement sheets for the recommended improvements can be found in Appendix E.

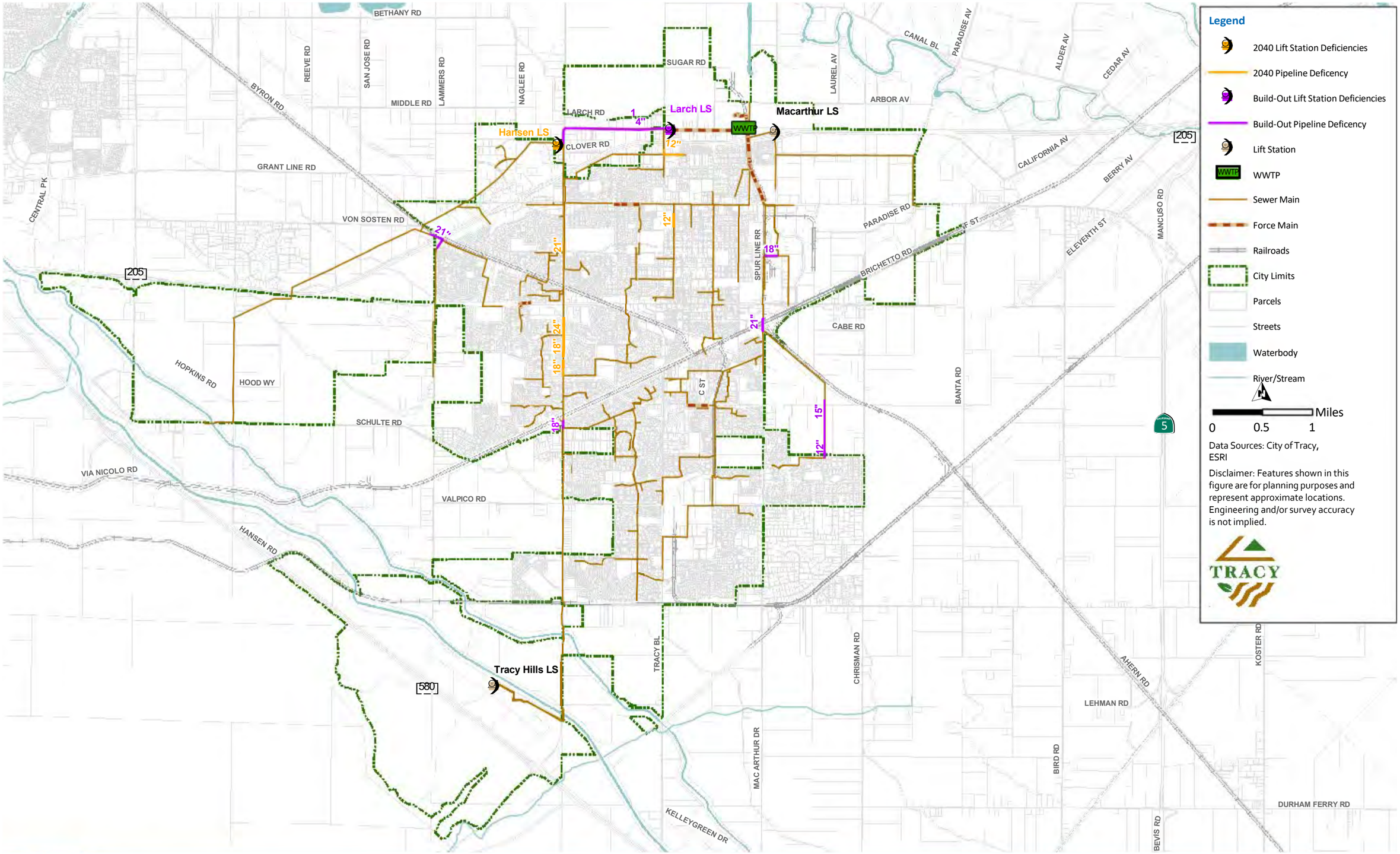


Figure 6.3 Future Capacity Deficiencies

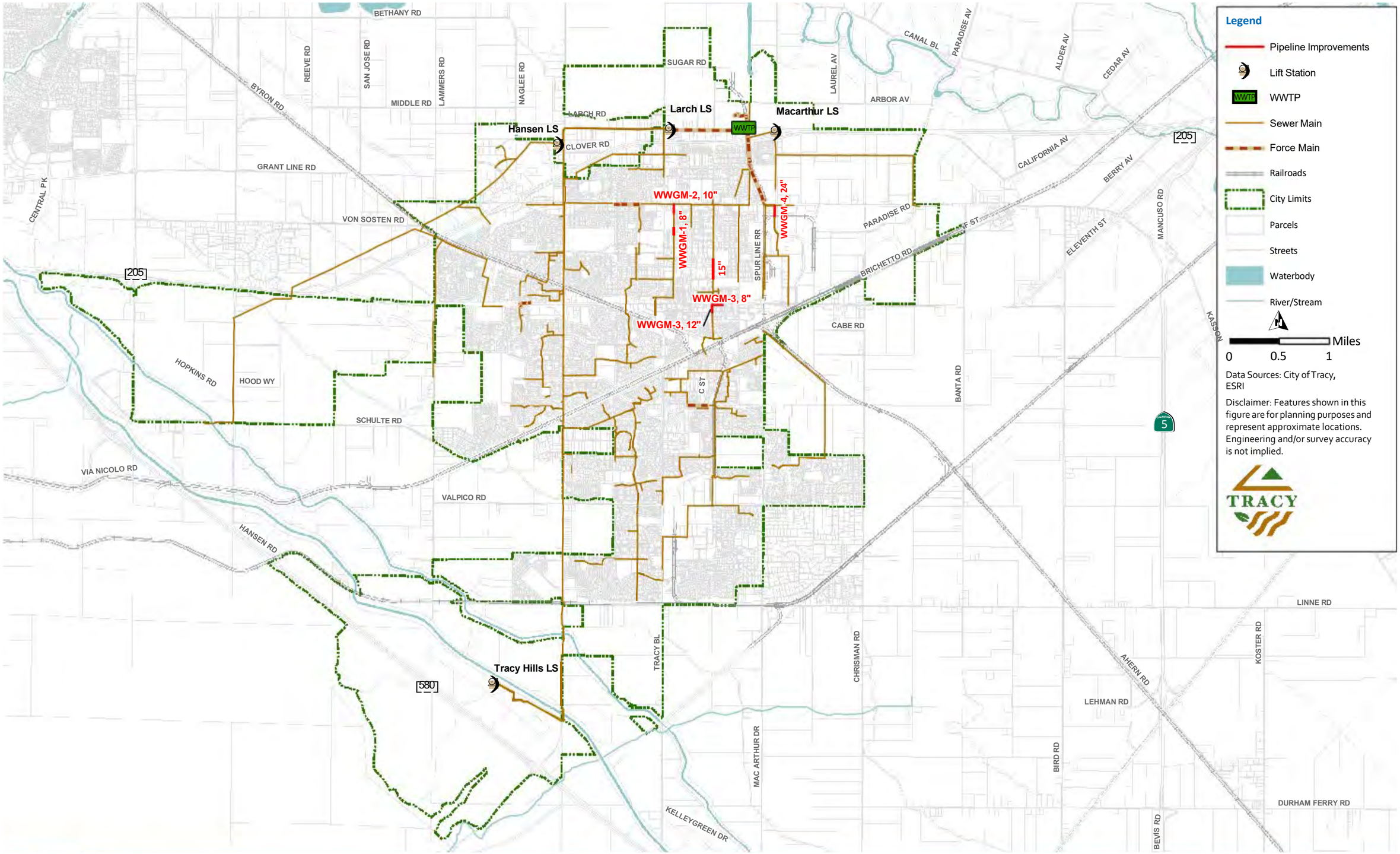


Figure 6.4 Existing System Improvements

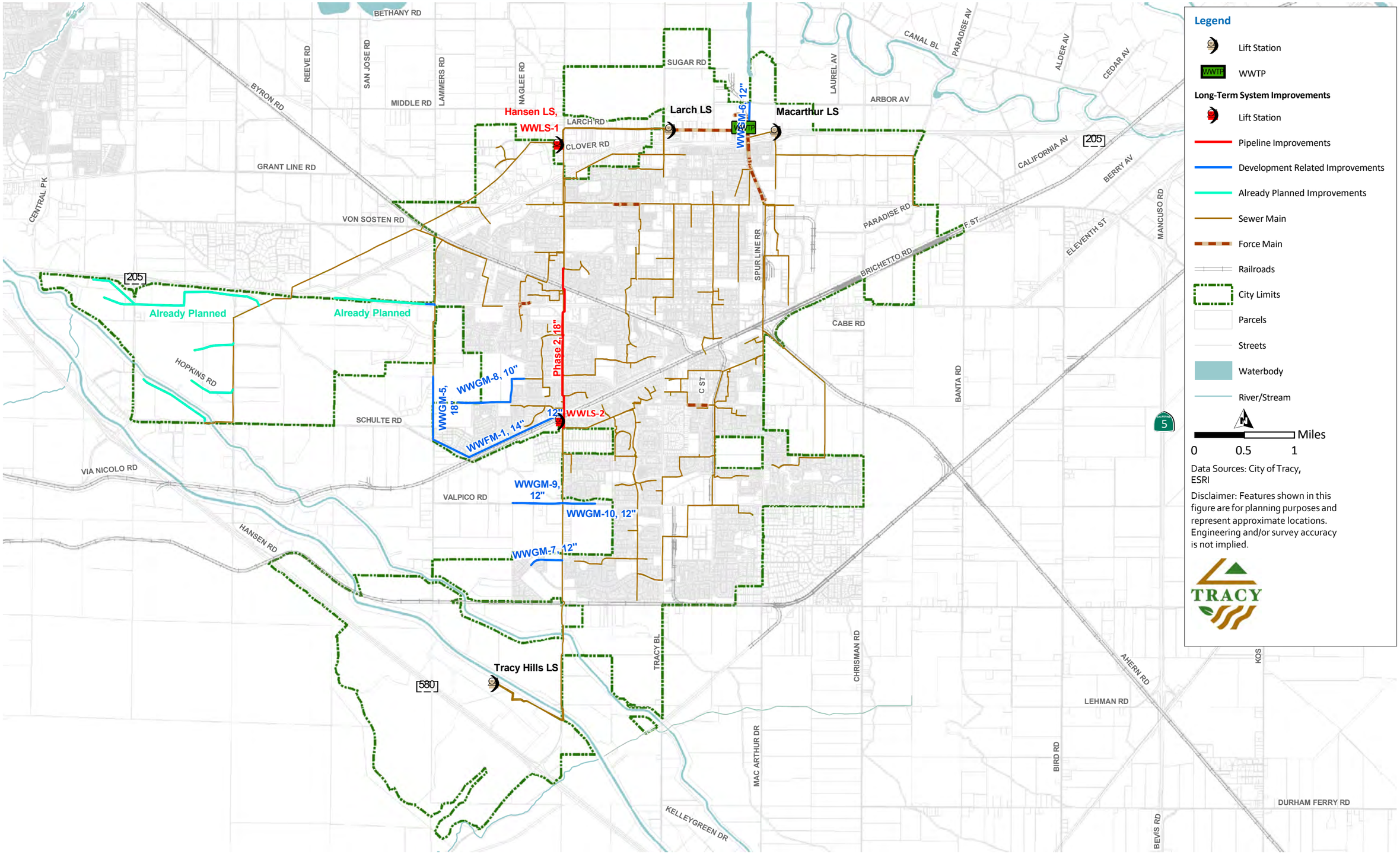
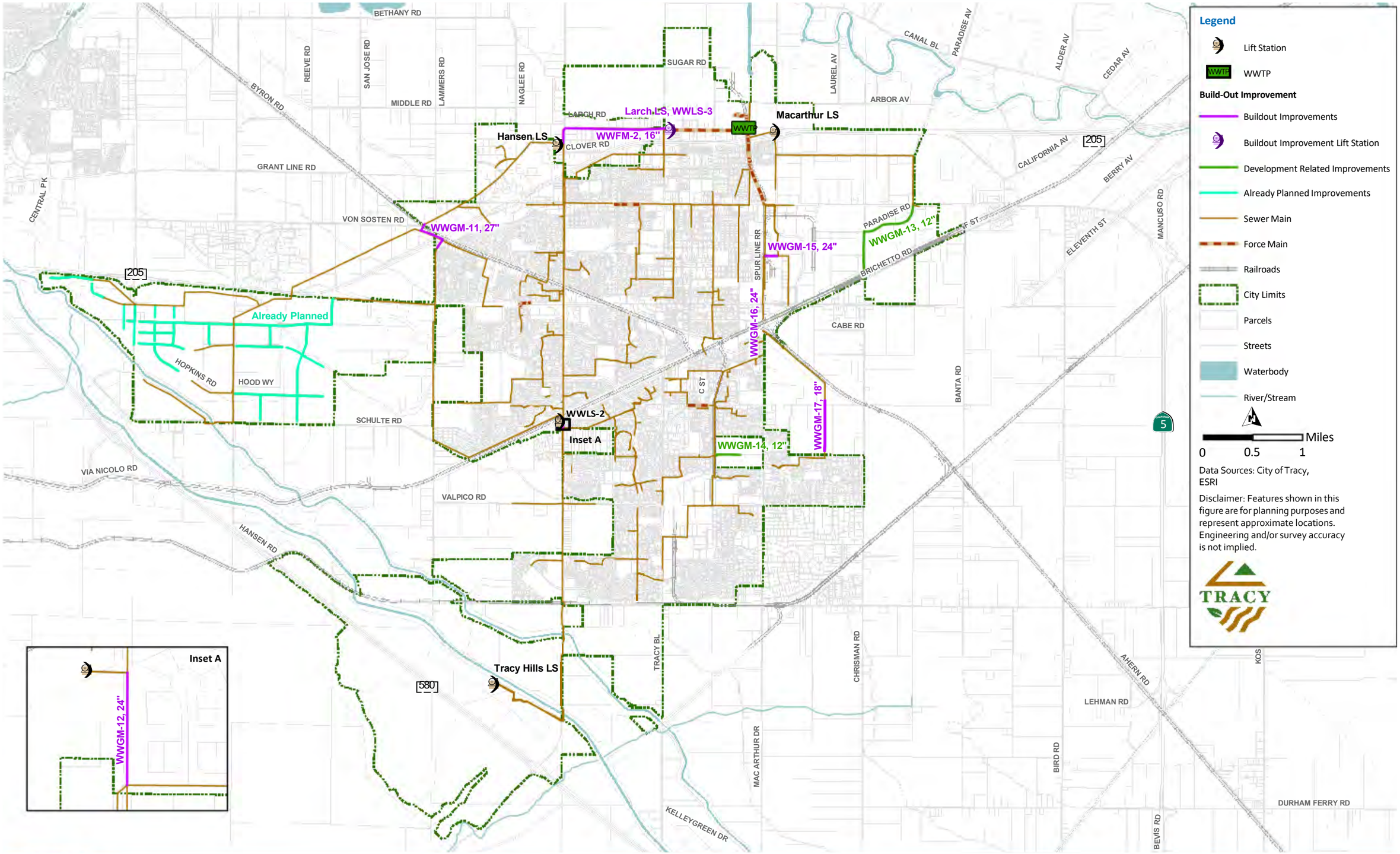


Figure 6.5 2040 System Improvements



Legend

- Lift Station
- WWTP
- **Build-Out Improvement**
- Buildout Improvements
- Buildout Improvement Lift Station
- Development Related Improvements
- Already Planned Improvements
- Sewer Main
- Force Main
- Railroads
- City Limits
- Parcels
- Streets
- Waterbody
- River/Stream

Miles
0 0.5 1

Data Sources: City of Tracy, ESRI

Disclaimer: Features shown in this figure are for planning purposes and represent approximate locations. Engineering and/or survey accuracy is not implied.

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Figure 6.6 Buildout System Improvements

6.2.1 Existing Gravity Main Improvements

The following gravity main improvements are recommended to address deficiencies identified under existing conditions:

- **Gravity Main along Bessie Avenue (WWGM-1):** This project includes the replacement of approximately 440 feet of 8-inch diameter gravity main along Bessie Avenue, between Whittier Avenue and 20th Street. To mitigate capacity deficiencies under existing PWWF conditions, it is recommended that the existing 8-inch diameter gravity main be replaced with a 12-inch diameter gravity main.
- **Gravity Main along Bessie Avenue (WWGM-2):** This project includes the replacement of approximately 510 feet of 10-inch diameter gravity main along Bessie Avenue, between 23rd Street and West Grant Line Road. To mitigate capacity deficiencies under existing PWWF conditions, it is recommended that the existing 10-inch diameter gravity main be replaced with a 12-inch diameter gravity main.
- **Gravity Main along North Central Avenue (WWGM-3):** This project includes the replacement of approximately 450 feet of 8-inch and 12-inch diameter gravity main along North Central Avenue, 10th Street and 11th Street. To mitigate capacity deficiencies under existing PWWF conditions, it is recommended that the existing 8-inch and 12-inch diameter gravity mains be replaced with a 15-inch diameter gravity main.

6.2.2 Future Gravity Main Improvements

The following gravity main improvements are recommended to address deficiencies identified under future conditions:

- **Gravity Main along MacArthur Drive (WWGM-4):** This project includes the replacement of approximately 600 feet of 12-inch diameter gravity main along MacArthur Drive, south of East Grant Line Road. To mitigate capacity deficiencies under 2040 PWWF conditions, it is recommended that the existing 12-inch diameter gravity main be replaced with a 21-inch diameter gravity main.
- **Gravity Main along Lammers Road and Byron Road (WWGM-11):** This project includes the replacement of approximately 2,710 feet of 21-inch diameter gravity main along Lammers Road, south of Byron Road, and along Byron Road, west of Lammers Road. To mitigate capacity deficiencies under buildout PWWF conditions, it is recommended that the existing 21-inch diameter gravity main be replaced with a 27-inch diameter gravity main.
- **Gravity Main along Corral Hollow Road (WWGM-12):** This project includes the replacement of approximately 380 feet of 18-inch gravity main along Corral Hollow Road, between Parkside Drive and project WWLS-2.To mitigate capacity deficiencies under buildout PWWF conditions, it is recommended that the existing 18-inch diameter gravity main be replaced with a 24-inch diameter gravity main.
- **Corral Hollow Phase 2 Pipeline (Phase 2):** This project includes the addition of a parallel gravity main along Corral Hallow Road between Parkside Drive and Fieldview Drive. This project will compromise of approximately 8,450 feet of 18-inch diameter gravity main.
- **Gravity Main to Serve Acacia Street and Franklin Avenue (WWGM -15):** This project includes the replacement of approximately 750 feet of 18-inch gravity main east of the

intersection of Acacia Street and Franklin Avenue. To mitigate capacity deficiencies under buildout PWWF conditions, it is recommended that the existing 18-inch diameter gravity main be replaced with a 21-inch diameter gravity main.

- **Gravity Main Along Macarthur Drive (WWGM -16):** This project includes the replacement of approximately 1500 feet of 21-inch gravity main Along Macarthur Drive between UP Railroad and Eleventh Street. To mitigate capacity deficiencies under buildout PWWF conditions, it is recommended that the existing 21-inch diameter gravity main be replaced with a 24-inch diameter gravity main.
- **Gravity Main to Serve Chrisman Road (WWGM -17):** This project includes the replacement of approximately 2700 feet of 12 and 15-inch gravity main West of Chrisman Road between Tulloch Drive and Schulte Road. To mitigate capacity deficiencies under buildout PWWF conditions, it is recommended that the existing 12 and 15-inch diameter gravity main be replaced with an 18-inch diameter gravity main.

6.2.3 Existing Lift Station and Force Main Improvements

There are no existing lift station or force main improvements. The existing system lift stations and force mains have capacity to convey existing PWWF.

6.2.4 Future Lift Station and Force Main Improvements

The following lift station and force main improvements are recommended to address future deficiencies.

- **Hansen Lift Station Upgrade (Project WWLS-1):** This project includes the expansion of Hansen Lift Station. The firm capacity is not adequate to convey the buildout PWWF. It is recommended that the lift station capacity be upgraded from 9.01 mgd to 10.4 mgd to accommodate future flows.
- **Larch Lift Station Upgrade (Project WWLS-3):** This project includes the expansion of Larch Lift Station. The firm capacity is not adequate to convey the 2040 and buildout PWWF. It is recommended that the lift station capacity be upgraded from 12.96 mgd to 17.5 mgd to accommodate future buildout flows.
- **Hansen Force Main Upgrade (Project WWFM-2):** This project includes the replacement of approximately 6,240 feet of 12-inch diameter force main. To mitigate capacity deficiencies under buildout PWWF conditions, it is recommended the pipeline be replaced with a 16-inch diameter force main to accommodate future flows.

6.2.5 Collection System Expansion to Serve Future Growth

The following recommendations are preliminary sewer trunk alignments and lift stations that will serve future growth. The location of the new trunks and lift stations are conceptual and should be refined as more data becomes available.

- **Lammers Projects (WWLS-2, WWFM-1, and WWGM-5):** These projects will service future growth in the southern area of the City. Improvements will consist of a lift station, force main, and gravity pipelines. The project will connect into the existing system on Corral Hollow Road. This project will alleviate deficiencies on Corral Hollow Road by directing flows to Lammers Road. This project is separated into the following segments:
  - WWLS-2 is a lift station that would be required to route flow from Corral Hollow Road to Lammers Road to alleviate the deficiencies along Corral Hollow Road.

  - WWFM-1 consists of approximately 7,790 feet of 14-inch diameter force main located along West Schulte Road from Corral Hollow Road and Lammers Road.
  - WWGM-5 consists of approximately 3,310 feet of 18-inch diameter sewer main located along Lammers Road.
- **Gravity Main to Serve Holly Sugar Industrial (WWGM-6):** This project includes the addition of approximately 1,520 feet of 12-inch diameter gravity main west of MacArthur drive and south of Arbor Avenue. To anticipate development in this area (Holly Sugar Industrial) by 2040, it is recommended that these 12-inch diameter pipelines be added.
- **Gravity Main to Serve Ellis (WWGM-7):** This project includes the addition of approximately 1,760 feet of 12-inch diameter gravity main along Ellis Town Drive, between Corral Hollow Road and Middlefield Drive. To anticipate development in this area (Ellis) by 2040, it is recommended that these 12-inch diameter pipelines be added.
- **Gravity Main to Serve Rocking Horse and UR7 Bright/Castro (WWGM-8):** This project includes the addition of approximately 4,700 feet of 12-inch diameter gravity main along Schulte Road and Mabel Josephine Drive. To anticipate development in this area (Rocking Horse and UR7 Bright/Castro) by 2040, it is recommended that these 12-inch diameter pipelines be added.
- **Gravity Main to Serve Avenues and SWC Valpico and Corral Hollow (WWGM-9):** This project includes the addition of approximately 2,650 feet of 12-inch diameter gravity main along Valpico Road, west of Corral Hollow Road. To anticipate development in this area (Avenues and SWC Valpico and Corral Hollow) by 2040, it is recommended that these 12-inch diameter pipelines be added.
- **Gravity Main to Serve Tracy Village (WWGM-10):** This project includes the addition of approximately 1,720 feet of 12-inch diameter gravity main along Valpico Road, east of Corral Hollow Road. To anticipate development in this area (Tracy Village) by 2040, it is recommended that these 12-inch diameter pipelines be added.
- **Gravity Main to Serve Chrisman (WWGM-13):** This project includes the addition of approximately 5,750 feet of 12-inch diameter gravity main along Paradise Road, south of West Grant Line and along Chrisman Road, south of Paradise Road. To anticipate development in this area (Chrisman Road) by 2040, it is recommended that these 12-inch diameter pipelines be added.
- **Gravity Main to Serve Rocha (WWGM-14):** This project includes the addition of approximately 1,420 feet of 12-inch diameter gravity main east of Spur Line Railroad and south of Yosemite Drive. To anticipate development in this area (Rocha) by 2040, it is recommended that these 12-inch diameter pipelines be added.

Chapter 7

WASTEWATER TREATMENT PLANT EVALUATION AND PROPOSED GRADES

This chapter discusses the current treatment processes at the City WWTP, as well as applying the projected flows as summarized in Chapter 4 to assess the capacity of the WWTP by process.

7.1 Existing Wastewater Treatment Plant Process Overview

The WWTP currently treats approximately 7.35 mgd of average dry weather influent flows. The influent is comprised of both municipal and industrial waste streams, with the primary industrial contributor being Leprino Foods. The treatment facility operates municipal, industrial, and solids treatment processes.

7.1.1 Liquid Treatment Stream

The liquid treatment process begins with the industrial pretreatment ponds, which then flow into the remainder of the treatment facility along with the raw influent municipal wastewater.

7.1.1.1 Headworks

The headworks of the facility consists of several processes beginning with influent receiving and splitting. There is a specified manhole at the facility for commercial as well as recreational sewage to be unloaded, where it joins with the influent stream from the sanitary sewer system. The combined influent flow is then split into up to two channels before entering two 36-inch pipes containing magnetic flow meters for measuring the influent flow. Following flow measurement, the influent is directed into a 3-foot-wide channel equipped with a mechanically cleaned screen. The screenings are directed to a washer/compactor to prepare the screenings for removal from the facility. Finally, the influent stream is measured for temperature, and sampled using an automatic composite sampler downstream of the influent screens before moving to the primary clarifiers.

7.1.1.2 Primary Treatment

Primary treatment begins with clarification to settle out particulate matter that passed through the influent screens. The facility currently operates two rectangular primary clarifiers and one circular primary clarifier. Straight edged weirs are used to split the flow equally to the two clarifiers that run-in tandem at any given time, with the third clarifier serving as redundancy. Downstream of the primary clarifiers is a flow equalization basin that also serves as emergency storage. The equalization basin is used to provide flexibility in higher flow scenarios for secondary treatment basin loading and tertiary treatment contact time.

7.1.1.3 Secondary Treatment

Secondary treatment at the Tracy WWTP primarily consists of a biological treatment process split into two identical treatment trains. Each treatment train begins with an anoxic selector split into two compartments. The anoxic selectors are followed by two aerobic zones equipped with

dissolved oxygen (DO) control. Following the biological treatment trains the flow is split and a portion of the flow is returned to the anoxic selectors to keep the anoxic environment sustained. Flow is then equally distributed between 3 secondary clarifiers to settle out the microorganisms and return a portion of them to the aeration basins. Following the secondary clarifiers, the flow enters the secondary effluent pump station where it is pumped to the tertiary filtration system.

7.1.1.4 Tertiary Treatment

The tertiary treatment system begins with the addition of an alum/polymer solution to stimulate coagulation before filtration to meet regulatory and filter operational requirements. The tertiary filtration system consists of two deep bed filtration trains of four filter cells per train. Each filter utilizes anthracite mono-media and is scoured with air and water for backwashing. These filters ensure that the effluent is treatment to meet the National Pollutant Discharge Elimination System (NPDES) limitations as well as recycled water requirements.

Following the tertiary filters flow enters the disinfection channels following the addition of chloramines. The chlorine contact channel provides adequate time for disinfection regulations and is followed by addition of sulfur dioxide to dechlorinate to residual chlorine requirements before entering the reaeration zone. The effluent flow is reaerated using fine bubble membrane disc diffusers. The final step in the treatment process is metering the effluent flow using a Parshall flume before the effluent enters the final pumping station.

7.1.2 Solids Treatment

Solids treatment at the City WWTP will not be described in detail due the focus on liquid treatment capacities in this chapter. The treatment of solids begins with the portion of settled microorganisms (sludge) from the secondary clarifiers. A portion of the sludge is returned, return activated sludge (RAS), to the aeration basins to stimulate population growth and treatment efficiency. The portion of the sludge that is not returned to the aerations basins is called waste activated sludge (WAS) and is sent to the solids treatment system alongside the settled matter from primary clarification (primary solids).

The WAS enters a dissolved air floatation thickening (DAFT) bed to thicken the sludge for anaerobic digestion. The thickened WAS then enters the anaerobic digesters along with the primary solids where the material is further broken down in a series of biological and environmental processes. The digested sludge is then dried to form sludge cakes on drying beds before it is removed from the facility to either be land applied or placed in a landfill.

7.2 Historical Flows and Loads

The historical flows and loads discussed in this chapter primarily come from the City WWTP Facility Plan prepared by CH2M in 2019.

7.2.1 Historical Flows

Figure 7.1 shows the influent flow data for the years 2013-2017, as indicated in the 2019 Facility Plan.

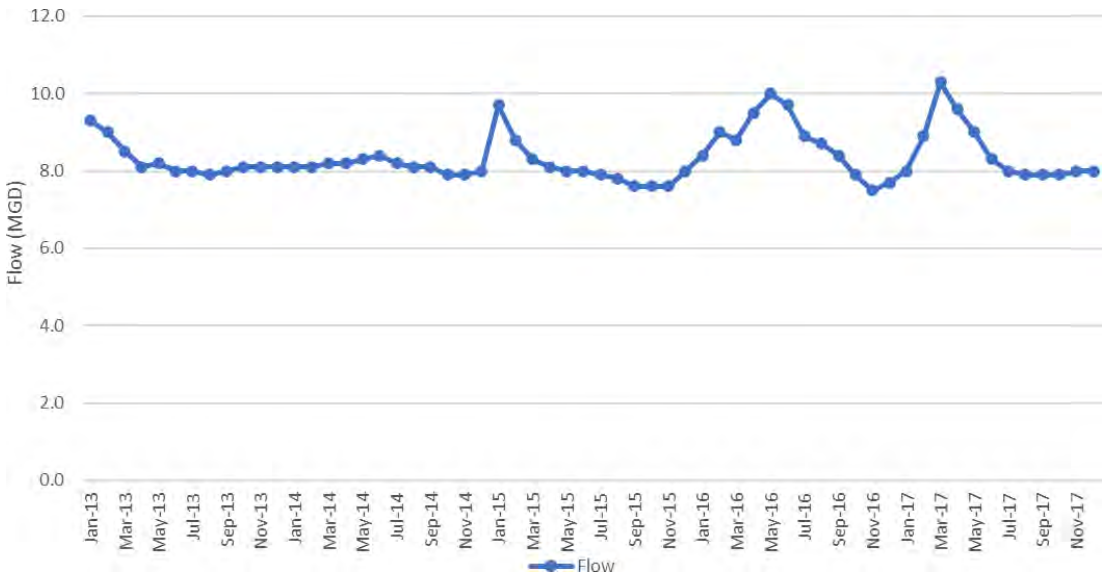


Figure 7.1 Historical Influent Flow to the City WWTP

7.2.2 Historical Loads

Figure 7.2 shows the historical influents loads for biochemical oxygen demand (BOD), total suspended solids (TSS), and ammonia (NH_3) in a pounds per day (ppd) basis for the years of 2013-2017 as indicated in the 2019 Facility Plan. It is important to note that the headworks of the facility performed periodic grease flushing over the course of 2016 and 2017 which resulted in the exclusion of some BOD and TSS data for those years.

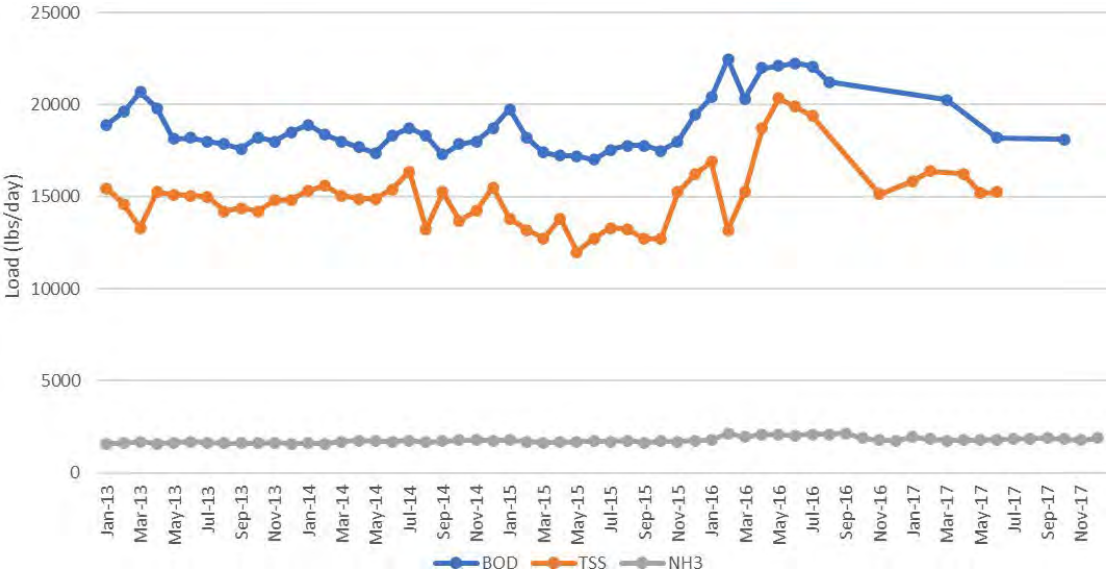


Figure 7.2 Historical BOD, TSS, and NH_3 Loading to the City WWTP

7.3 Projected Flows and Loads

7.3.1 Projected Flows

The projected flows for the City WWTP were developed by Carollo in 2020, and can be found more in-depth in Chapter 4. Table 7.1 summarizes the projected flow conditions as they relate to the WWTP capacity.

Table 7.1 Projected Flows for the City WWTP

Flow Condition	Existing (mgd)	2040 (mgd)	Buildout (mgd)
ADWF	7.35	12.84	15.65
PWWF	16.95	25.35	30.14

7.3.2 Projected Loads

Projected loads for the City WWTP were developed based on the loading cited in the 2019 Facility Plan and standardized to the population at that time to create a pounds per person per day basis and not a weight/flow basis. This ppd rate for each contaminant (BOD, TSS, and NH_3) was then used alongside projected populations (see Table 7.2) to estimate the loading currently, in the year 2040, and at buildout conditions.

Table 7.2 Projected Populations for the City

	Existing	2040	Buildout
Population	95,931	170,152	185,961

Table 7.3 Unit Loading Rates from 2019 Facility Plan

Loading Rate (pounds per person per day)	Average
BOD	0.211
TSS	0.175
NH_3	0.020
Population increase (percent)	0.0205

The 2022 and 2040 populations were estimated using a yearly growth rate of 0.02 (averaged from 2015-2020 population growth rate) and assuming exponential population growth. The buildout population was estimated by dividing the last known population (2020 census) by the percent of land used, where 100 percent usage represents buildout. This assumed that under buildout conditions the land use percentages will be similar. Table 7.4 shows the resulting projected loads based on the associated estimated populations.

Table 7.4 Contaminant Loading Projections for the City

Contaminant	Loading			
	Units	Existing	2040	Buildout
BOD	ppd	20,278	35,966	39,308
TSS	ppd	16,773	29,750	32,515
NH_3	ppd	1,921	3,407	3,724

7.4 Wastewater Treatment Plant Capacity Analysis

The projected flows and loads were then used to assess the capacity of the WWTP using process capacities that were both calculated based on as well as pulled from the 2019 Facility Plan. In particular, the treatment facility is concerned about the capacity of the outfall pipe as well as the secondary treatment process and already have plans to upgrade those processes to increase capacity.

7.4.1 Outfall Capacity

As mentioned above, the WWTP is upgrading the outfall pipeline with an expected completion date of summer 2020. This upgrade will increase the capacity of the outfall pipe from 9 mgd to 16 mgd. Figure 7.3 summarizes the predicted flows in relation to the capacity of the outfall pipeline by the time each flow prediction is reached.

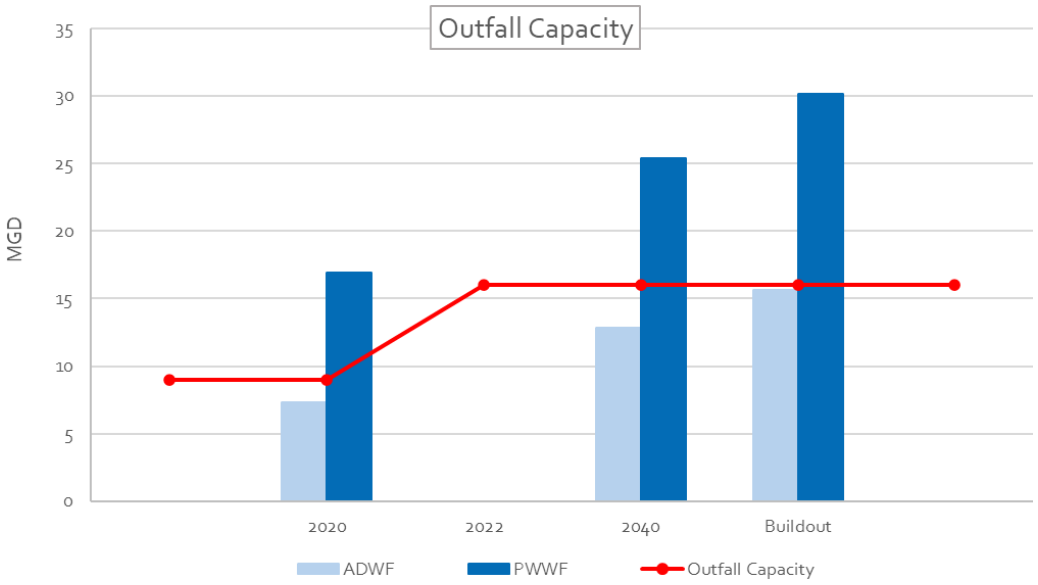


Figure 7.3 Outfall Capacity Compared to Projected Flows

7.4.2 Secondary Treatment Capacity

The secondary treatment capacity was evaluated on both a flow and load basis, with the loading capacity assessed by BOD loading. The City is upgrading the secondary treatment basins as well by adding a fourth basin of equal size, which increases the total basin volume by 30 percent. Loading capacity of the basins was assessed using mixed liquor suspended solids (MLSS) concentration and settleability assessed under the PWWF conditions. The upgrade has an anticipated completion date of 2025. Figure 7.4 and Figure 7.5 summarize the flow and load capacities as they relate to the projected flows and loads.

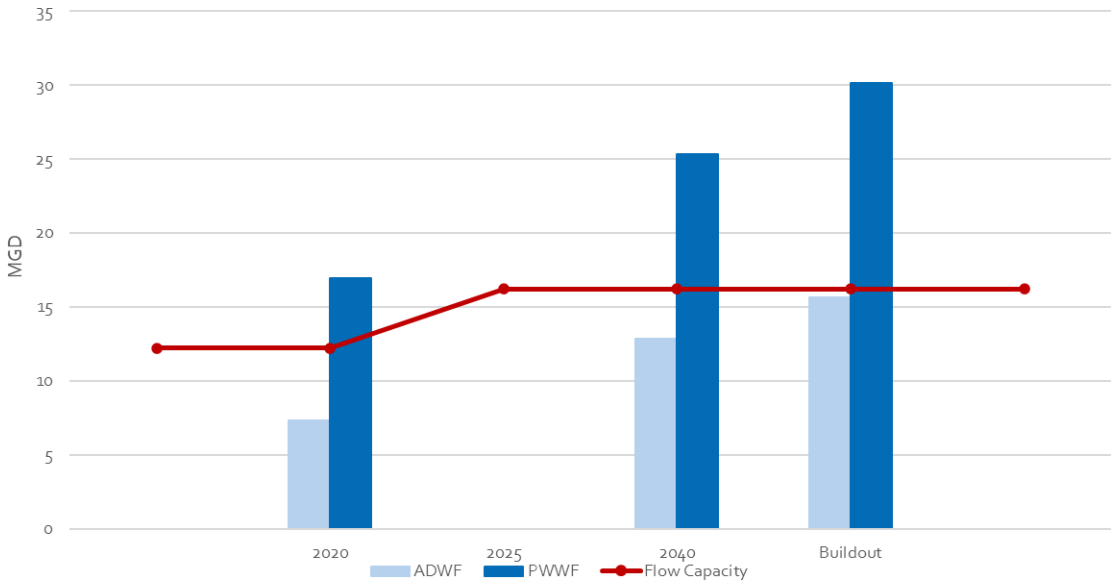


Figure 7.4 Secondary Treatment Flow Capacity Compared to Projected Flows

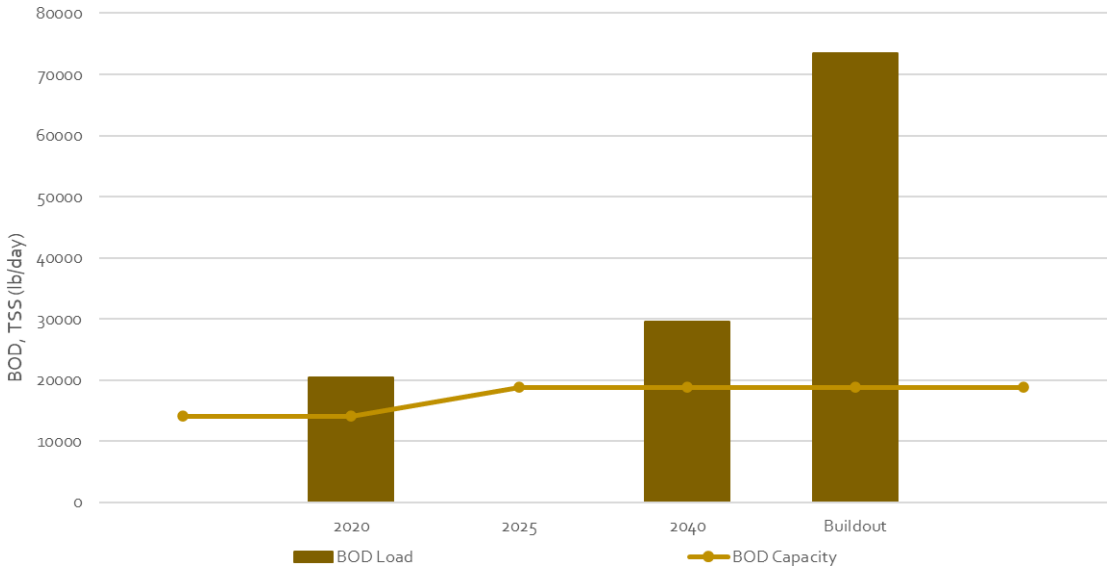


Figure 7.5 Secondary Treatment Load Capacity Compared to Projected BOD, TSS, and NH_3 Loads

7.4.3 Overall Facility Capacity

In addition to assessing the capacity of processes with upgrades in progress, the estimated flow capacity, from the 2019 Facility Plan, of all treatment processes was compared to the predicted future flows to predict when upgrades may be necessary. The hydraulic capacity was used to assess most processes unless detention time or overflow rate was a more appropriate analysis.

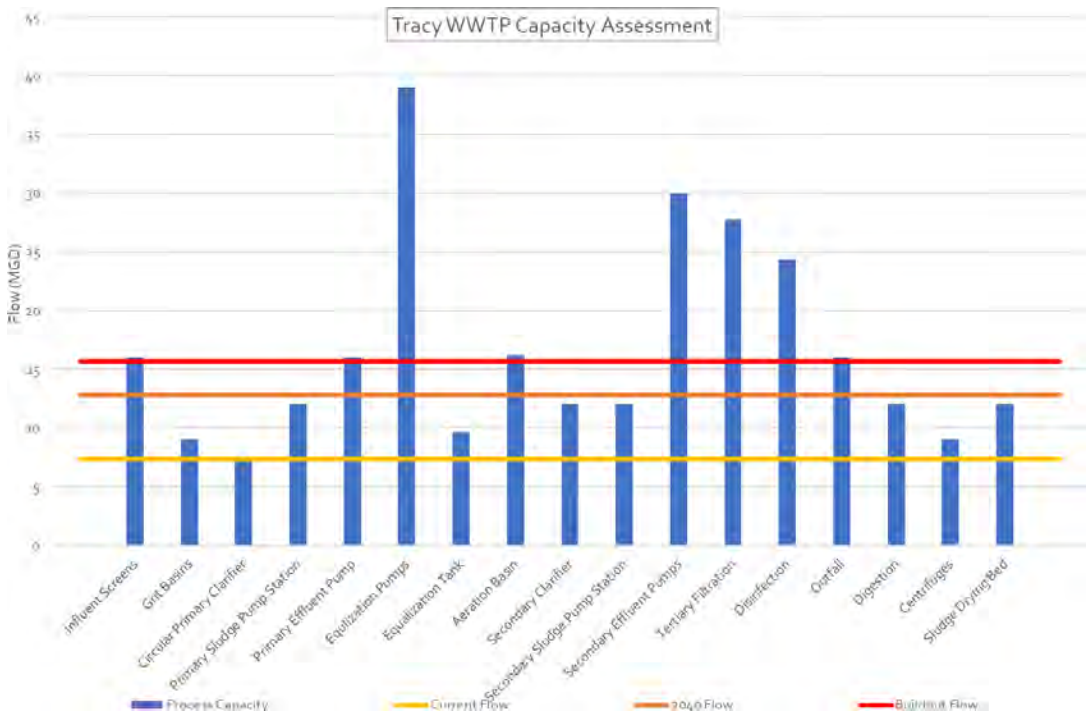


Figure 7.6 Hydraulic Capacity of Each Treatment Process Compared to Projected Flows

7.5 Current Treatment Plant Upgrades

The City is currently undergoing a series of treatment plant upgrades. Phases 1A, 1B, 2A, and 2B are fully complete, Phase 2C is designed but has yet to be completed. Phase 1A and 1B increased the treatment plant capacity from 6.5 mgd to 10.8 mgd. Table 7.5 summarizes the Phase 1 and 2 upgrades in detail.

Table 7.5 Phase 1 and 2 Treatment Plant Upgrades

Phase	Description
1A	• Completed 2002. Consists of upgrades to 3 Primary Effluent pumps, 3rd Secondary Clarifier, new RAS/WAS pump station, groundwater pump station near secondary clarifiers, upgrade of 2 Effluent pumps, and associated electrical and instrumentation and control systems. Increased capacity from 6.5 mgd to 9 mgd.
1B	• Completed in 2007. Increased treatment capacity from 9 to 10.8 mgd (no increase in discharge capacity). The following items are part of Phase 1B. • Construction-phase security upgrades. • Modifications to septage receiving and raw wastewater intake to Plant. • Internal remodel of existing Administration Building and existing Control Building. • New Headworks. • Demolition of existing headworks building (superstructure only) and old laboratory. • Demolition of existing unused digester complex (excepting digester to be converted to Biofilter). • Conversion of existing abandoned digester to Biofilter. • New Primary Influent Distribution Box and revised feed piping to primary clarifiers. • Demolition of existing Domestic Primary Clarifier Nos. 1 and 2. • New circular Primary Clarifier (No. 1). • New Primary Effluent Collection Box. • Demolition of Distribution Box No. 6. • New Primary Sludge Pump and associated piping and controls installed in existing Primary Sludge Pump Station structure. • New primary scum handling facilities including primary scum pit, heated primary scum tank, pumps, and concrete utility trench for routing of primary scum piping and hot water piping to/from existing operational digester complex. • New primary effluent pump and revisions to Primary Effluent Pump Station. • Three new Aeration Basins with connecting below-grade gallery complex including miscellaneous built-in pump stations, piping, and ancillaries. • Revisions to Distribution Box No. 1. • Revisions to Distribution Box No. 3. • Replacement mechanisms and miscellaneous components for existing Secondary Clarifier Nos. 1 and 2. • Addition of flocculation well for existing Secondary Clarifier No. 3. • New Secondary Effluent Collection Box. • New Secondary Scum Pump Station (manhole configuration). • New Secondary Effluent Pump Station. • New 2 million gallon Flow Equalization Tank. • New Tertiary Filter complex with connecting gallery. • New filter chemical storage and handling facility. • New Blower Building with control room and electrical room. • Modifications to existing aeration basins to convert them to Filter Backwash Equalization Tanks. • New Disinfection Chemical Building for chlorination and dechlorination chemicals and associated emergency scrubber. • New filter backwash pumps located adjacent to existing Chlorine Contact Basins 1 and 2. • New Distribution Box No. 7. • Modifications to Plant Effluent Channel to divert effluent to post-aeration. • New Post-Aeration Basin. • Modifications to existing rectangular clarifiers (out of service) to convert to Chlorine Contact Basins 5 and 6. • Miscellaneous modifications to existing blower room, primary effluent pump station, and aeration basin gallery. • New plant water (3W) pumps and strainers, and relocation of existing 3W pump. • Pavement of two existing sludge drying beds. • Conversion of one existing sludge drying bed to handle filter backwash solids. • New Standby Generator Facility and relocation of existing diesel storage tank. • New primary power facilities. • Electrical system improvements. • Process Instrumentation and Control System Improvements. • Site and facility security systems. • Site improvements/yard piping. • New Plant Stormwater Pump Station (manhole type). • Grading of existing emergency storage pond and miscellaneous modifications to outfall structures and intake within the pond. • New industrial pond return flow polymer addition facility. • Removal of contents and cleaning of existing Digesters No. 1 and 2.
2A	• Under construction. Proposed completion is Spring 2023. Increased discharge capacity from 9 mgd to 16 mgd (no increase in treatment capacity). • The following items are part of Phase 2A. • Installation of a 42-inch diameter effluent outfall pipeline from the City WWTP to a diffuser in the Old River and includes about 18,000 feet of 42-inch pipeline and 36-inch, 20-inch, 14-inch, 12-inch and 8-inch yard piping, a new pipeline diffuser system, new pumps and mechanical piping, a flowmeter vault, pond 3 pump station upgrade, miscellaneous appurtenances and electrical and communications conduits and integration.

Table 7.5 Phase 1 and 2 Treatment Plant Upgrades (continued)

Phase	Description
2B	• Under construction. Proposed completion is Fall 2023. Upgrades to solids treatment and primary treatment. Phase 2 was proposed to be complete in ONE phase. Due to lack of funds (or cash flow), it is being done in two phases. So, no increase in treatment capacity until Phase 2C is complete. The following items are part of Phase 2B. • Replacement of one existing perforated bar screens with multiple rake bar screen and associated electrical and instrumentation and controls. • 100 feet diameter Circular Primary Clarifier. • Groundwater Pump Station. • Demolition of old rectangular domestic primary clarifier at the location of proposed Circular Primary Clarifier. • Investigation and demolition of old large diameter concrete pipes, old electrical, and other pipes at the location of proposed Circular Primary Clarifier. • Installation of new large diameter pipes. • Valves, flow control devices, flow meters of various sizes. • Electrical Building for Digester Complex consisting of switch boards, circuit breakers, electrical and instrumentation and controls panels. • 75 feet diameter above ground digester. • Digester support facility and concrete trench for pipes. • 12 kilovolt power supply from existing junction box to the new Transformer next to Electrical Building. • Pumps, heat exchangers, control panels, and associated piping. • Above and underground piping, electrical, and instrumentation and controls systems, including underground and above ground facilities. • One centrifuge, associated piping, and control panels. • Conveyor system for loading dewatered sludge. • Excavation in an extremely congested area around existing utilities and extensive dewatering. • Concrete slab to support pumps and various structures. • Discharge header pipelines, control valves, air relief valves, flow meters, pipe supports, pressure sensors, air relief valves, and other appurtenances. • Electrical systems, including adjustable frequency drives, circuit breakers, switch boards, motor control centers, electrical conduits, conductors, and concrete encased duct banks. • Instrumental and control systems. • Telemetry and supervisory control and data acquisition.
2C	• 90% Design complete. Construction timing unknown. Will increase treatment capacity from 10.8 mgd to 12 mgd (actual treatment capacity is unknown since the BOD loading is increasing every year and actual construction timing is unknown). • The following items are part of proposed Phase 2C. • Septage receiving station. • Fiberglass box, weir gates, pumps, and piping for grease removal from headworks. • Replacement of two existing perforated bar screens with multiple rake bar screens and associated electrical and instrumentation and controls. • Packaged Power Center for headworks. • Addition of weir gate and scum pumps downstream of bar screens. • Grit removal basins, grit pumps, grit separator, and washer. • Demolition of old industrial primary clarifier at the location of proposed Grit Removal System. • Installation of new large diameter pipes. • New Aeration Basin (#1) and associated pipes in the existing secondary gallery. • Demolition of old large diameter concrete pipes, old electrical, and other pipes at the location of proposed Aeration Basin (#1). • One additional Turblex Blower and associated control panels. • Two large pumps in the existing secondary gallery and associated electrical and instrumentation and control systems. • Valves, flow control devices, flow meters of various sizes in the existing gallery. • Above and underground piping, electrical, and instrumentation and controls systems, including underground and above ground facilities. • Solids Dewatering Structure. • Overhead crane system. • Three Centrifuges, associated piping, and control panels. • Hopper and Conveyor system for loading dewatered sludge. • Excavation in an extremely congested area around existing utilities and extensive dewatering. • Concrete slab to support pumps and various structures. • Discharge header pipelines, control valves, air relief valves, flow meters, pipe supports, pressure sensors, air relief valves, and other appurtenances. • Electrical systems including adjustable frequency drives, circuit breakers, switch boards, motor control centers, electrical conduits, conductors and concrete encased duct banks. • Instrumental and control systems. • Telemetry and supervisory control and data acquisition. • Testing, startup and operator training. • Cathodic protection system. • Surveying. • Utility Potholing. • Reconstruction of existing road with new asphalt concrete paving. • Tie into existing piping and systems. • Area lighting.

Notes:
(1) Provided by City staff.

7.6 Planned Treatment Plant Upgrades

The 2019 Facility Plan also included a recommended phasing for upgrading the treatment processes that were estimated to run out of capacity based on their projected flows and loads. The phasing was intended to allow the facility to upgrade processes just before they were operating at capacity. These phases do not include the outfall upgrade or aeration basin addition as those upgrades are already in progress. Table 7.6 through Table 7.8 summarize the proposed upgrade phases from the 2019 Facility Plan.

Table 7.9 and Table 7.10 indicate a revised phasing plan for treatment upgrades using the above capacities and revised future flows/loads. This phasing plan does not consider the age or maintenance requirements of existing systems, these upgrades are recommended based on treatment capacity alone.

Phase 3 of the revised proposed upgrades represents processes that need to be upgraded before/near the 2040 predicted flows and phase 4 of the revised proposed upgrades represent processes that will need to be upgraded before/near buildout conditions.

Table 7.6 Proposed Phase 3 Upgrades

Proposed Phase 3 Upgrades
Process Upgrade
New Primary Influent Distribution Box
Circular Clarifier #3
Scum Heating and Transfer System #2
Add Pump to Match Existing in Primary Effluent Pump Station
New Primary Effluent Equalization Pump Station
Primary Effluent Equalization Tank #2
Aeration Basins #5 and #6
RAS Pump Station #2
New Mixed Liquor Distribution Box
Galleries for Aerations Basins #5 and #6
New WAS and Mixed Liquor Pump Station
New Glycerin Feed and Storage System
Retrofit North Chlorine Contact Basins
New UV System
Anaerobic Digester #4
Remove 1975 Trickling Filters
New Centrate Equalization Tank and Pump Station

Table 7.7 Proposed Phase 4 Upgrades

Proposed Phase 4 Upgrades
Process Upgrade
Additional Influent Screen and Channel
Grit Removal Basin #3
Expand Grease Removal System
Relocate Plant Control Building
Remove Rectangular Clarifiers and Primary Sludge Pump Station
Primary Sludge Pump Station #2
Aeration Basin #7
Gallery for Aeration Basin #7
Blower Building #2
Secondary Clarifier #2
Conventional Deep Bed Filters #9 and #10
New Inline Rapid Mixer
New Coagulant Feed System
Recycled Water Pump Station Expansion
Remove Existing DAFTs #1 and #2
New Gravity Belt Thickeners #1 and #2

Table 7.8 Proposed Phase 5 Upgrades

Proposed Phase 5 Upgrades
Process Upgrade
Grit Removal Basin #4
Circular Clarifier #4
Primary Effluent Equalization Tank #3
New Secondary Effluent Pump Station
Conventional Deep Bed Filters #11 and #12
New Filter Backwash Supply Pump Station
New Additional UV Banks
Gravity Belt Thickener #3
Anaerobic Digester #5
New Digested Sludge Holding Tank
New Larger Centrifuges

Table 7.9 Revised Phase 3 Proposed Upgrades

Revised Phase 3 Upgrades
Process Upgrade
Grit Removal Basin #3
Circular Clarifier #3
Primary Sludge Pump Station #2
Primary Effluent Equalization Tank #2
Aeration Basin #5
Secondary Clarifier #2
New WAS and Mixed Liquor Pump Station
Anaerobic Digester #4
Remove 1975 Trickling Filters
New Centrate Equalization Tank and Pump Station
New Sludge Drying Bed #4

Table 7.10 Revised Phase 4 Proposed Upgrades

Revised Phase 4 Upgrades
Process Upgrade
Additional Influent Screen and Channel
New Primary Effluent Equalization Pump Station
New Outfall Pipeline

7.7 Summary and Findings

7.7.1 Current Capacity

The current WTWP capacity is not sufficient for the existing flows, in particular the outfall and secondary treatment system. However, both the outfall pipeline and secondary treatment system are currently undergoing expansion, which will increase the capacity to meet current influent flows. The Outfall pipeline will increase from 9 mgd to 16 mgd which should provide enough capacity for projected buildout flows or approximately 19,200 EDUs of growth. The secondary treatment system will be increased hydraulically by 30 percent, increasing the current capacity of 12.2 mgd to 16.2 mgd in the next few years. The updated hydraulic capacity will provide enough capacity for just under projected buildout flows and provides capacity for approximately 15,350 EDUs of growth. The secondary treatment load capacity will increase by approximately 30 percent as well, increasing from 18,000 ppd of BOD to 24,000 ppd of BOD. This will provide enough capacity for current loading conditions, but by 2040 the loading will exceed the capacity of the secondary clarifiers.

7.7.2 Future Capacity

As summarized in the Revised Phase 3 Upgrades presented above, several processes beyond secondary treatment and the outfall pipeline will require capacity increases before 2040. These processes include an additional aeration basin and secondary clarifier as discussed above, but also an additional grit basin, an additional circular primary clarifier, addition to the primary sludge pumping station, an additional primary effluent equalization tank, addition to the secondary sludge pump station, an additional anaerobic digester, an additional centrifuge, and an additional sludge drying bed. These recommended updates are recommended based on flow capacity alone, without taking age of existing equipment or maintenance requirements into account.

Assuming all processes included in the Phase 3 Upgrades are upgraded and meet the capacity need of projected buildout flows, the only processes that will require capacity increases before buildout flows are realized are an additional influent screen, addition to the primary effluent equalization pump station, and additional capacity at the outfall. Once again, these recommendations are made on a flow based capacity only.

7.7.3 Wastewater Treatment Plant Expansion Areas

The future expansion of the WWTP will require use of land located adjacent to the existing WWTP. Decades ago, the City's wastewater enterprise fund purchased land located north and west of the existing site for the future expansions. A map of the acquired lands are shown in Appendix F. Portions of this land will be used for other purposes as well. A portion of the land will be reserved for potential improvements including the effluent cooling system if it is required by the future NPDES permit or other permitting requirements. The City has also leased certain portions of the land to Combined Solar Technologies (CST) for construction of a desalination plant and for storage of agricultural waste for fuel for the plant. Additionally, a portion of the land may be used for temporary or permanent storage facilities for recycled water.

Chapter 8

CAPITAL IMPROVEMENT PLAN

This chapter presents the City's sewer CIP and summary of the capital costs. This chapter is organized to assist the City in making financial decisions. The CIP is based on the evaluation of the City's sanitary sewer collection system, as described in Chapter 6.

8.1 Project Prioritization

Prioritizing the required capital improvements for the City is an important part of this study. Improvement projects were prioritized in the following order:

- Upgrade existing facilities to mitigate current capacity deficiencies.
- Upgrade existing facilities to accommodate increased wastewater flows associated with long term planning (2040) and buildout.
- Construct new infrastructure required to serve future users.

Based on these factors, each project was categorized as either a Near Term, Future (Year 2040), or Buildout project. Near term projects are targeted for implementation by year 2030. Long term projects are targeted for implementation between years 2031 and 2040. Buildout projects are targeted for implementation beyond 2040 and are outside of the planning period.

Implementation of future capacity and growth improvements ultimately depends on growth. For this reason, the phasing assumptions presented in this report are estimates, and changes in the City's planning assumptions or growth projections may shift priority of each project.

8.2 Capital Improvement Project Costs

The capacity upgrades and other system capital improvements set the foundation of the City's sanitary sewer collection system CIP. The cost estimates presented in this study are opinions developed from bid tabulations, cost curves, information obtained from previous studies, and Carollo experience on other projects. The costs are based on an Engineering News Record Construction Cost Index (ENR CCI) for San Francisco of 15,640 (July 2022).

8.3 Cost Estimating Accuracy

The cost estimates presented in the CIPs have been prepared for general master planning purposes and for guidance in project evaluation and implementation. Final costs of a project will depend on actual labor and materials costs, competitive market conditions, final project scope, implementation schedule, and other variable factors such as preliminary alignment generation, investigation of alternative routings, and detailed utility and topography surveys.

The Association for the Advancement of Cost Engineering (AACE) defines an Order of Magnitude Estimate, deemed appropriate for master plan studies as an approximate estimate made without detailed engineering data. It is normally expected that an estimate of this type would be accurate within plus 50 percent to minus 30 percent. This section presents the assumptions used in developing order of magnitude cost estimates for recommended facilities.

8.4 Construction Unit Costs

The construction costs are representative of sewer collection system facilities under normal construction conditions and schedules. Costs have been estimated for public works construction. Land acquisition costs of $250,000 per acre was used for applicable projects.

8.4.1 Pipeline Unit Costs

Sewer pipeline improvements range in size from 8 inches to 27 inches in diameter in this study. There are gravity main and force main improvements recommended in this study. Unit costs for the construction of pipelines and appurtenances (e.g., manholes) are shown in Table 8.1. The construction cost estimates are based upon these unit costs. The unit costs are for "typical" field conditions with construction in stable soil at a depth ranging between 10 feet to 15 feet.

Table 8.1 Gravity Pipeline Unit Construction Costs

Pipe Diameter (inches)	Replacement Unit Construction Cost ($/linear foot)
Gravity Mains	
8	260
10	270
12	285
14	300
15	305
18	330
20	405
21	420
24	460
27	520
Force Mains	
14	445
16	445

Notes:
(1) ENR 20 City Average Construction Cost Index for July 2022 is 15,640.

8.4.2 Lift Station Unit Costs

The estimated costs for projects to increase the pumping capacity of a lift station assume complete replacement of the lift station. Lift station cost estimates are based on a rate of $0.50 per gallon.

8.5 Project Costs and Contingencies

Project cost estimates are calculated based on elements, such as the project location, size, length, and other factors. Allowances for project contingencies consistent with an "Order of Magnitude" estimate are also included in the project costs prepared as part of this study, as outlined in this section.

8.5.1 Baseline Construction Costs

Baseline construction cost is the total estimated construction cost, in dollars, of the proposed improvements for pipelines. Baseline construction costs were calculated by multiplying the estimated length by the unit construction cost listed in Table 8.1.

8.5.2 Capital Improvement Cost

Other project costs include costs associated with engineering, construction-phase professional services, and project administration. Engineering services associated with new facilities include preliminary investigations and reports, right-of-way (ROW) acquisition, foundation explorations, preparation of drawings and specifications during construction, surveying and staking, sampling of testing material, and start-up services. Construction-phase professional services cover such items as construction management, engineering services, materials testing, and inspection during construction. Finally, there are project administration costs, which cover such items as legal fees, environmental/California Environmental Quality Act (CEQA) compliance requirements, financing expenses, administrative costs, and interest during construction.

As shown in the following sample calculation of the capital improvement cost, the total cost of all project contingencies (general contingency, design cost, and construction management) is 35 percent of the baseline construction cost. This 35 percent markup are the City's standard markup costs. These project Calculation of the 35 percent is the overall markup on the baseline construction cost to arrive at the capital improvement cost. It is not an additional contingency.

Example:

Baseline Construction Cost	**$1,000,000**
General Contingency (15 percent)	$150,000
Design Cost (10 percent)	$100,000
Construction Management (10 percent)	$100,000
Capital Improvement Cost	**$1,350,000**

8.6 Capital Improvement Program Implementation

The proposed capital improvements are prioritized based on their urgency to mitigate existing deficiencies and for serving future growth. The capital improvements were phased according to the following improvement categories:

- **Phase 1 (2022-2026):** This phase includes projects that are targeted as highest priority existing improvements.
- **Phase 2 (2027-2030):** This phase includes medium priority existing improvements.
- **Phase 3 (2031-2040):** This phase includes low priority existing improvements, as well as projects triggered by growth that is expected to occur by the year 2040.
- **Phase 4 (2041 and beyond):** This phase includes improvements related to ultimate buildout of the City.

A summary of the capital project costs is presented in Table 8.2. This table identifies the projects, provides a brief description of the project, identifies facility size (e.g., pipe diameter and length), and provides capital improvement cost. The table also shows the probably phase in which the project would be implemented. The implementation timeframe was based on the priority of each project to correct existing deficiencies or to serve future users. Detailed

improvement sheets can be found in Appendix E. Projects that are not capacity or development related were listed in the "other projects".

Figure 8.1 illustrates the CIP cost summary by project type. As shown in Figure 8.1, other projects account for 64 percent of the recommended improvements. Table 8.3 provides a summary by phase and project type. Phase 2 improvements account for the smallest cost share at 5.0 percent ($10.0 million) of the total project cost, with Phase 4 having the largest cost share at 40 percent ($81.4 million).

Table 8.2 Collection System Capital Improvement Plan

Project		Existing Size/Type	Proposed Size/Type	Proposed Amount	CIP Cost Estimate [1][2]($)	Existing User Cost ($)	Future User Cost ($)	CIP Phasing ($)							
								Near-Term						Long-Term	Build-Out
								2022	2023	2024	2025	2026	2027-2030	2031-2040	2041 & beyond
Capacity Related Improvements					$33,575,000	$2,067,000	$31,508,000	$-	$169,000	$196,000	$185,000	$3,765,000	$-	$11,139,000	$21,886,000
Gravity Mains		Diameter (in)	Diameter (in)	Length (ft)	$9,353,000	$2,067,000	$7,286,000	$-	$169,000	$196,000	$185,000	$3,765,000	$-	$4,105,000	$4,698,000
WWGM-1	Gravity Main along Bessie Avenue	8	12	440	$169,000	$169,000	$-	$-	$169,000	$-	$-	$-	$-	$-	$-
WWGM-2	Gravity Main along Bessie Avenue	10	12	510	$196,000	$196,000	$-	$-	$-	$196,000	$-	$-	$-	$-	$-
WWGM-3	Gravity Main along North Central Avenue	8	15	450	$185,000	$185,000	$-	$-	$-	$-	$185,000	$-	$-	$-	$-
Phase 2	Corral Hollow Phase 2	-	18	8450	$3,765,000	$-	$3,765,000	$-	$-	$-	$-	$-	$-	$3,765,000	$-
WWGM-4	Gravity Main along MacArthur Drive	12	21	600	$340,000	$-	$340,000	$-	$-	$-	$-	$-	$-	$340,000	$-
WWGM-11	Gravity Main along Lammers Road and Byron Road	21	27	2710	$1,902,000	$-	$1,902,000	$-	$-	$-	$-	$-	$-	$-	$1,902,000
WWGM-12	Gravity Main along Corral Hollow Road	18	24	380	$236,000	$-	$236,000	$-	$-	$-	$-	$-	$-	$-	$236,000
WWGM-15	Gravity Main along Acacia Street and Franklin Avenue	18	21	750	$425,000	$302,000	$123,000	$-	$-	$-	$-	$-	$-	$-	$425,000
WWGM-16	Gravity Main along MacArthur Drive	21	24	1,500	$932,000	$662,000	$270,000	$-	$-	$-	$-	$-	$-	$-	$932,000
WWGM-17	Gravity Main along Chrisman Road	12	18	2,700	$1,203,000	$553,000	$650,000	$-	$-	$-	$-	$-	$-	$-	$1,203,000
Lift Stations		Capacity (mgd)	Capacity (mgd)		$19,103,000	$-	$19,103,000	$-	$-	$-	$-	$-	$-	$7,034,000	$13,331,000
WWLS-1	Hansen Lift Station	9.01	10.8	TBD	$7,290,000	$-	$7,290,000	$-	$-	$-	$-	$-	$-	$7,034,000	$-
WWLS-3	Larch Lift Station	12.96	17.5	TBD	$13,331,000	$-	$13,331,000	$-	$-	$-	$-	$-	$-	$-	$13,331,000
Force Main		Diameter (in)	Diameter (in)	Length (ft)	$3,857,000	$-	$3,857,000	$-	$-	$-	$-	$-	$-	$-	$3,857,000
WWFM-2	Hansen Force Main	12	16	6420	$3,857,000	$-	$3,857,000	$-	$-	$-	$-	$-	$-	$-	$3,857,000
Development Related Improvements					$40,936,000	$-	$40,936,000	$-	$-	$-	$-	$-	$9,222,000	$4,753,000	$26,961,000
Gravity Mains		Diameter (in)	Diameter (in)	Length (ft)	$33,188,000	$-	$33,188,000	$-	$-	$-	$-	$-	$1,474,000	$4,753,000	$26,961,000
WWGM-5	Gravity Main along Lammers Road	--	18	3,310	$1,474,000	$-	$1,474,000	$-	$-	$-	$-	$-	$1,474,000	$-	$-
WWGM-6	Gravity Main to Serve Holly Sugar Industrial	--	12	1,520	$585,000	$-	$585,000	$-	$-	$-	$-	$-	$-	$585,000	$-
WWGM-7	Gravity Main to Serve Ellis	--	12	1,760	$678,000	$-	$678,000	$-	$-	$-	$-	$-	$-	$678,000	$-
WWGM-8	Gravity Main to Serve Rocking Horse and UR7 Bright/Castro	--	12	4,700	$1,809,000	$-	$1,809,000	$-	$-	$-	$-	$-	$-	$1,809,000	$-
WWGM-9	Gravity Main to Serve Avenues and SWC Valpico & Corral Hollow	--	12	2,650	$1,019,000	$-	$1,019,000	$-	$-	$-	$-	$-	$-	$1,019,000	$-
WWGM-10	Gravity Main to Serve Tracy Village	--	12	1,720	$662,000	$-	$662,000	$-	$-	$-	$-	$-	$-	$662,000	$-
WWGM-13	Gravity Main to Serve Chrisman	--	12	5,750	$2,213,000	$-	$2,213,000	$-	$-	$-	$-	$-	$-	$-	$2,213,000
WWGM-14	Gravity Main to Serve Rocha	--	12	1,420	$547,000	$-	$547,000	$-	$-	$-	$-	$-	$-	$-	$547,000
Cordes Ranch	Gravity Mains to Serve Cordes Ranch	--	Multiple	66,160	$24,201,000	$-	$24,201,000	$-	$-	$-	$-	$-	$-	$-	$24,201,000
Lift Stations		Capacity (mgd)	Capacity (mgd)		$3,068,000	$-	$3,068,000	$-	$-	$-	$-	$-	$3,068,000	$-	$-
WWLS-2	Lammers Lift Station	-	4.36	N/A	$3,068,000	$-	$3,068,000	$-	$-	$-	$-	$-	$3,068,000	$-	$-
Force Main		Diameter (in)	Diameter (in)	Length (ft)	$4,680,000	$-	$4,680,000	$-	$-	$-	$-	$-	$4,680,000	$-	$-
WWFM-1	Schulte Road Force Main	-	14	7,790	$4,680,000	$-	$4,680,000	$-	$-	$-	$-	$-	$4,680,000	$-	$-
Other Projects					$127,795,000	$2,925,000	$124,870,000	$-	$150,000	$150,000	$150,000	$150,000	$750,000	$57,387,000	$34,058,000
WWRR-1	Annual Sewer Line Replacement Program	--	--	--	$2,700,000	$2,700,000	$-	$-	$150,000	$150,000	$150,000	$150,000	$600,000	$1,500,000	$-
WWO-1	Wastewater Master Plan Update	--	--	--	$450,000	$225,000	$225,000	$-	$-	$-	$-	$-	$150,000	$300,000	$-
WWO-2	WWTP Expansion Phase 2C	--	--	--	$35,000,000	$-	$35,000,000	$-	$-	$-	$-	$35,000,000	$-	$-	$-
WWO-3	WWTP Expansion Phase 3	--	--	--	$55,587,000	$-	$55,587,000	$-	$-	$-	$-	$-	$-	$55,587,000	$-
WWO-4	WWTP Expansion Phase 4	--	--	--	$34,058,000	$-	$34,058,000	$-	$-	$-	$-	$-	$-	$-	$34,058,000
CIP Total					**$202,306,000**	**$4,992,000**	**$197,314,000**	**$-**	**$319,000**	**$346,000**	**$335,000**	**$35,150,000**	**$9,972,000**	**$73,279,000**	**$82,905,000**
Annual Cost								**$-**	**$319,000**	**$346,000**	**$335,000**	**$35,150,000**	**$2,493,000**	**$6,107,000**	**N/A**

Notes:
(1) ENR 20 San Francisco Construction Cost Index for July 2022 is 15,640.
(2) Estimated Construction Cost includes a 15 percent general contingency, 10 percent for design costs, and 10 percent for construction management.

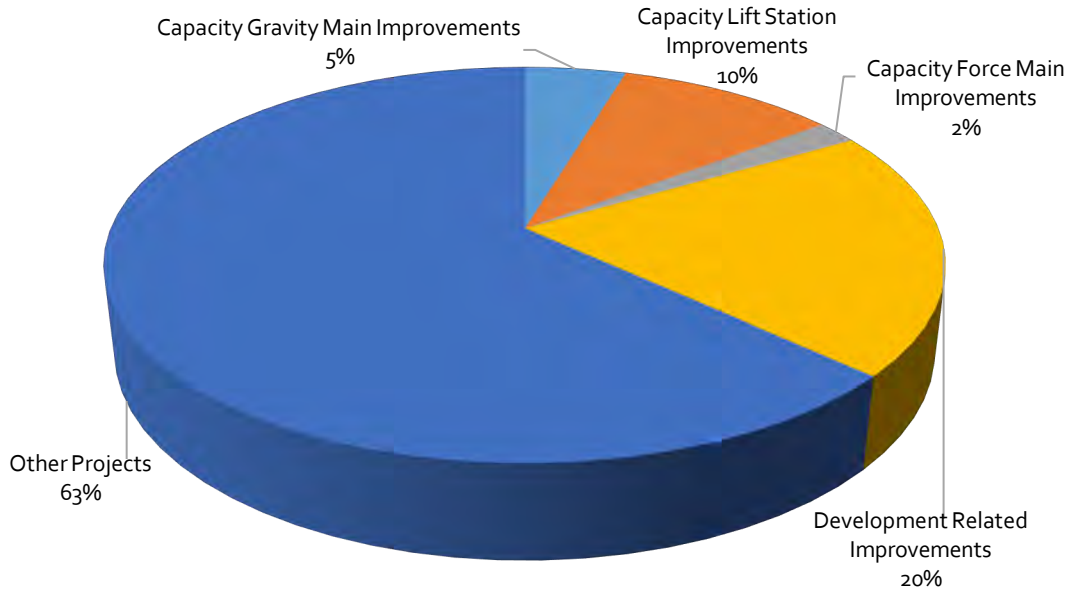


Figure 8.1 Project Cost Summary by Type

Table 8.3 CIP Cost by Project Type and Phase

Project Type	Phase 1 (2022-2026) ($)	Phase 2 (2027-2030) ($)	Phase 3 (2031-2040) ($)	Phase 4 (2041 & Beyond) ($)	Total ($)
Capacity/Storage Improvements					
Gravity Mains	$550,000	-	$4,105,000	$4,698,000	$9,353,000
Lift Station	-	-	$7,034,000	$13,331,000	$20,365,000
Force Main	-	-	-	$3,857,000	$3,857,000
Subtotal	**$550,000**	**-**	**$11,139,000**	**$21,886,000**	**$33,575,000**
Development Related Improvements					
Gravity Mains	-	$1,474,000	$4,753,000	$26,961,000	$33,188,000
Lift Station	-	$3,068,000	-	-	$3,068,000
Force Main	-	$4,680,000	-	-	$4,680,000
Subtotal	**-**	**$9,222,000**	**$4,753,000**	**$26,961,000**	**$40,936,000**
Other Projects					
Master Plan	-	$150,000	$300,000	-	$450,000
Annual Sewer Line Replacement	$600,000	$600,000	$1,500,000		$2,700,000
WWTP Expansion	$35,000,000	-	$55,587,000	$34,058,000	$124,645,000
Subtotal	**$35,600,000**	**$750,000**	**$57,387,000**	**$34,058,000**	**$127,795,000**
Total	**$36,150,000**	**$9,972,000**	**$73,279,000**	**$82,905,000**	**$202,306,000**

Notes:
(1) ENR 20 San Francisco Construction Cost Index for July 2022 is 15,640.

8.7 Existing Versus Future User Cost Share

Improvement costs within this study can be categorized as beneficial to existing users or future users, with some of the costs distributed between both categories. Costs are assigned to existing users if the improvement is related to an existing deficiency. Existing projects also benefit future users, which are assigned a portion of the cost. Projects that solely benefit future users such as new development will be assigned 100 percent of the cost. A summary of existing and future user cost share for the proposed projects by phase is summarized in Table 8.4, while Table 8.5 summarizes user cost by project type.

Table 8.4 CIP Cost by Reimbursement Category

Reimbursement Category	Phase 1 (2022-2026) ($)	Phase 2 (2027-2030) ($)	Phase 3 (2031-2040) ($)	Phase 4 (2041 & beyond) ($)	Total ($)
Existing Users	$1,150,000	$750,000	$1,575,000	$1,517,000	$4,992,000
Future Users	$35,000,000	$9,222,000	$71,704,000	$81,388,000	$197,314,000
Total	**$36,150,000**	**$9,972,000**	**$73,279,000**	**$82,905,000**	**$202,306,000**

Table 8.5 CIP Cost by Project Type and Reimbursement Category

Project Type	Existing User ($)	Future User ($)	Total ($)
Capacity Improvements			
Gravity Mains	$2,067,000	$7,286,000	$9,353,000
Lift Stations	-	$20,365,000	$20,365,000
Force Mains	-	$3,857,000	$3,857,000
Subtotal	**$2,067,000**	**$31,508,000**	**$33,575,000**
Development Related Improvements			
Gravity Mains	-	$33,188,000	$33,188,000
Lift Stations	-	$3,068,000	$3,068,000
Force Mains	-	$4,680,000	$4,680,000
Subtotal	**-**	**$40,936,000**	**$40,936,000**
Other Projects			
Wastewater Master Plan Update	$225,000	$225,000	$450,000
Annual Sewer Line Replacement	$2,700,000	$-	$2,700,000
WWTP Expansion	$-	$124,645,000	$124,645,000
Subtotal	**$2,925,000**	**$124,870,000**	**$127,795,000**
Total	**$4,992,000**	**$197,314,000**	**$202,306,000**

Appendix A

LAND USE WITH TAZ ESTIMATES

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 Build out	TAZ 2040 to Build out	TAZ Buildout	TAZ Build out	TAZ Build out	TAZ Build out	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
Ellis DA additional RGAs (7) **2250 RGAs	665	?	?	?							562																	2,250	0		0		0	0	0
	666										562																	562	0		0		0	0	0
	600										563																	563	0		0		0	0	0
	667										563																	563	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

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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 Build out	TAZ 2040 to Build out	TAZ Buildout	TAZ Build out	TAZ Build out	TAZ Build out	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		
	834							20						20																			40	0
	835																		57												0		0	57
	836																														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 (2	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																																		
Cintra Park	640																																		

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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 Build out	TAZ 2040 to Build out	TAZ Buildout	TAZ Build out	TAZ Build out	TAZ Build out	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		
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
The Classics, California Espirit, Mobile Home Park	537																																		
Garden Square + Shamrock	699																			4											0		0	4	0
Garden Square+ Brookview	1041																																		
Garden Square	696																																		
Mars Ct, Gandy Dancer area	816							4.8												18										0		0	23	0
Jim Tracey (vacant)	815												29																	0		0	0	29
N. Side Valpico, inc. Tar pit	811																	442											442	0		0	0	0
NEI Amazon + Crate & Barrel North bldg.	649													15																0		0	15	0
US Cold, other Ind.	650																																		
Crate & Barrel South, Amazon Pkng	680													5																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																																		

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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		
Fairhaven, Victoria Greens, Harvest Glen, Glen Creek	596																																		
Murifield 8 & 9	607																																		
Murifield	608																																		
Parkside Estates, California Parkside, California Marquis	609																																		
Glenbriar, Pebblebrook	590																																		
County Residential	591																																		
Tiburon Village, Katerra Apts	812					264																						0			0		0	0	0
Larkspur Estates-14 units remainin	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

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M-1, PUD, HS (N. of I-205, b/t Tracy & Holly)	637																			2														
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
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**					**10404**	**1266**	**413.95**	**2112**	**60**	**139**	**6072**	**3279**	**478**	**957**	**50**		**751**	**1,898**	**681**	**68**	**156**	**20,518**	**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

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Appendix B

V&A SEWER FLOW MONITORING STUDY

City of Tracy

Sewer Flow Monitoring Study



Prepared for:

Carollo
100 West Liberty St., Suite 740
Reno, NV 89501

Report Date:

July 2020

Prepared by:

V&A consulting engineers

V&A Project No. 17-0337

City of Tracy, California

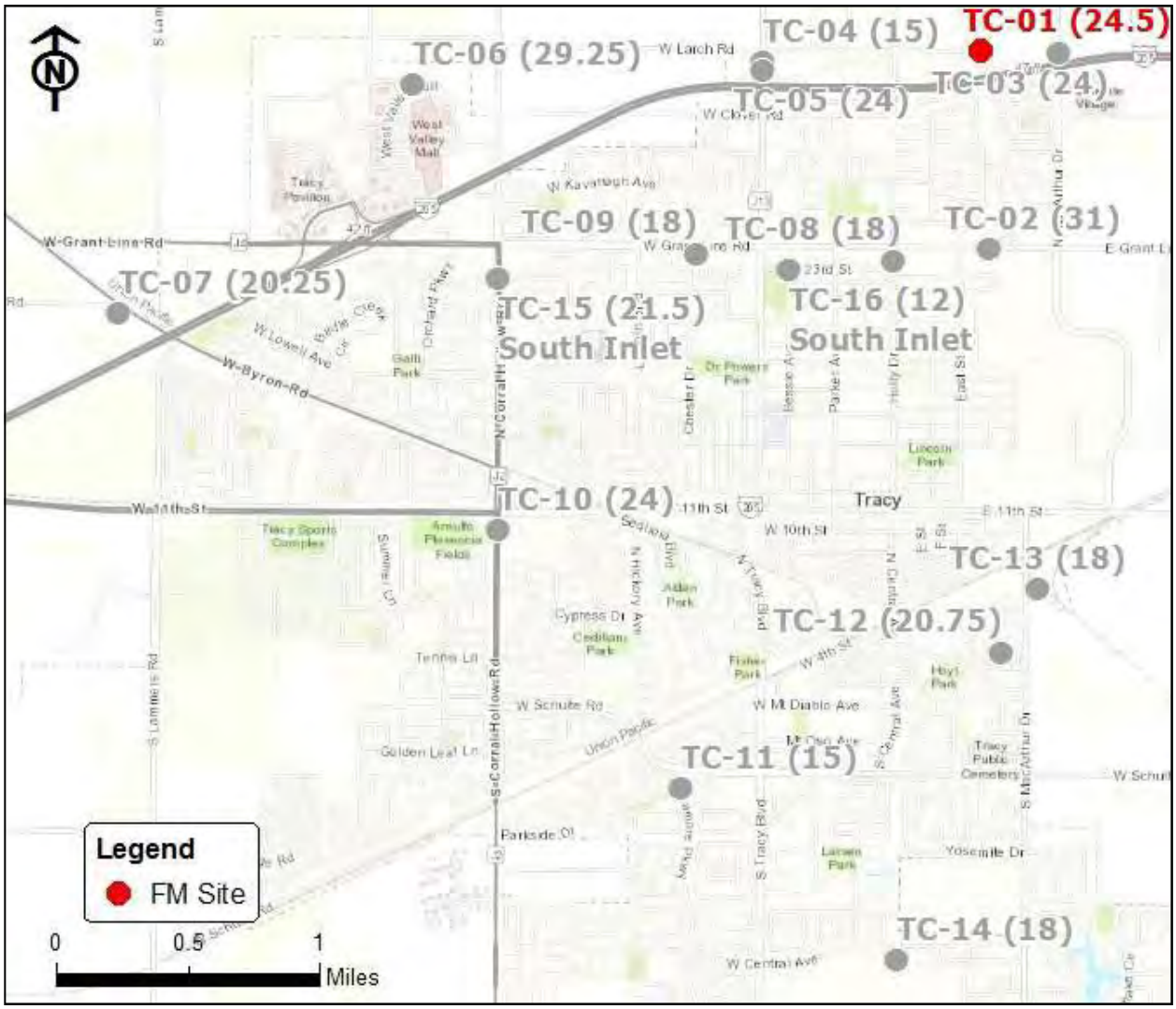
Sanitary Sewer Flow Monitoring

February 26 - April 08, 2020

Monitoring Site: **TC-01**

Location: **East end of East Larch Road, between curb and railroad tracks**

Data Summary Report



Vicinity Map: TC-01

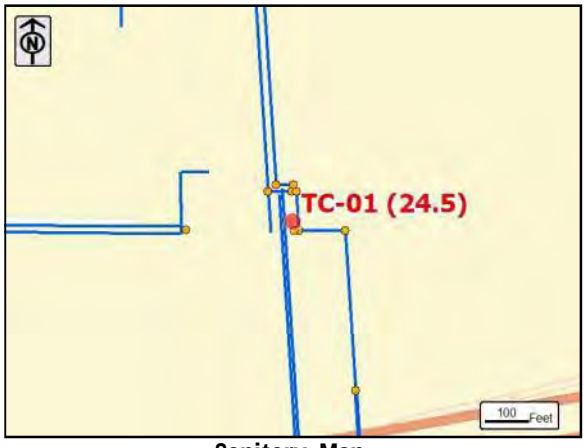
TC-01

Site Information

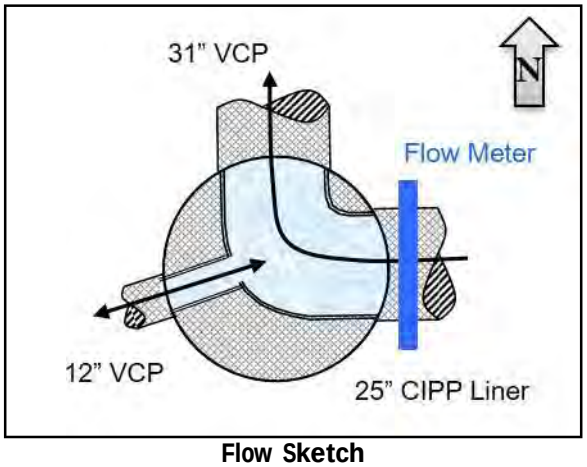
Location:	**East end of East Larch Road, between curb and railroad tracks**
City Manhole:	
Coordinates:	**121.4200° W, 37.7650° N**
Rim Elevation (Earth):	**25 feet**
Pipe Diameter:	**24.5 inches**
ADWF:	**1.618 mgd**
Peak Measured Flow:	**3.581 mgd**



Satellite Map



Sanitary Map



Flow Sketch



Street View



Plan View

TC-01

Additional Site Photos

Effluent Pipe



Monitored South Influent Pipe



TC-01

Additional Site Photos

West Influent Pipe

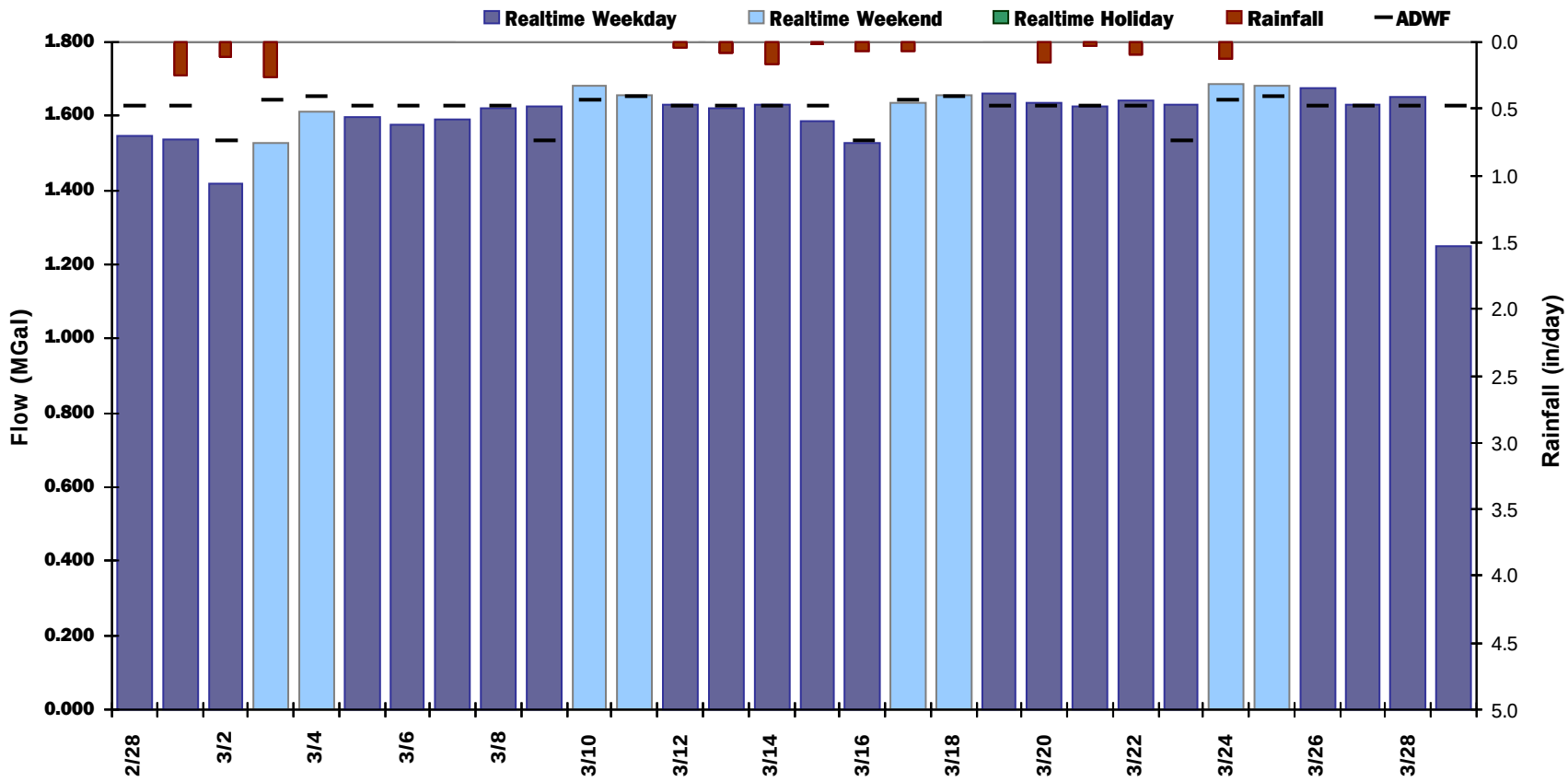


TC-01

Period Flow Summary: Daily Flow Totals

Avg Period Flow: 1.602 MGal **Peak Daily Flow: 1.684 MGal** **Min Daily Flow: 1.249 MGal**

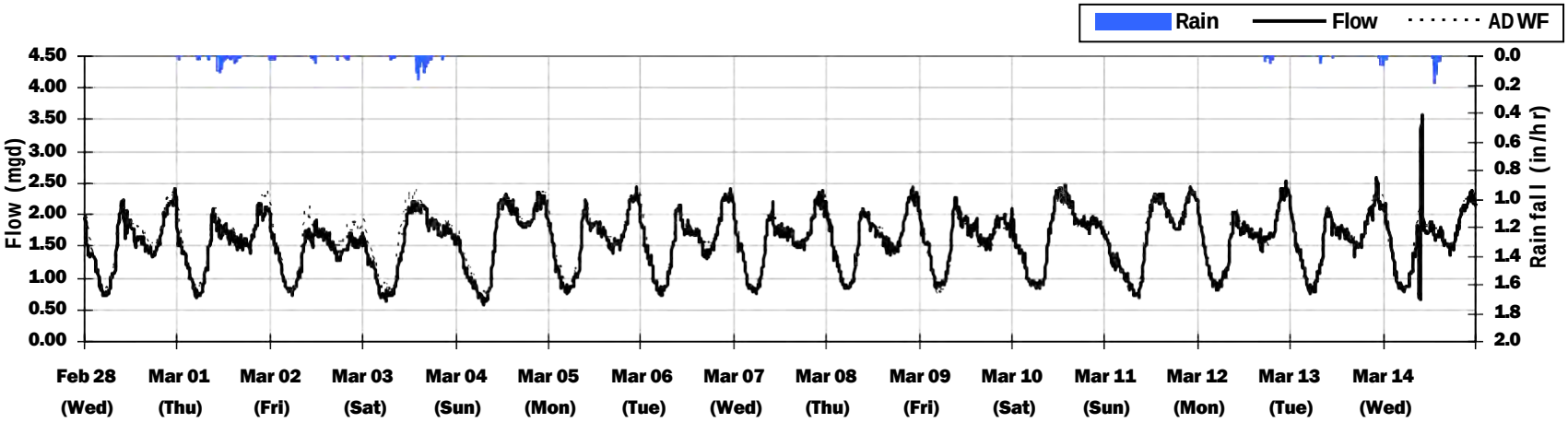
Total Period Rainfall: 1.43 inches

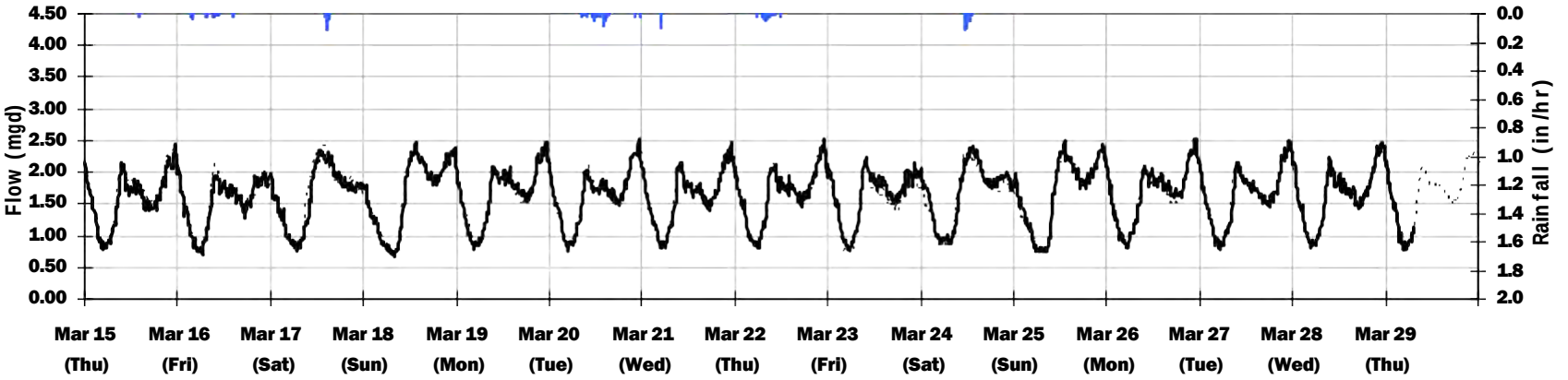


TC-01

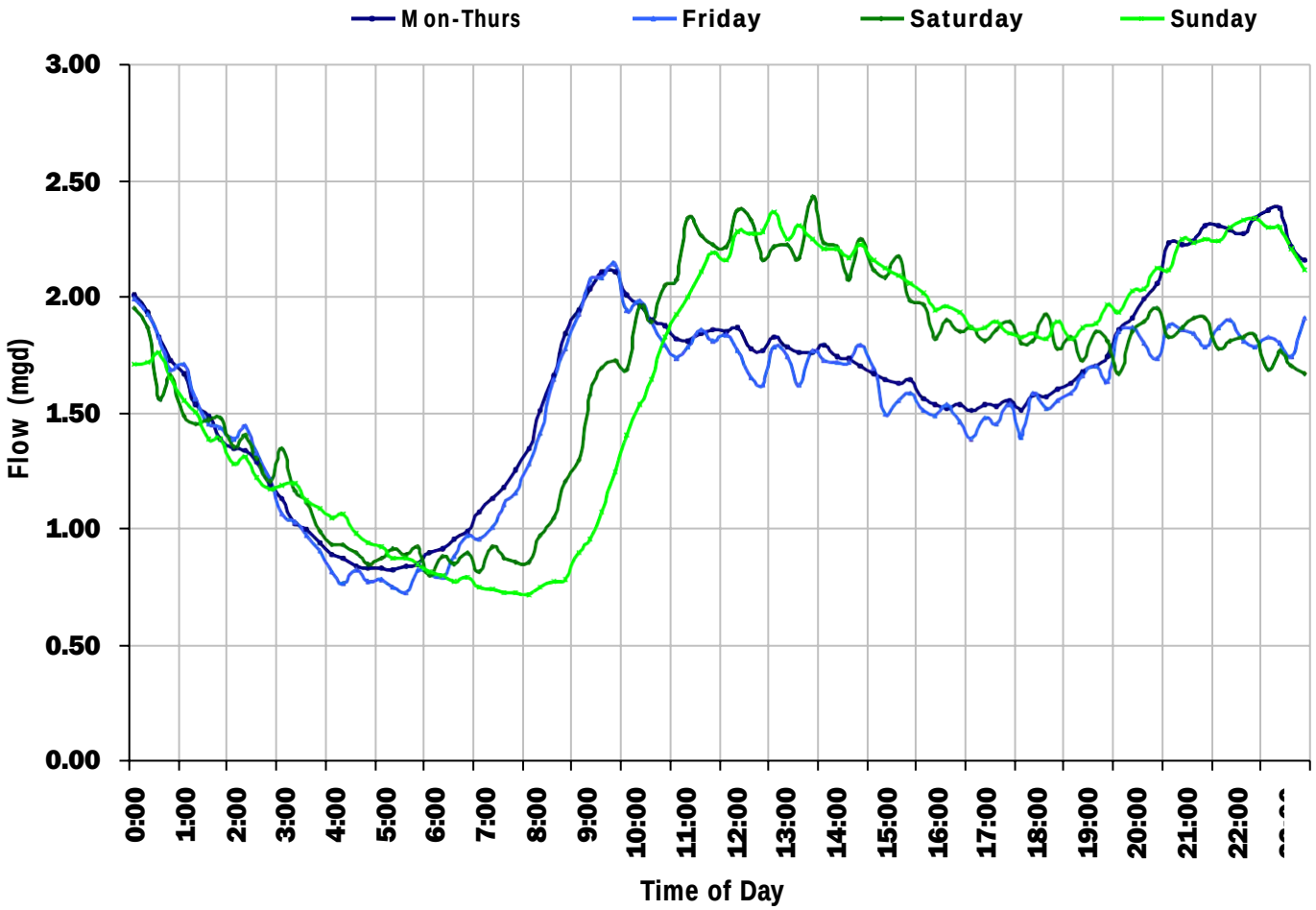
Flow Summary: 2/28/2018 to 3/29/2018

Total Period Rainfall: 1.43 inches Avg Flow: 1.610 mgd Peak Flow: 3.581 mgd Min Flow: 0.578 mgd



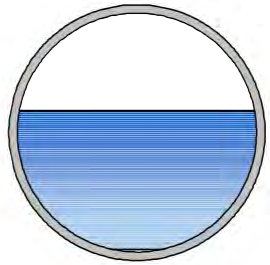


TC-01
Average Dry Weather Flow Hydrographs



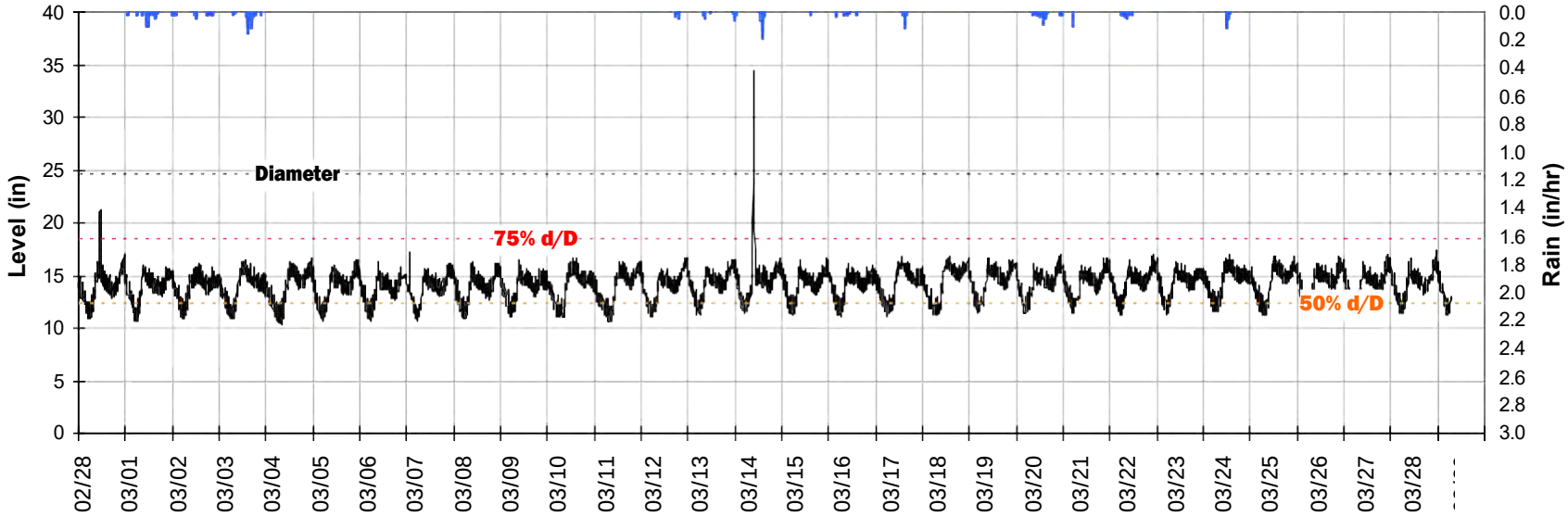
ADWF:

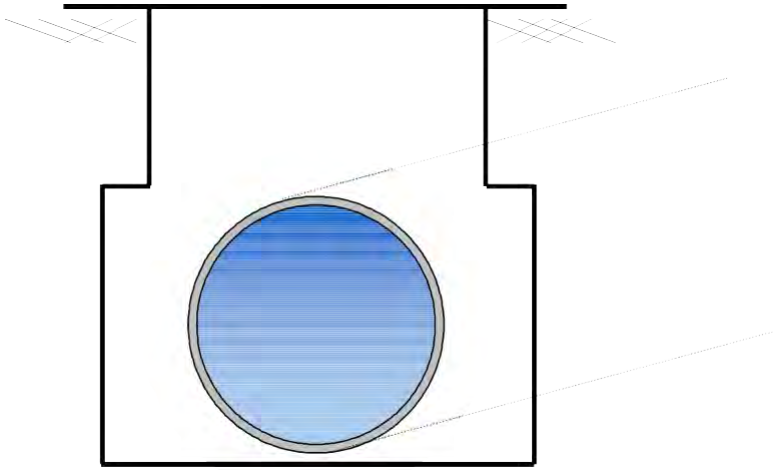
1.618 *mgd*



TC-01
Site Capacity and Surcharge Summary

Realtime Flow Levels with Rainfall Data over Monitoring Period





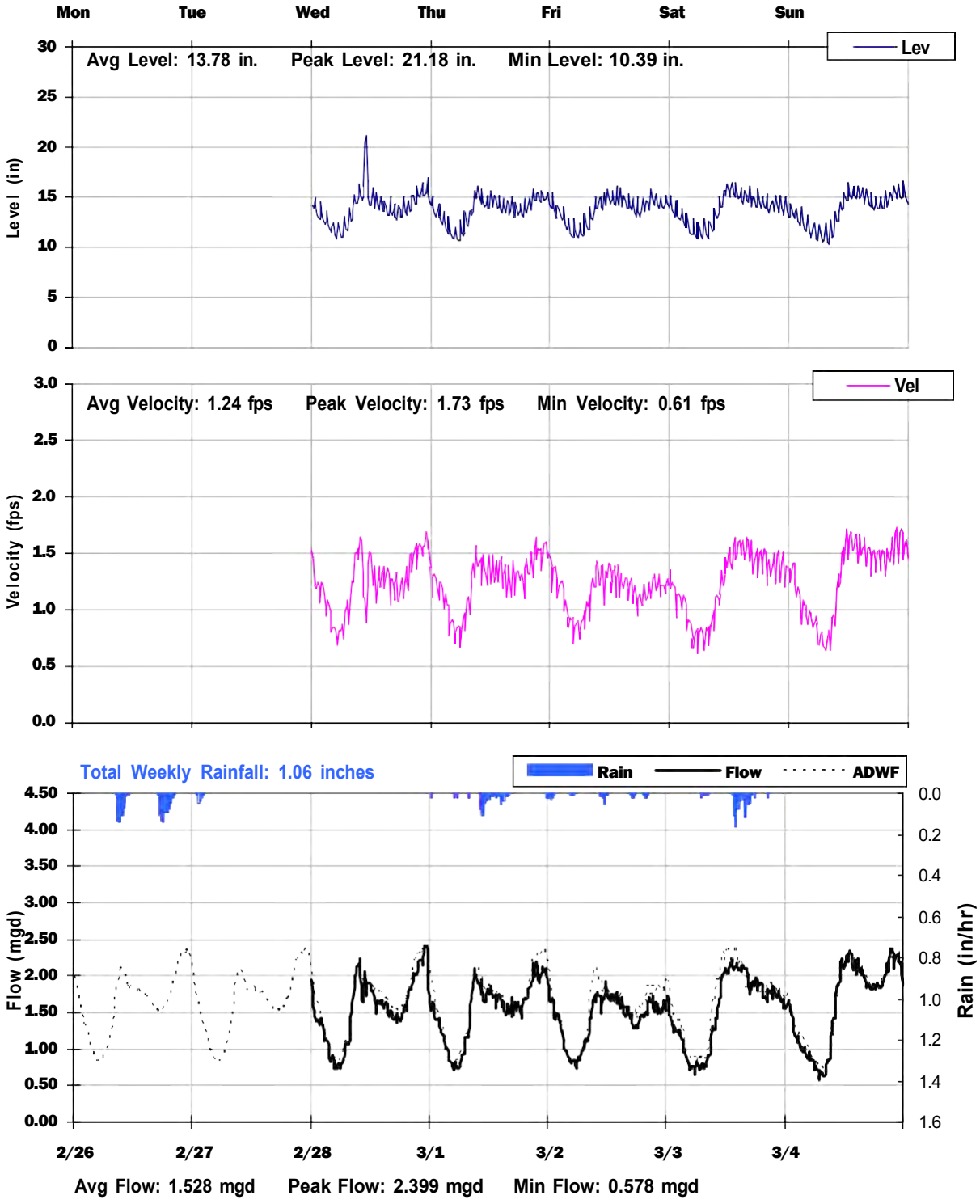
Pipe Diameter:	**24.5**	***inches***
Peak Measured Level:	**34.4**	***inches***
Peak d/D Ratio:	**1.41**	

Surcharged 9.9 inches over crown

TC-01

Weekly Level, Velocity and Flow Hydrographs

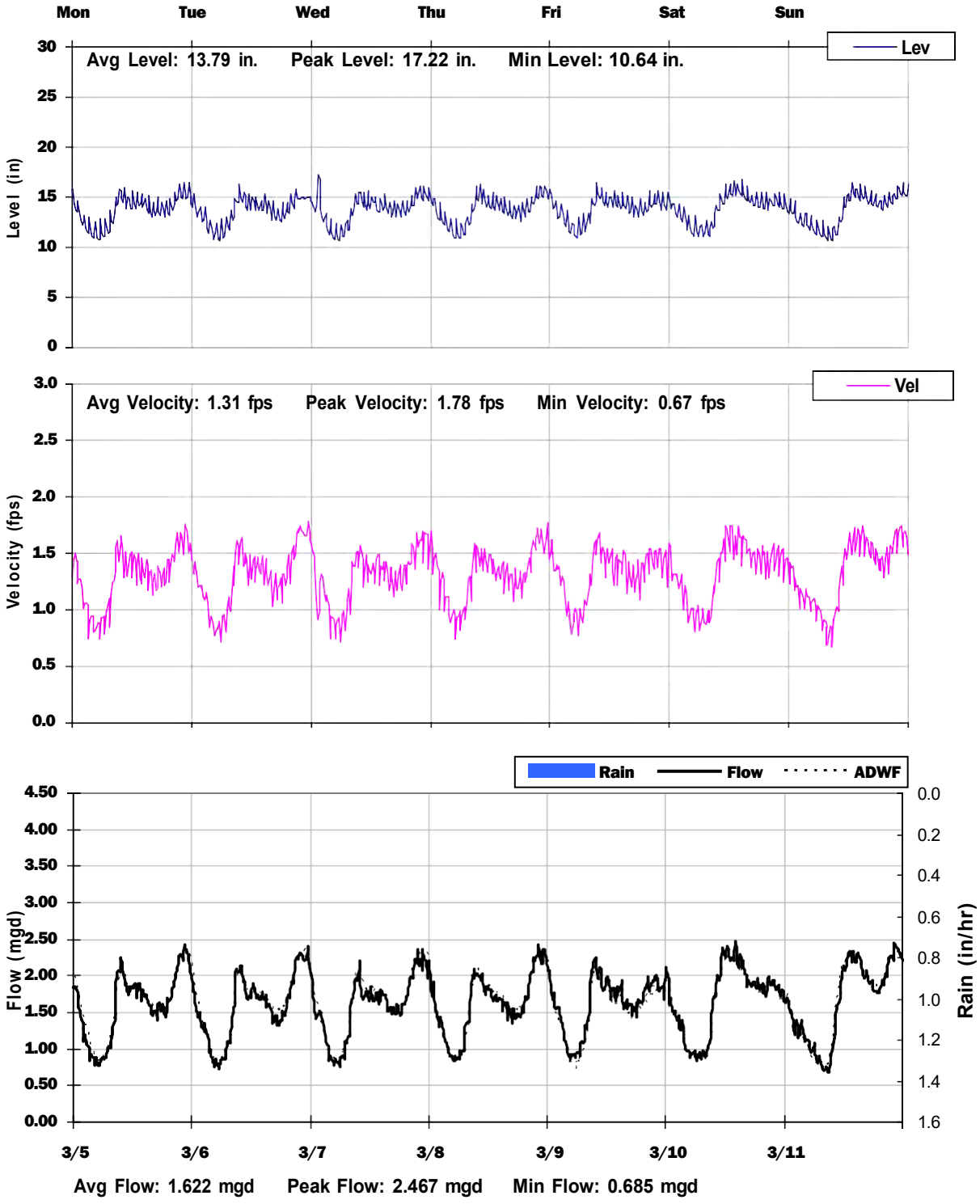
2/26/2018 to 3/5/2018



TC-01

Weekly Level, Velocity and Flow Hydrographs

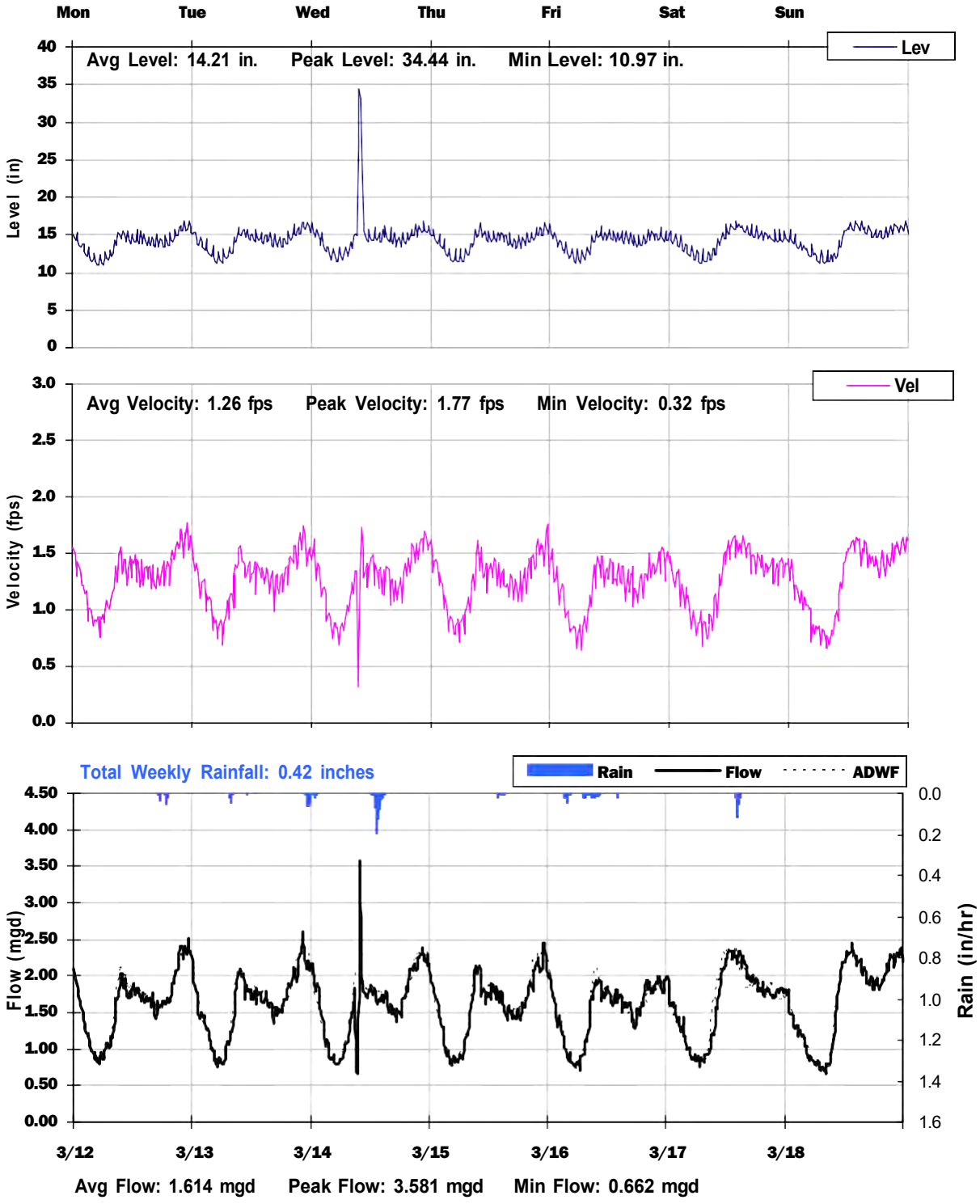
3/5/2018 to 3/12/2018



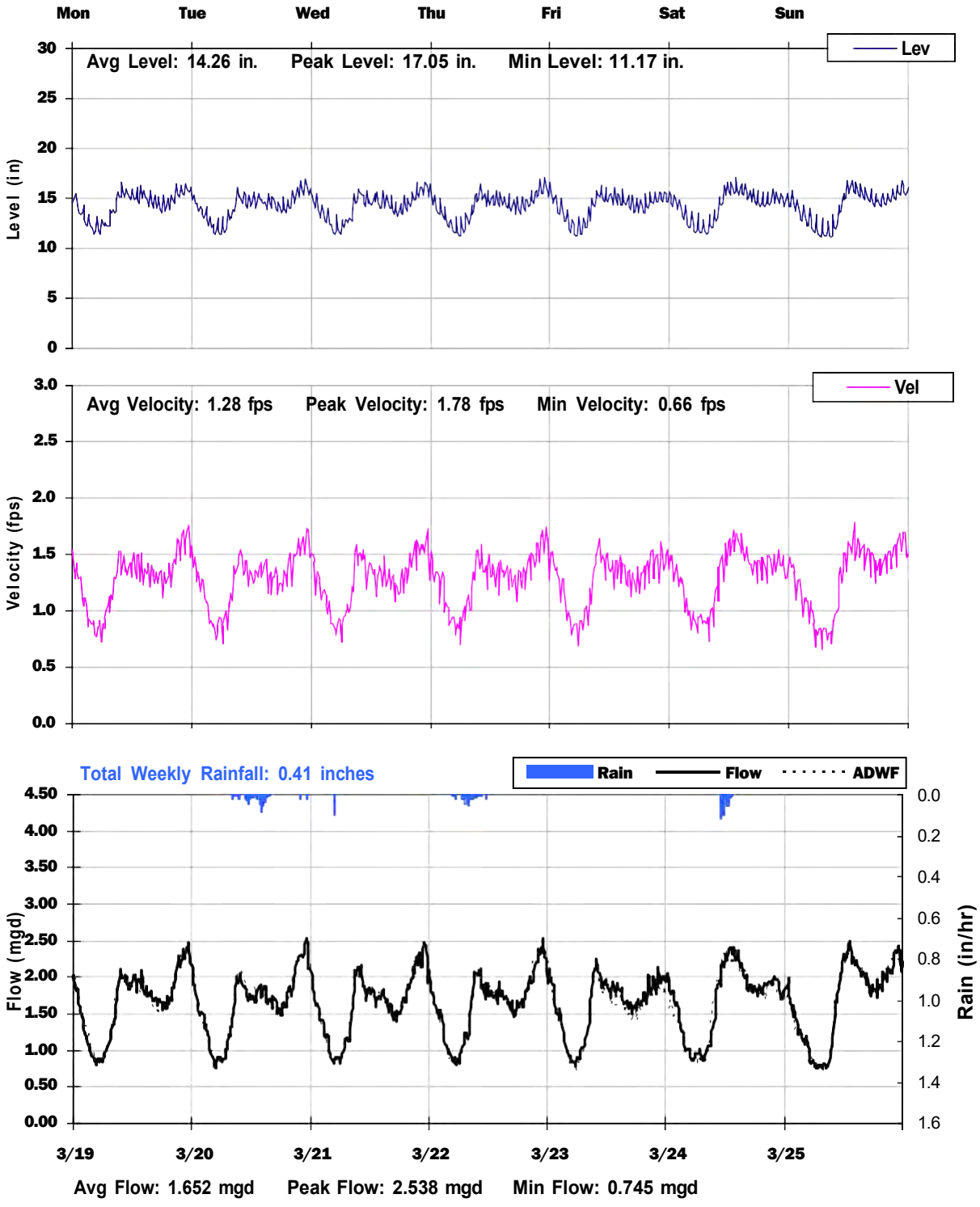
TC-01

Weekly Level, Velocity and Flow Hydrographs

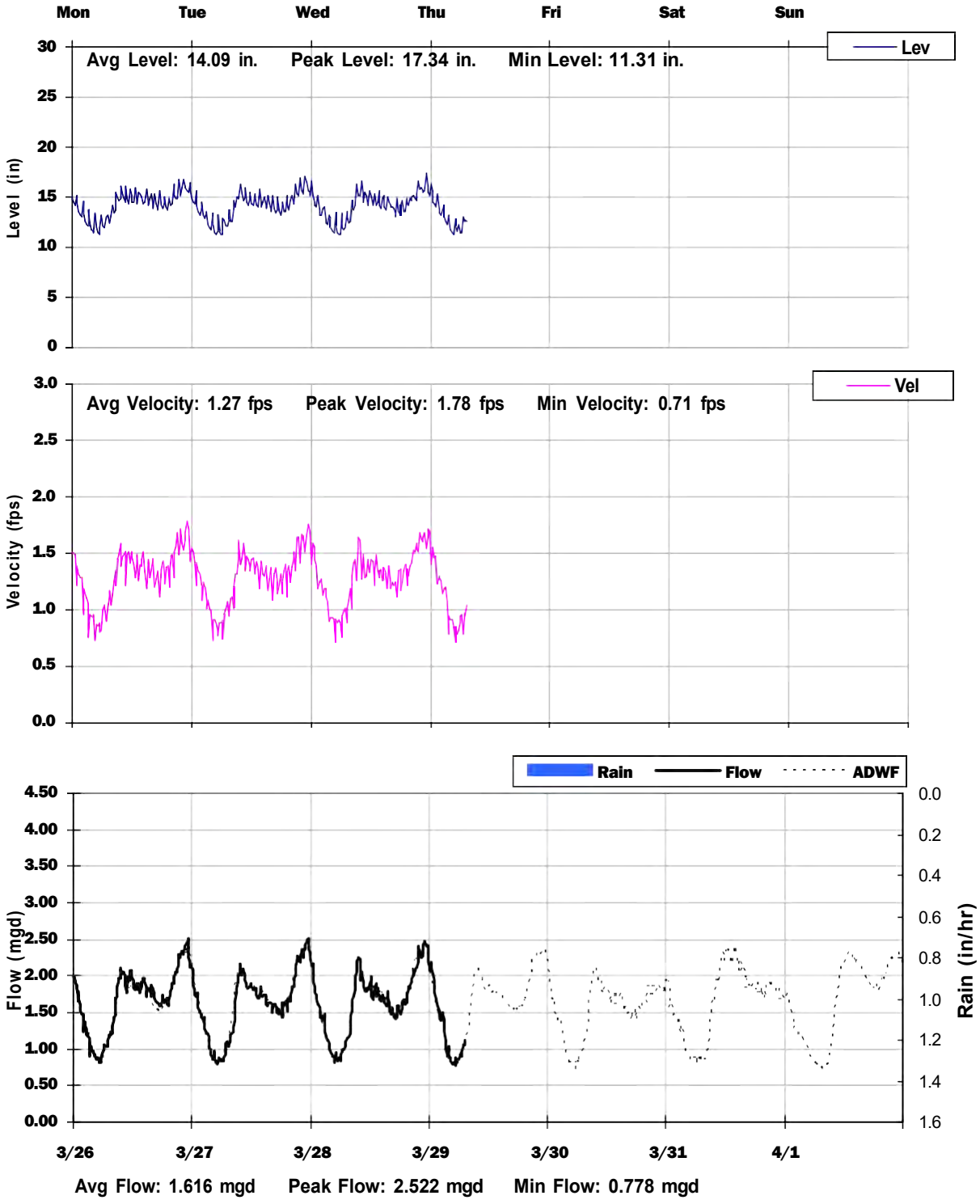
3/12/2018 to 3/19/2018



TC-01
Weekly Level, Velocity and Flow Hydrographs
3/19/2018 to 3/26/2018



TC-01
Weekly Level, Velocity and Flow Hydrographs
3/26/2018 to 4/2/2018

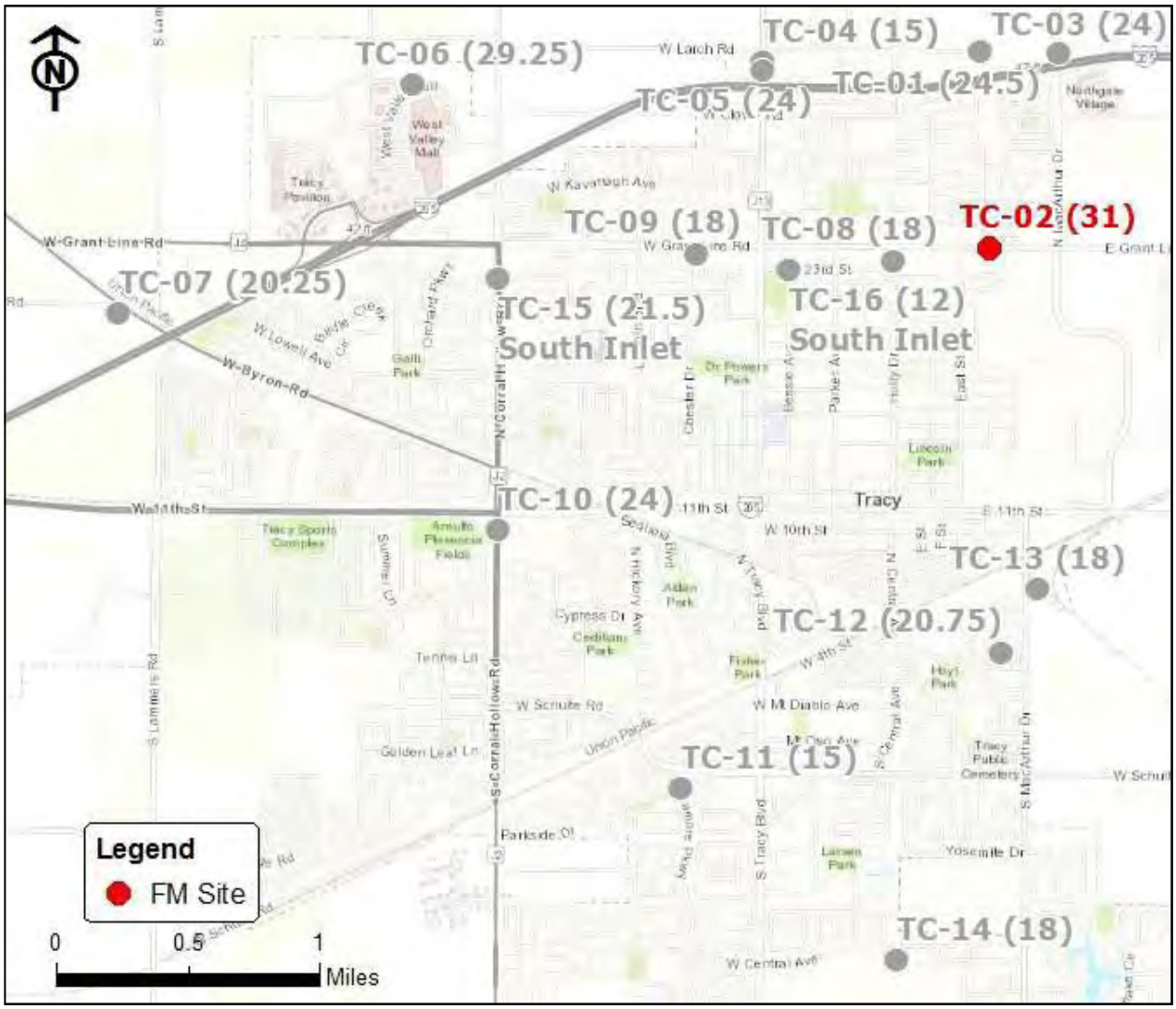


TC-01
City of Tracy, California
Sanitary Sewer Flow Monitoring
February 26 - April 08, 2020

Monitoring Site: **TC-02**

Location: **324 Grant Line Road, West of Colony Drive**

Data Summary Report



Vicinity Map: TC-02

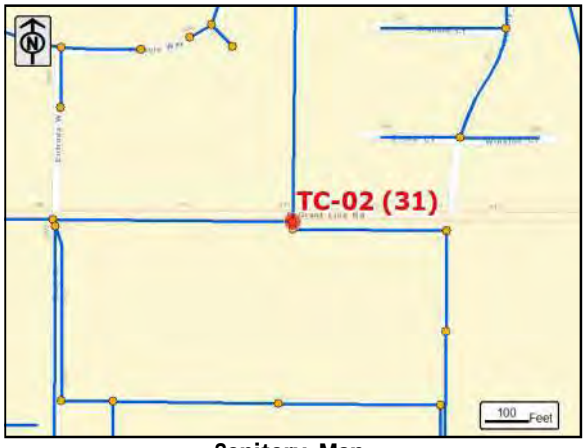
TC-02

Site Information

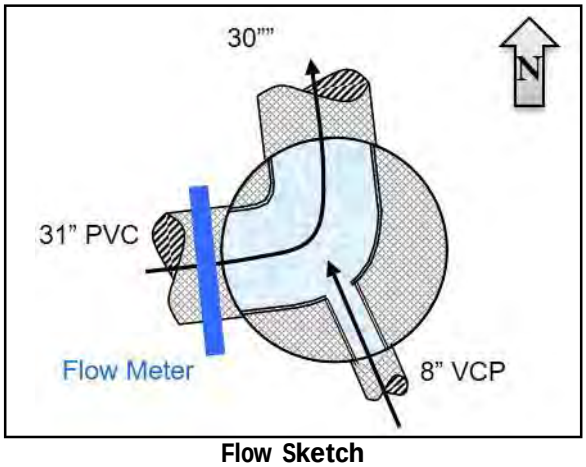
Location:	**324 Grant Line Road, West of Colony Drive**
City Manhole:	
Coordinates:	**121.4193° W, 37.7542° N**
Rim Elevation (Earth):	**33 feet**
Pipe Diameter:	**29.75 inches**
ADWF:	**1.109 mgd**
Peak Measured Flow:	**1.842 mgd**



Satellite Map



Sanitary Map



Flow Sketch



Street View



Plan View

TC-02

Additional Site Photos

Effluent Pipe



Monitored West Influent Pipe



TC-02

Additional Site Photos

South Lateral

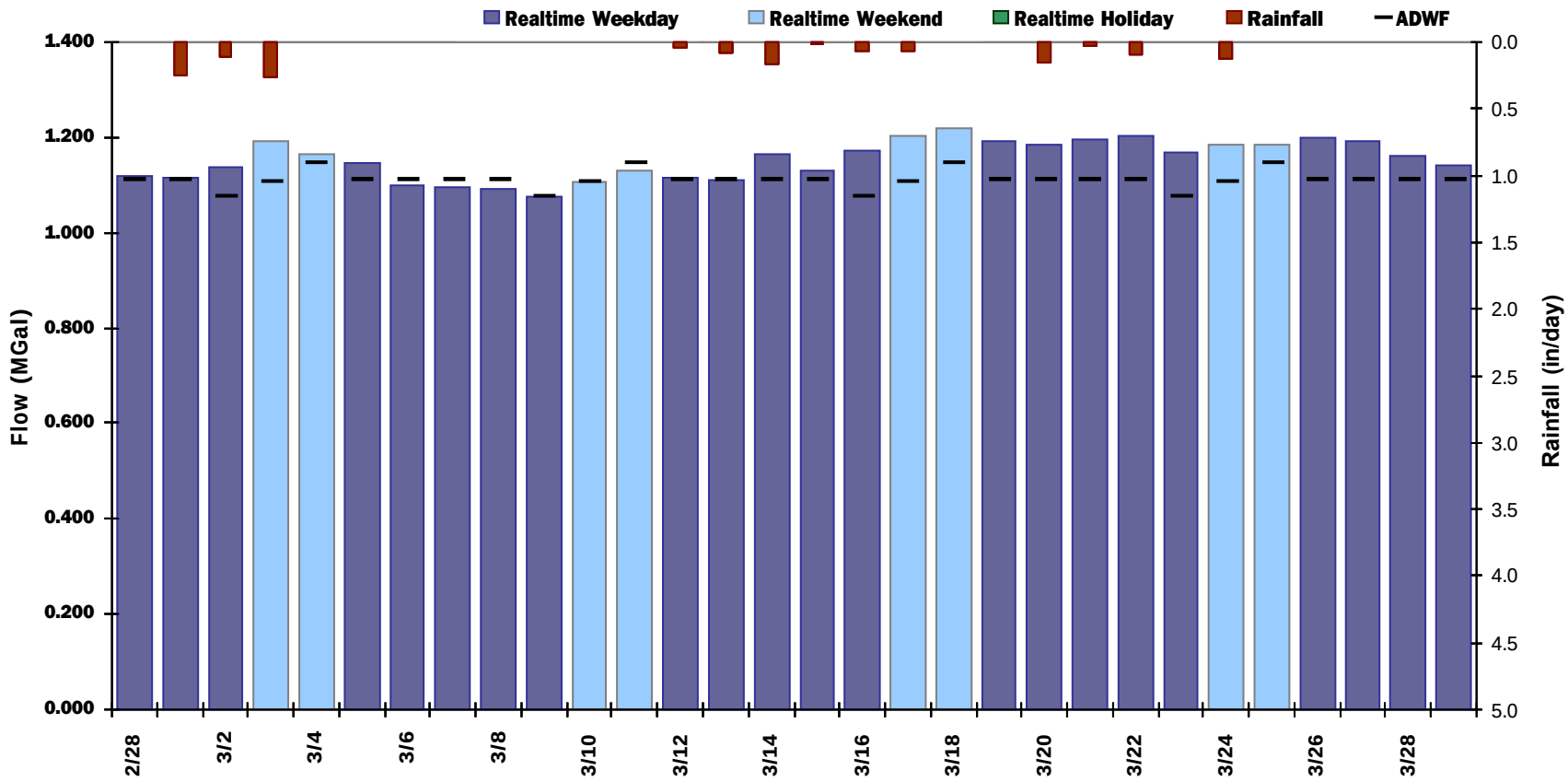


TC-02

Period Flow Summary: Daily Flow Totals

Avg Period Flow: 1.153 MGal **Peak Daily Flow: 1.220 MGal** **Min Daily Flow: 1.078 MGal**

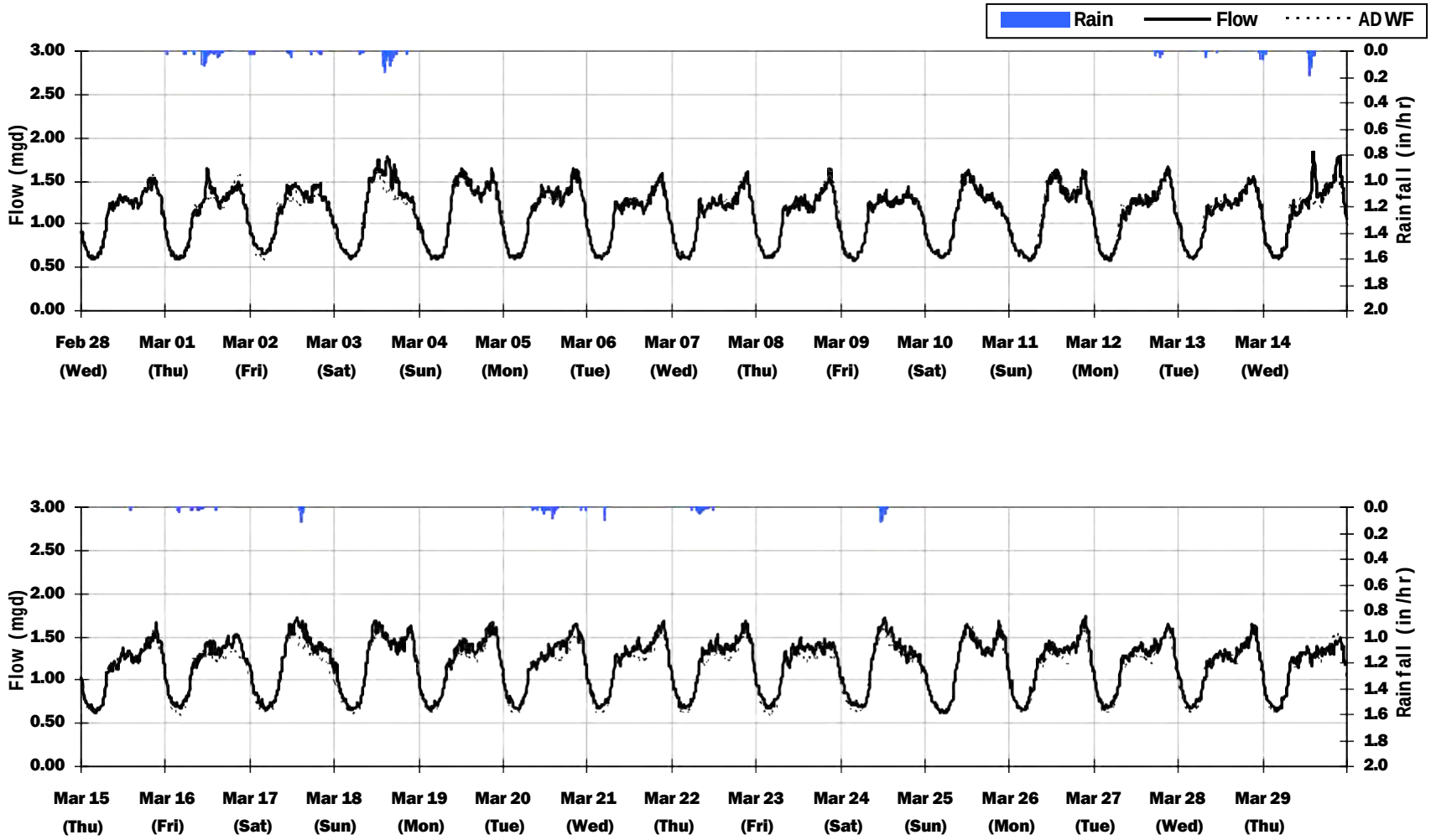
Total Period Rainfall: 1.43 inches



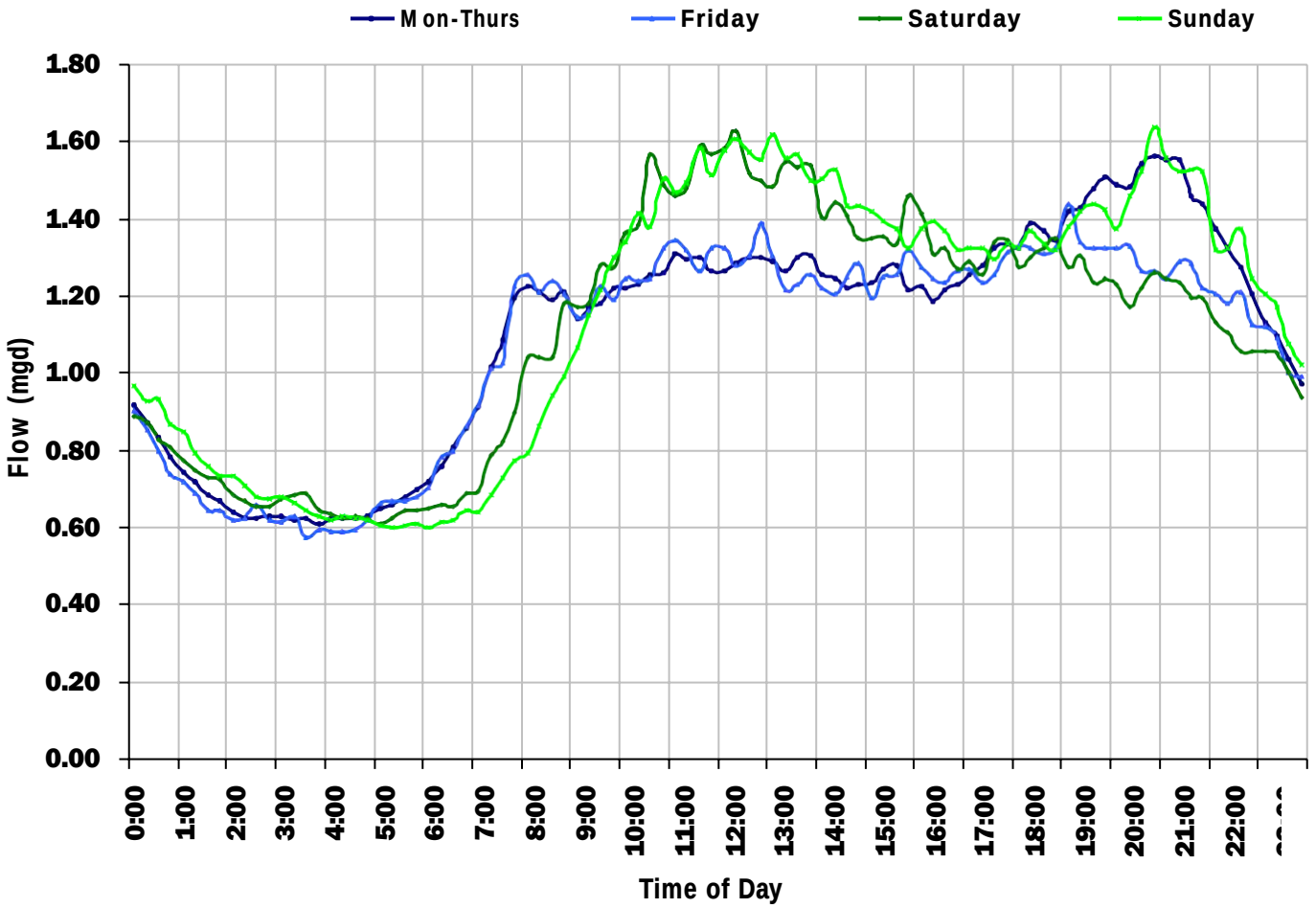
TC-02

Flow Summary: 2/28/2018 to 3/29/2018

Total Period Rainfall: 1.43 inches Avg Flow: 1.153 mgd Peak Flow: 1.842 mgd Min Flow: 0.577 mgd

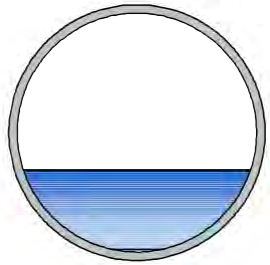


TC-02
Average Dry Weather Flow Hydrographs



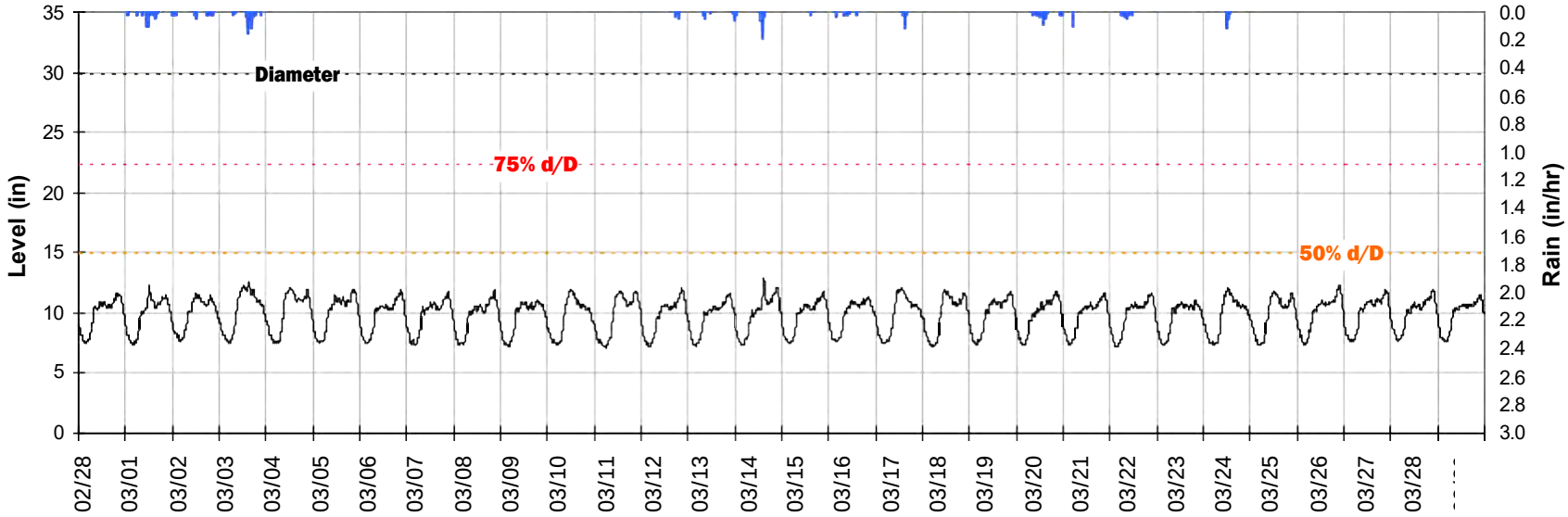
ADWF:

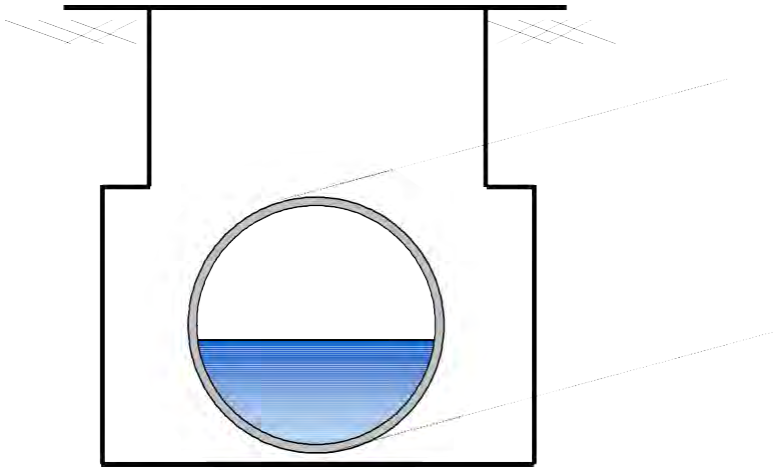
1.109 *mgd*



TC-02
Site Capacity and Surcharge Summary

Realtime Flow Levels with Rainfall Data over Monitoring Period



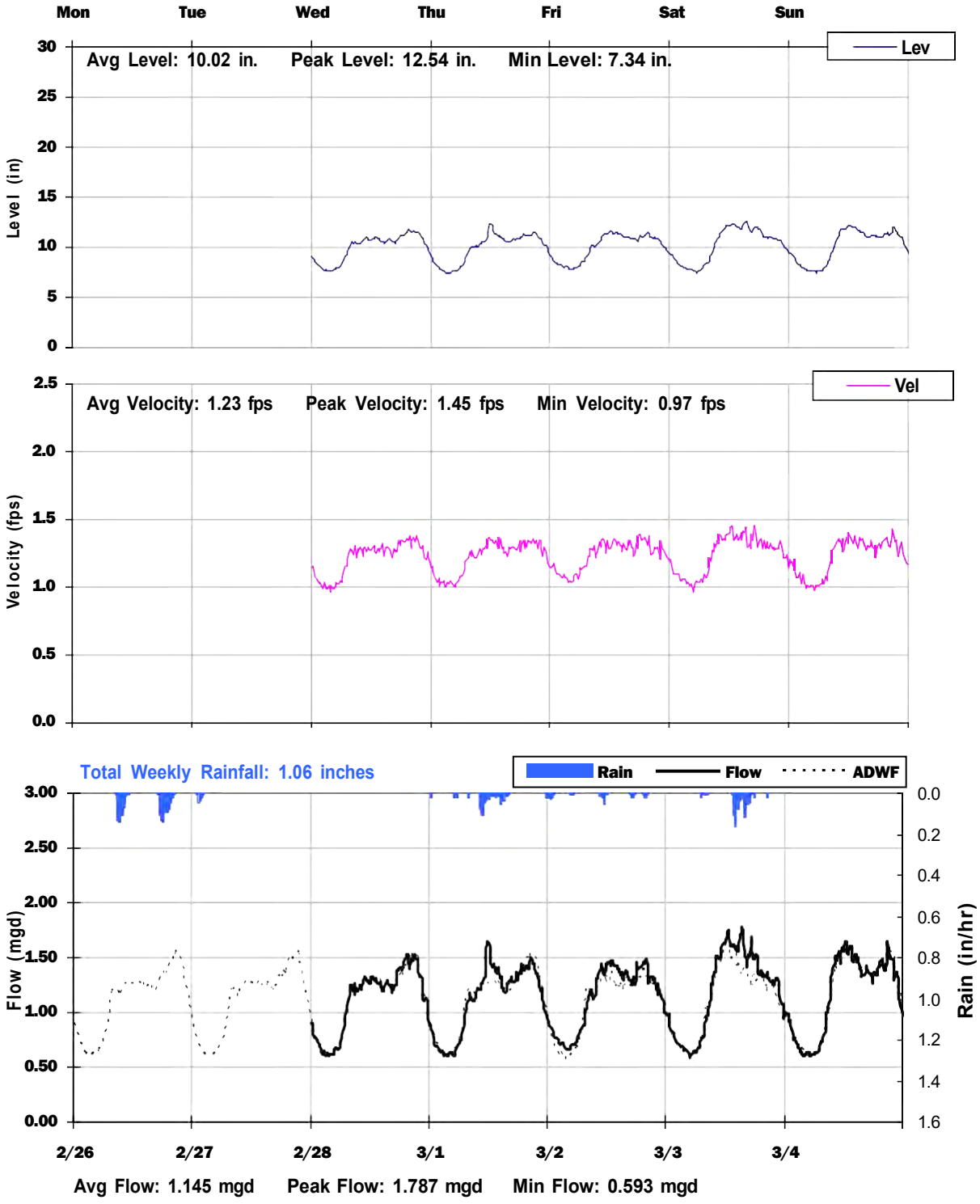


Pipe Diameter:	**29.8**	***inches***
Peak Measured Level:	**12.9**	***inches***
Peak d/D Ratio:	**0.43**	

TC-02

Weekly Level, Velocity and Flow Hydrographs

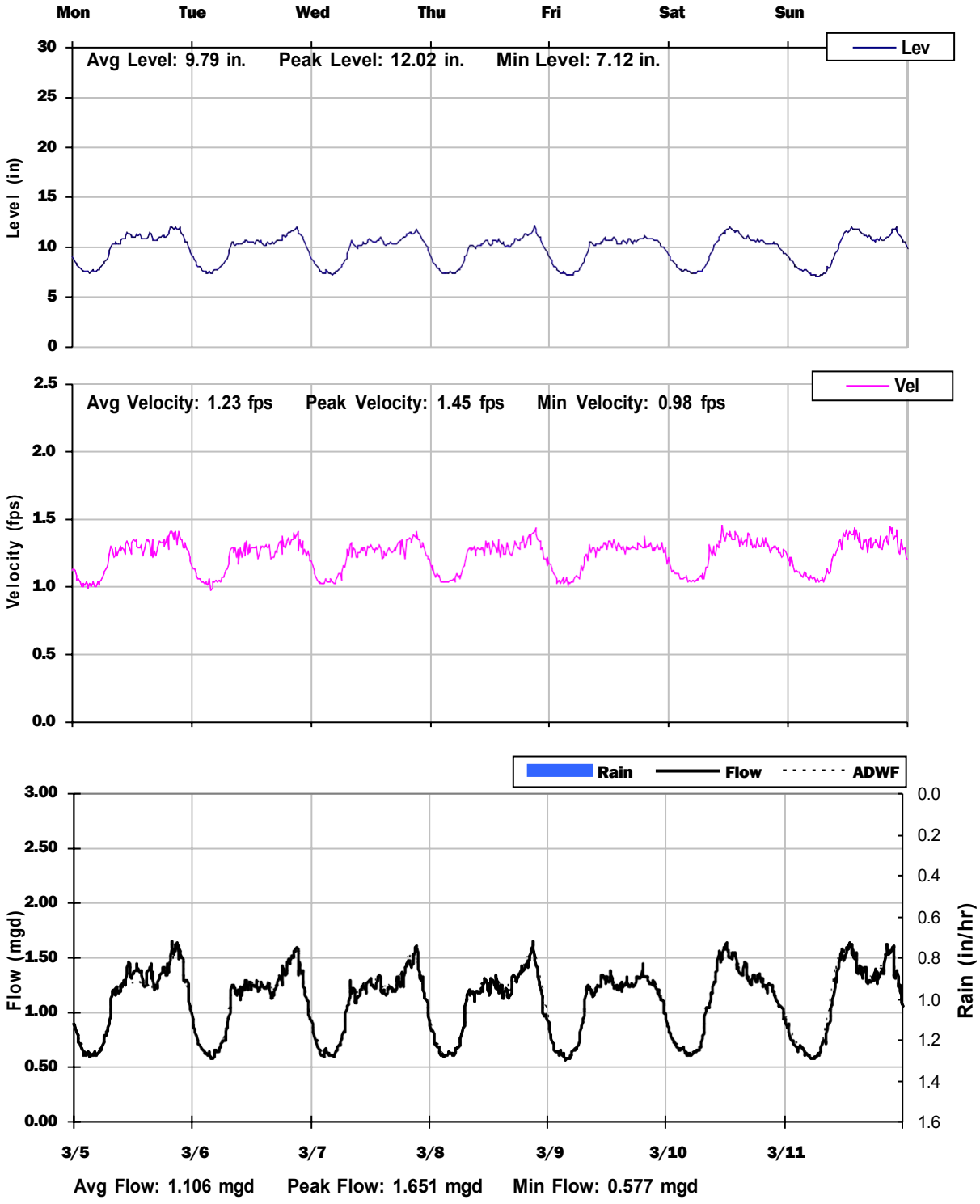
2/26/2018 to 3/5/2018



TC-02

Weekly Level, Velocity and Flow Hydrographs

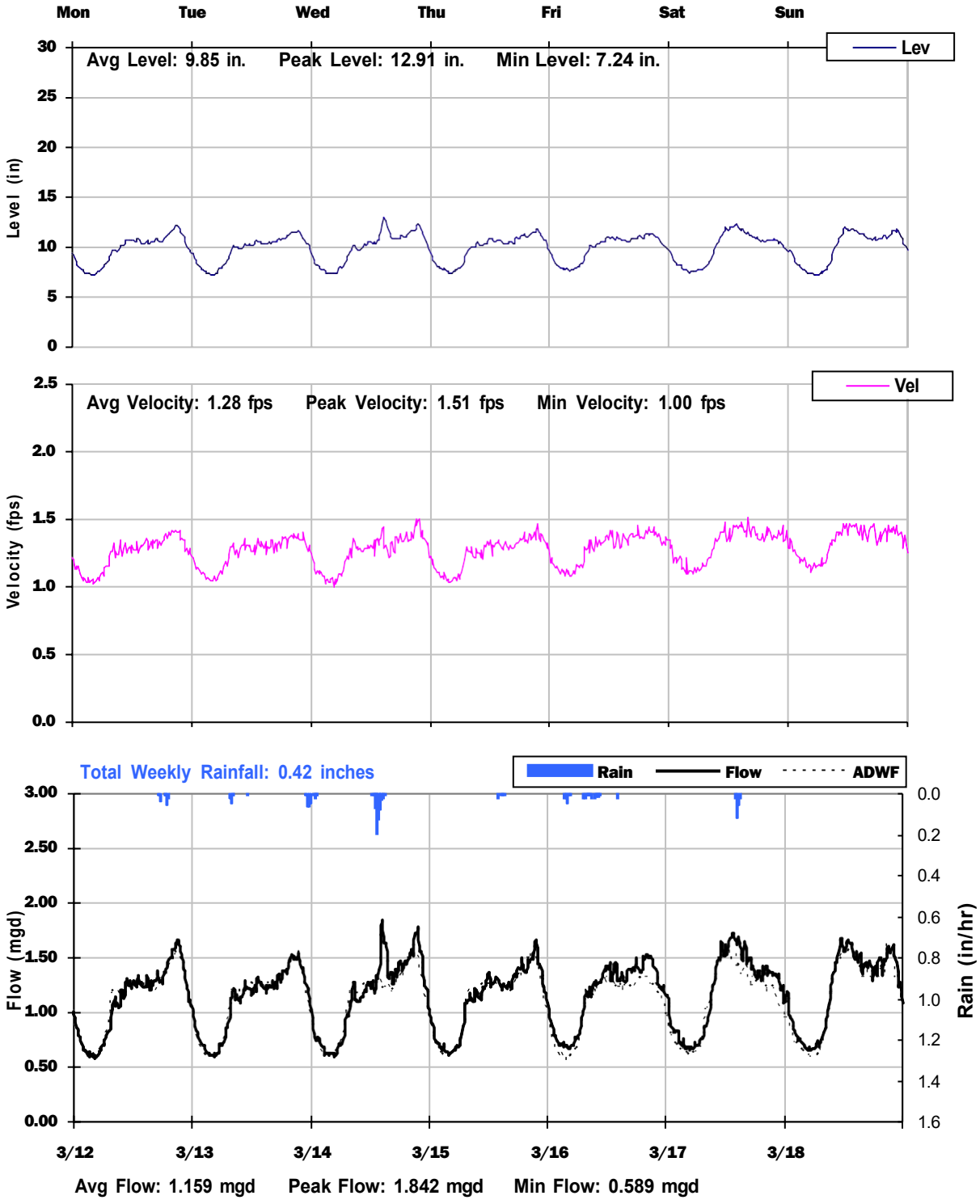
3/5/2018 to 3/12/2018



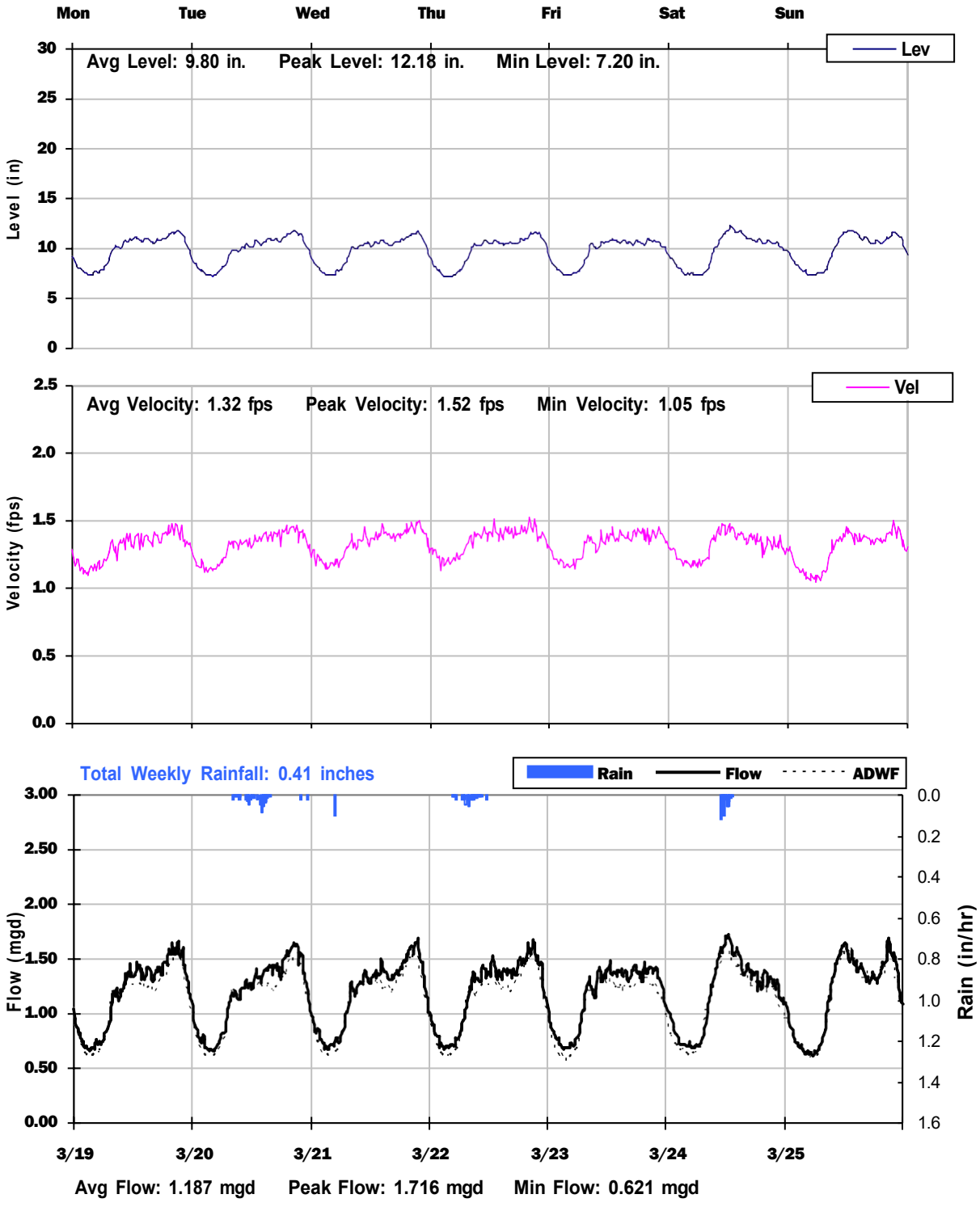
TC-02

Weekly Level, Velocity and Flow Hydrographs

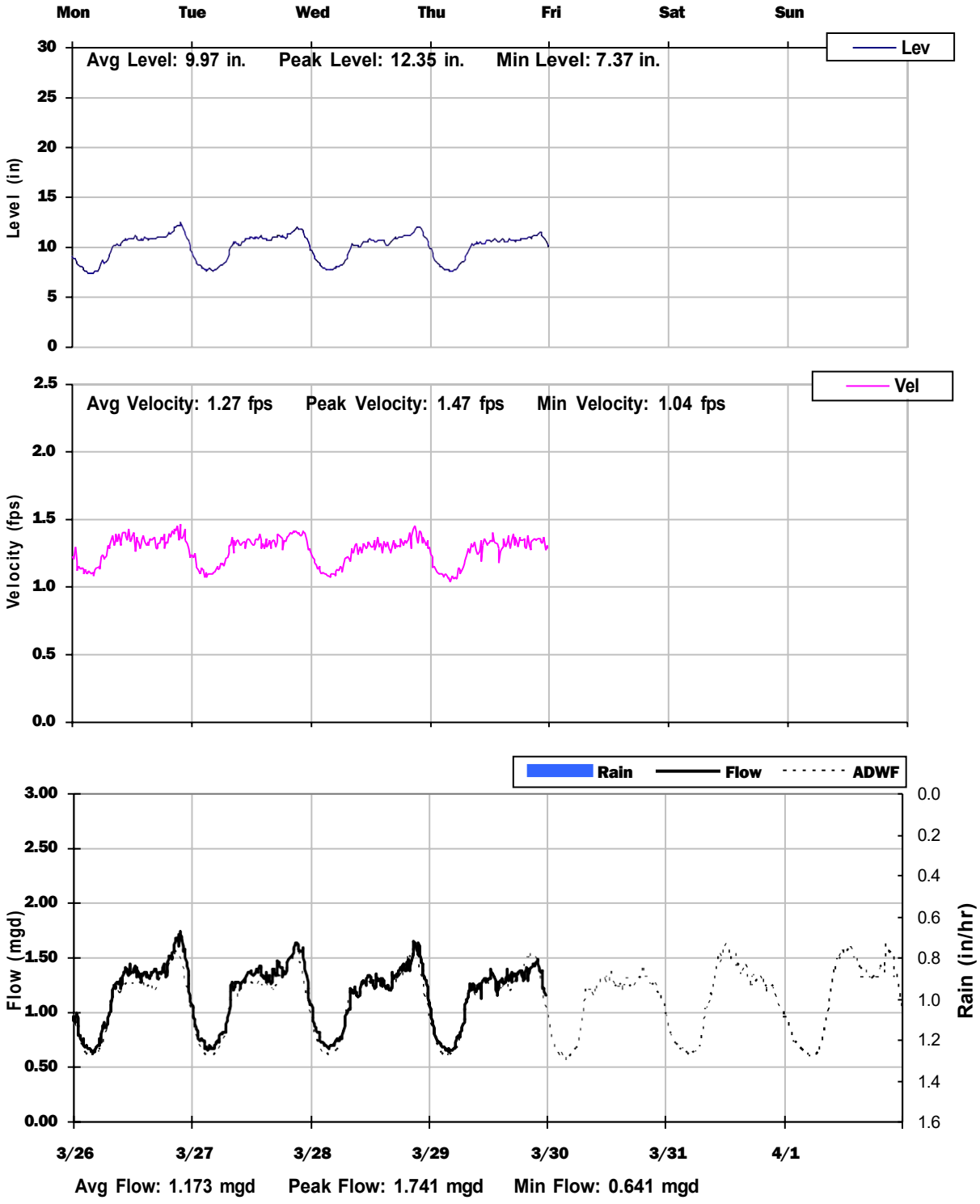
3/12/2018 to 3/19/2018



TC-02
Weekly Level, Velocity and Flow Hydrographs
3/19/2018 to 3/26/2018



TC-02
Weekly Level, Velocity and Flow Hydrographs
3/26/2018 to 4/2/2018



TC-02

City of Tracy, California

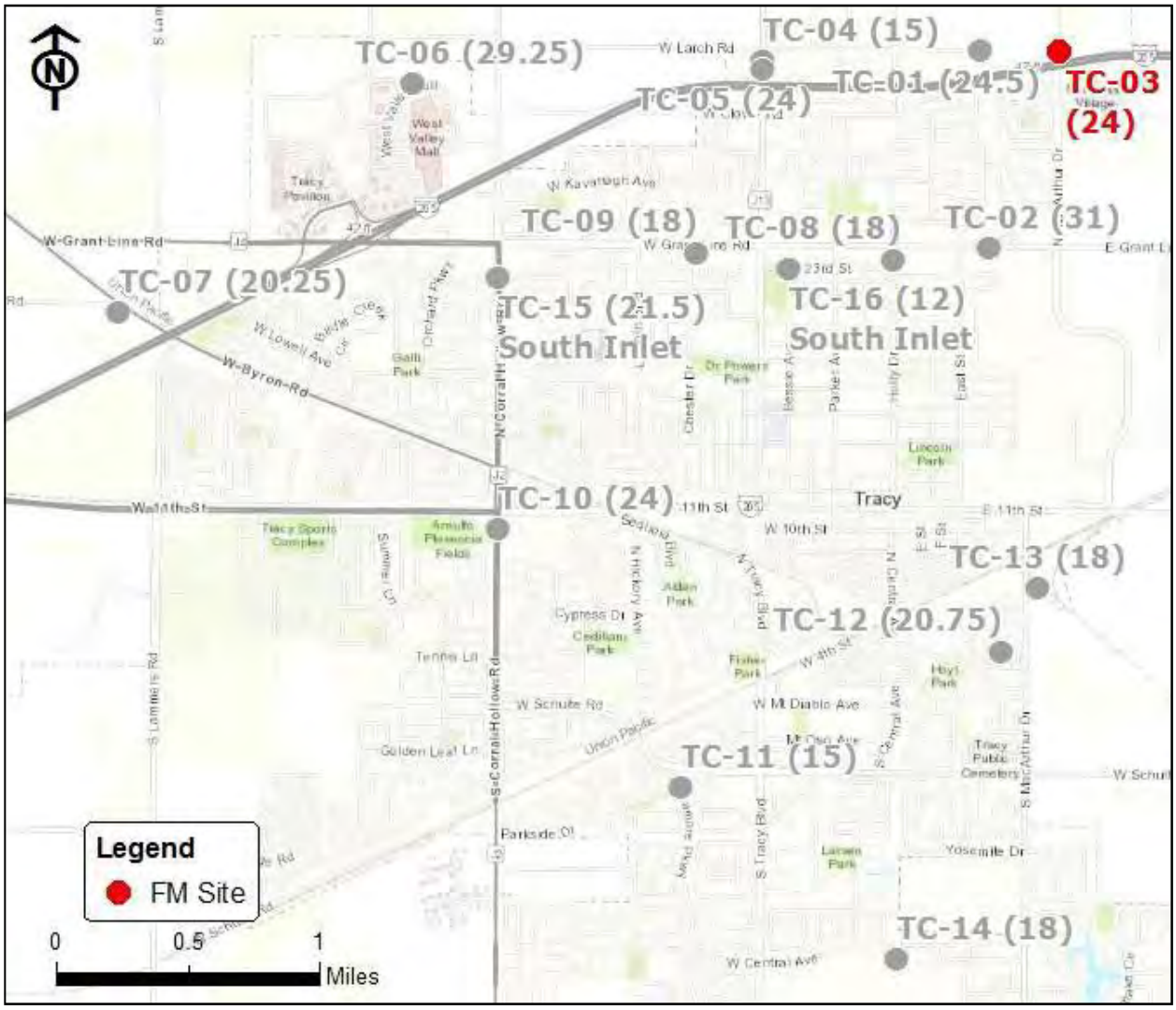
Sanitary Sewer Flow Monitoring

February 26 - April 08, 2020

Monitoring Site: **TC-03**

Location: **MacArthur Drive, approx 265 feet north of Hwy 205, near pump station entrance**

Data Summary Report



Vicinity Map: TC-03

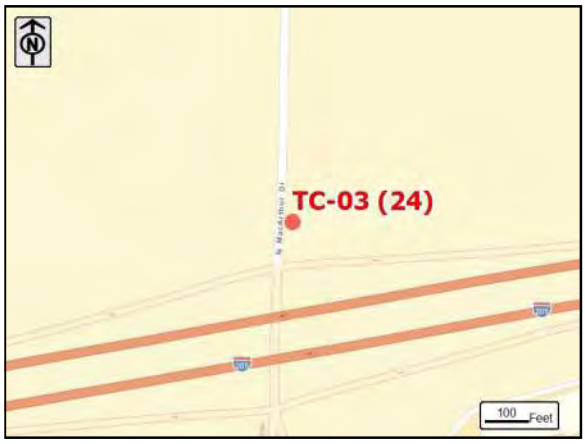
TC-03

Site Information

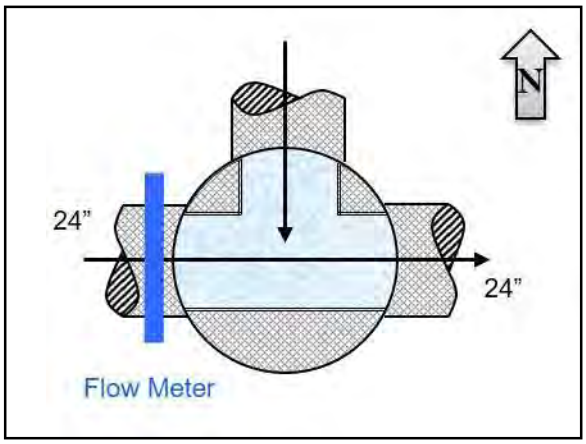
Location:	**MacArthur Drive, approx 265 feet north of Hwy 205, near pump station entrance**
City Manhole:	
Coordinates:	**121.4146° W, 37.7650° N**
Rim Elevation (Earth):	**21 feet**
Pipe Diameter:	**24 inches**
ADWF:	**0.270 mgd**
Peak Measured Flow:	**0.424 mgd**



Satellite Map



Sanitary Map



Flow Sketch



Street View



Plan View

TC-03

Additional Site Photos

Effluent Pipe



Monitored Influent Pipe

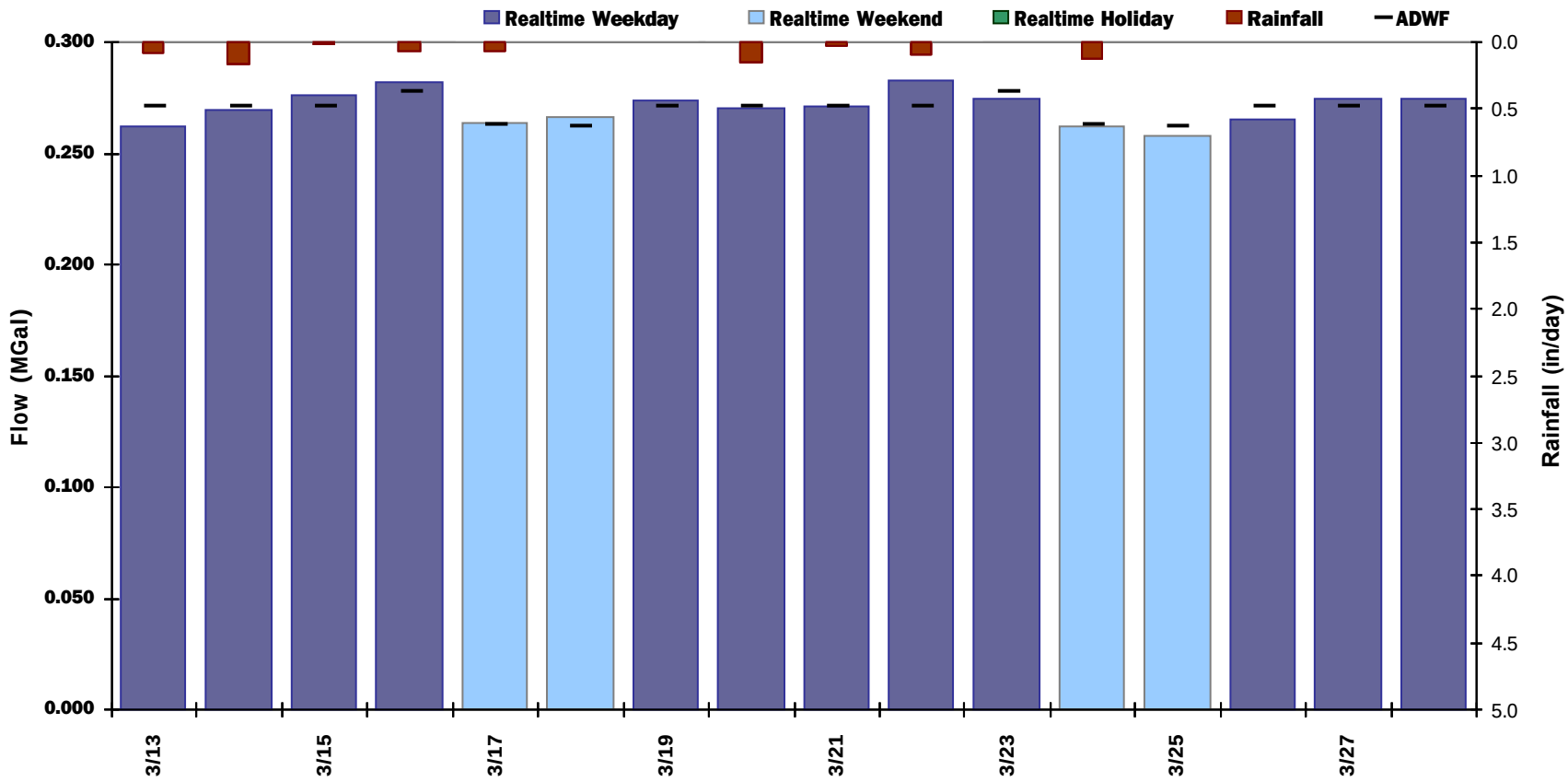


TC-03

Period Flow Summary: Daily Flow Totals

Avg Period Flow: 0.270 MGal Peak Daily Flow: 0.283 MGal Min Daily Flow: 0.258 MGal

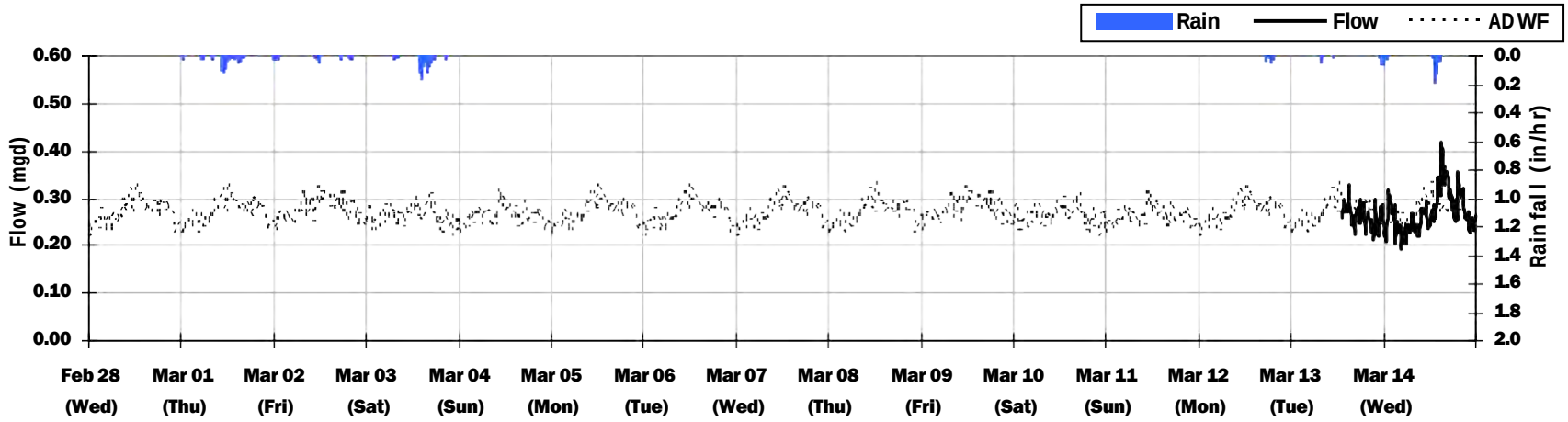
Total Period Rainfall: 0.77 inches

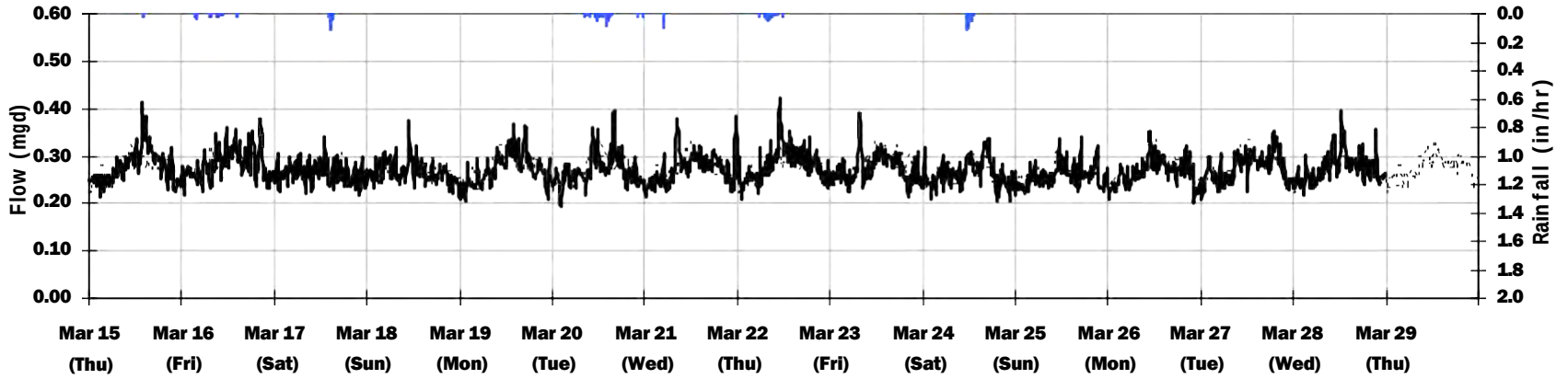


TC-03

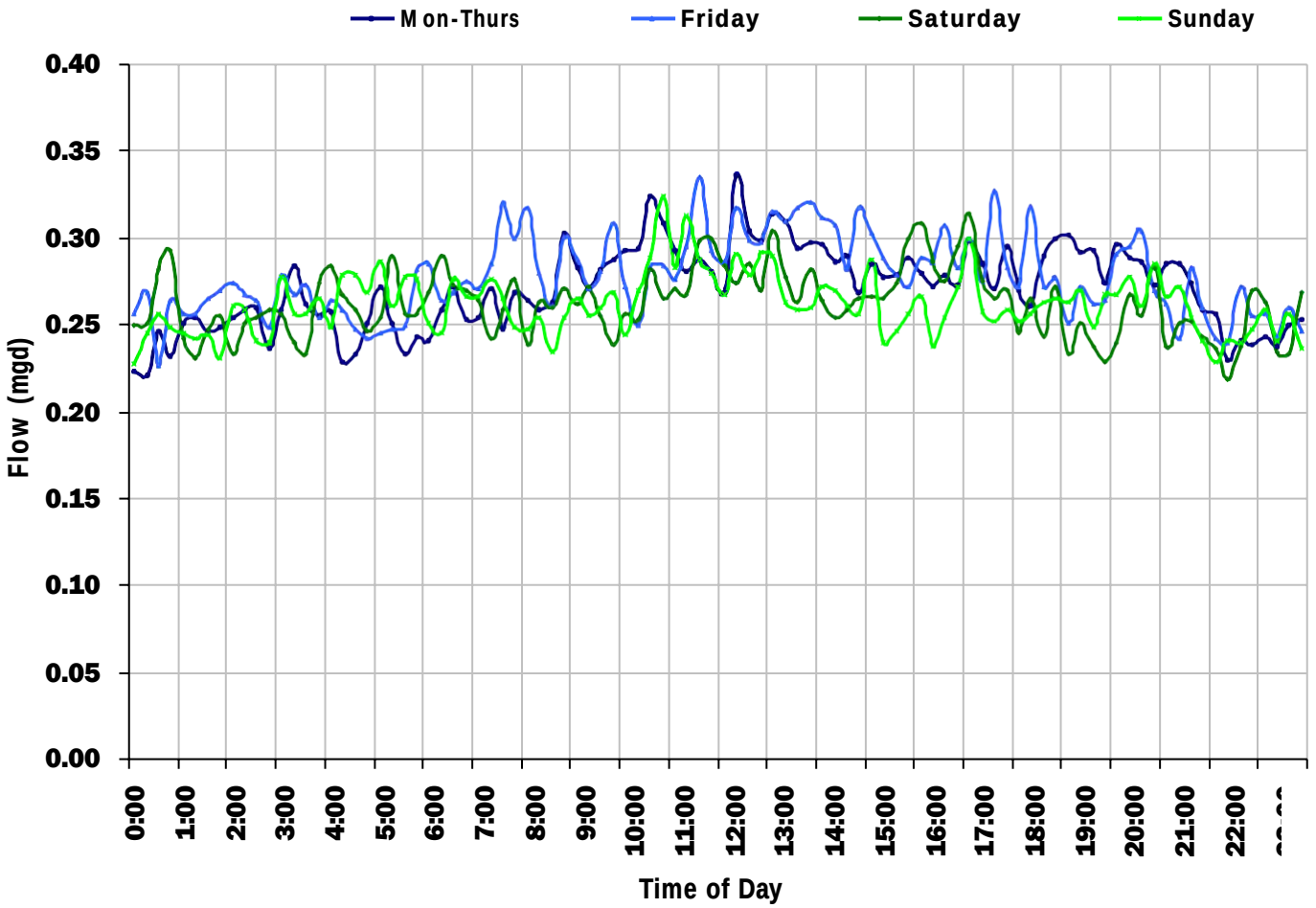
Flow Summary: 2/28/2018 to 3/29/2018

Total Period Rainfall: 1.43 inches Avg Flow: 0.271 mgd Peak Flow: 0.424 mgd Min Flow: 0.193 mgd



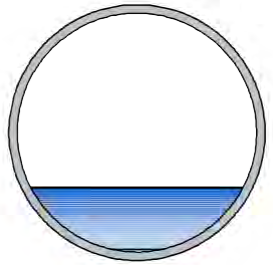


TC-03
Average Dry Weather Flow Hydrographs



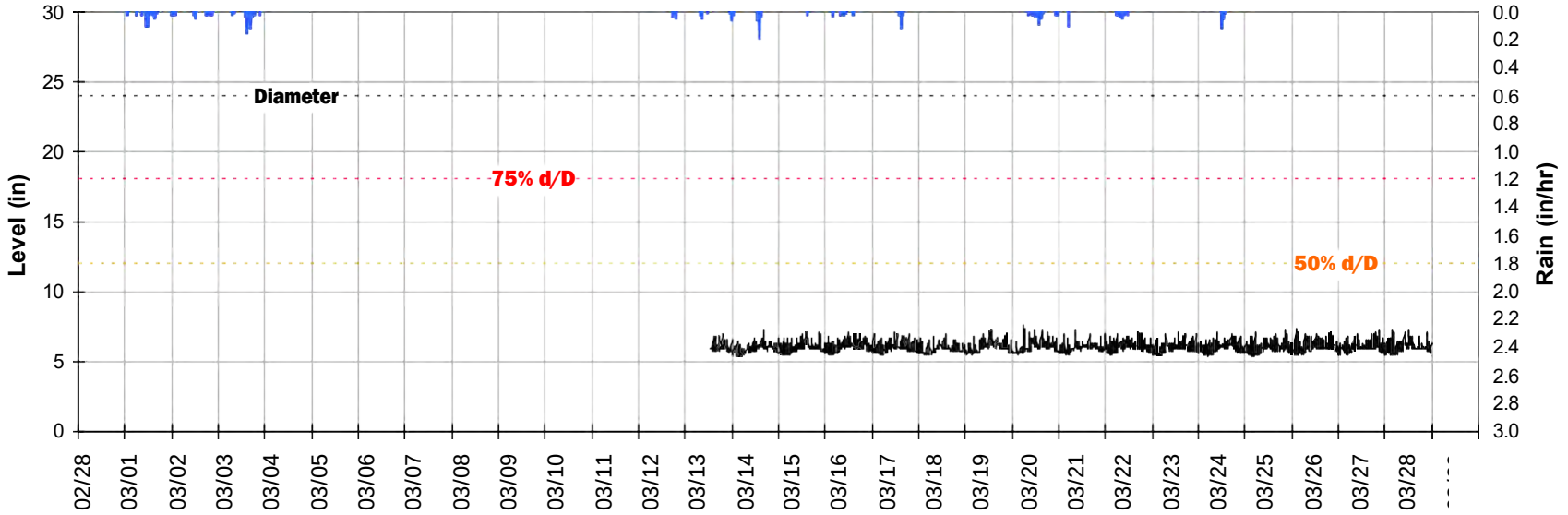
ADWF:

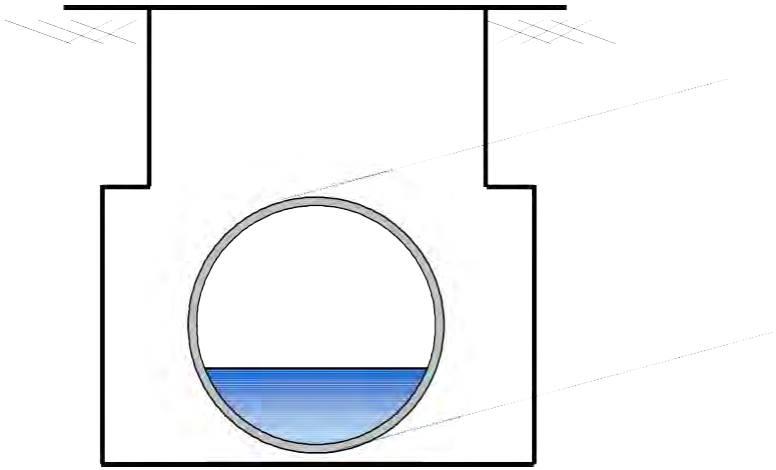
0.270 *mgd*



TC-03
Site Capacity and Surcharge Summary

Realtime Flow Levels with Rainfall Data over Monitoring Period



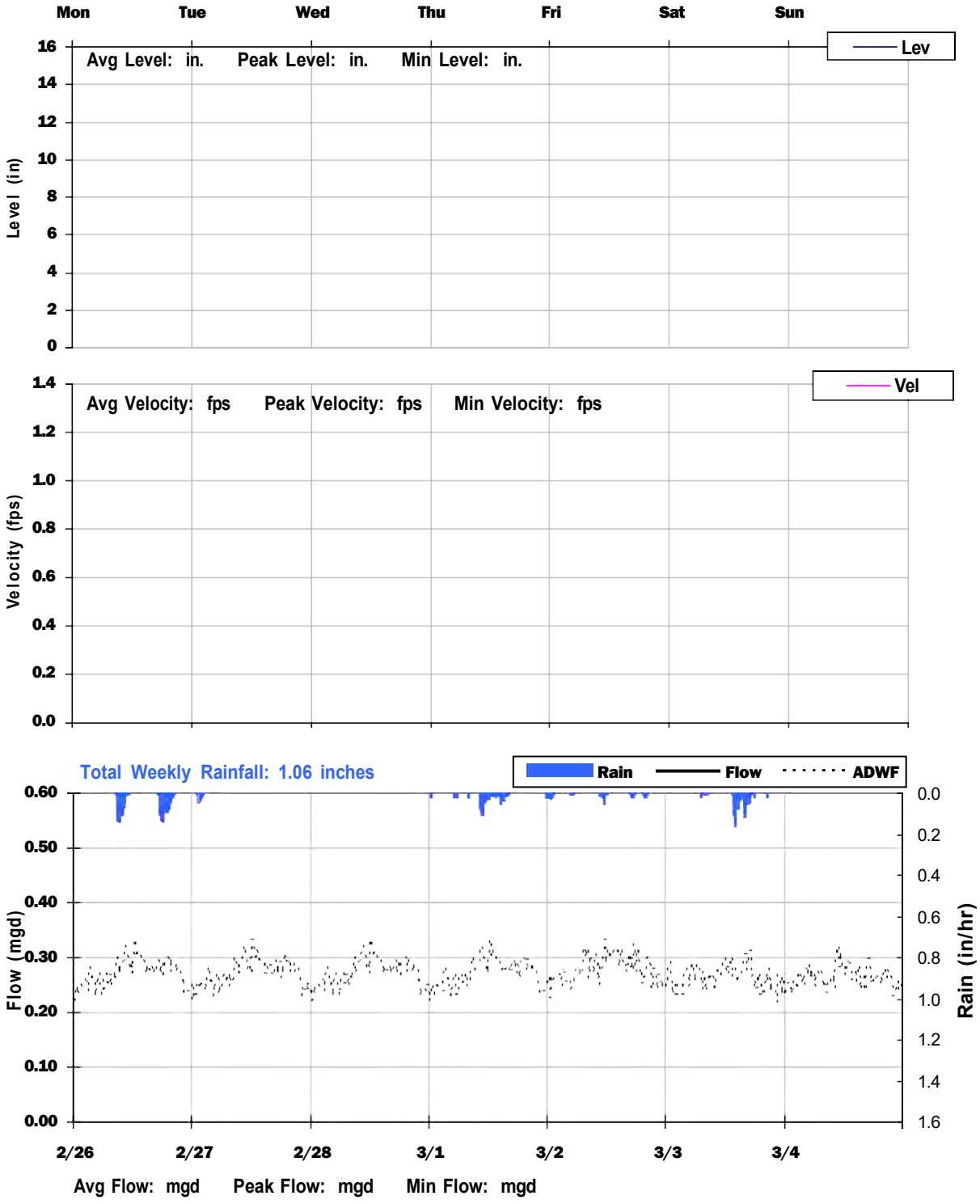


Pipe Diameter:	**24**	***inches***
Peak Measured Level:	**7.59**	***inches***
Peak d/D Ratio:	**0.32**	

TC-03

Weekly Level, Velocity and Flow Hydrographs

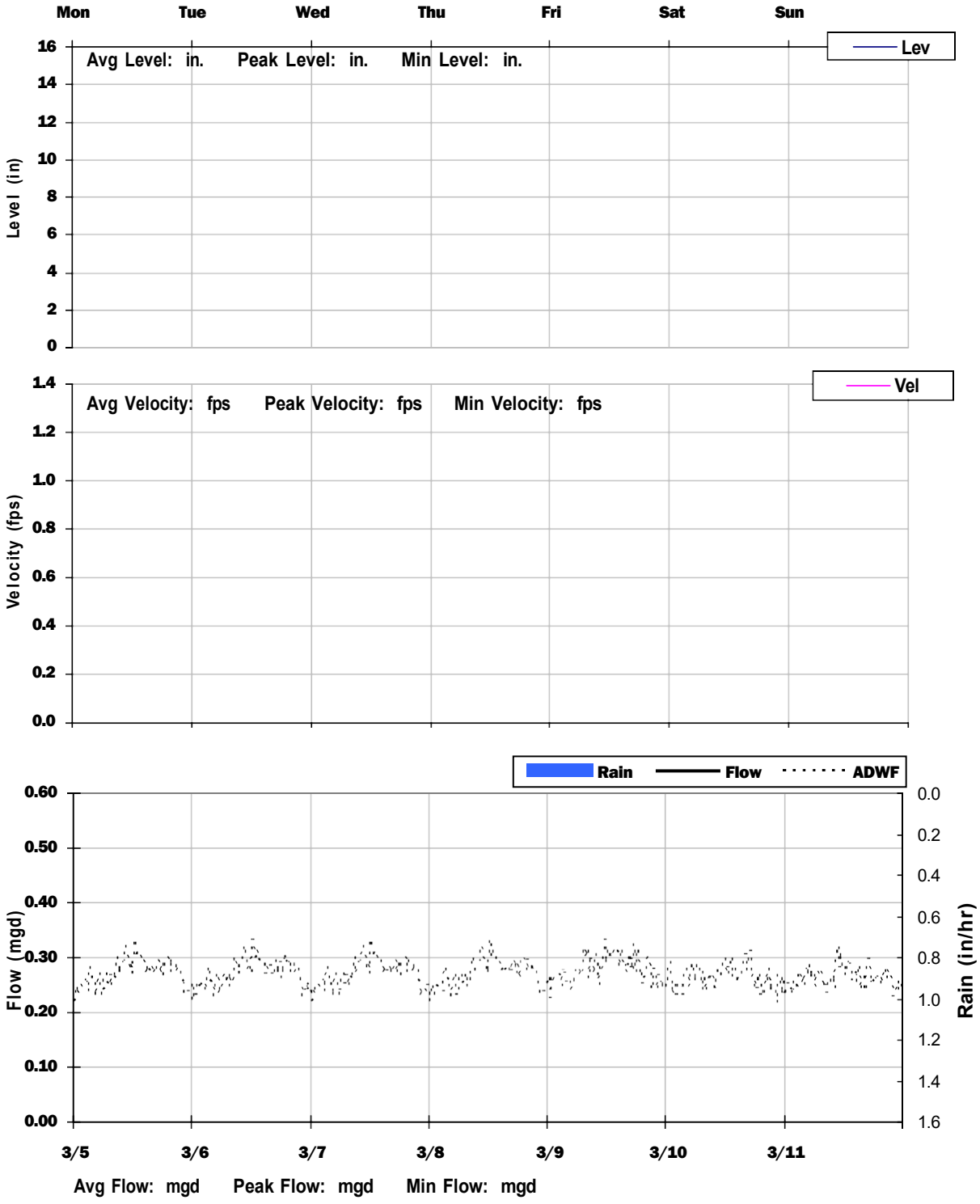
2/26/2018 to 3/5/2018



TC-03

Weekly Level, Velocity and Flow Hydrographs

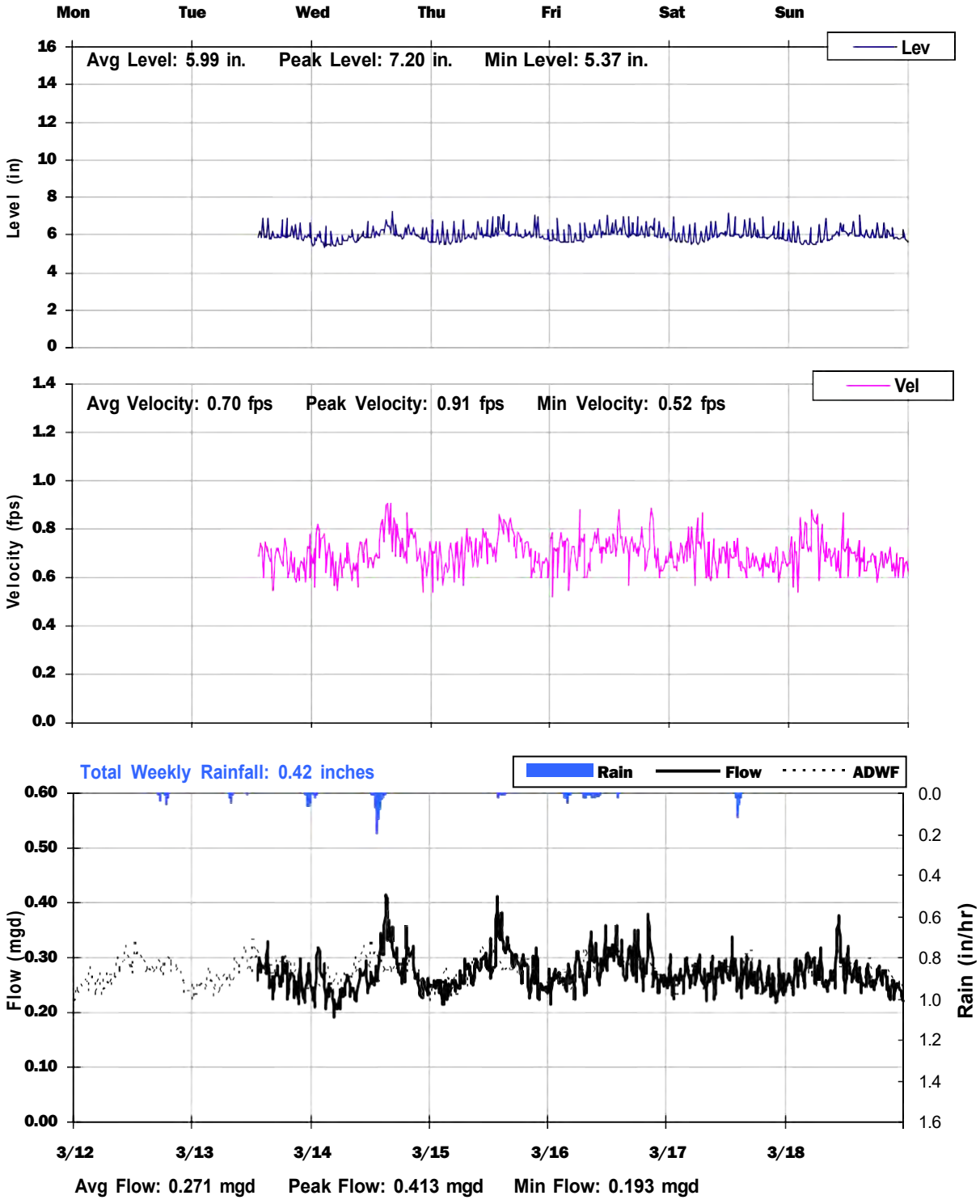
3/5/2018 to 3/12/2018



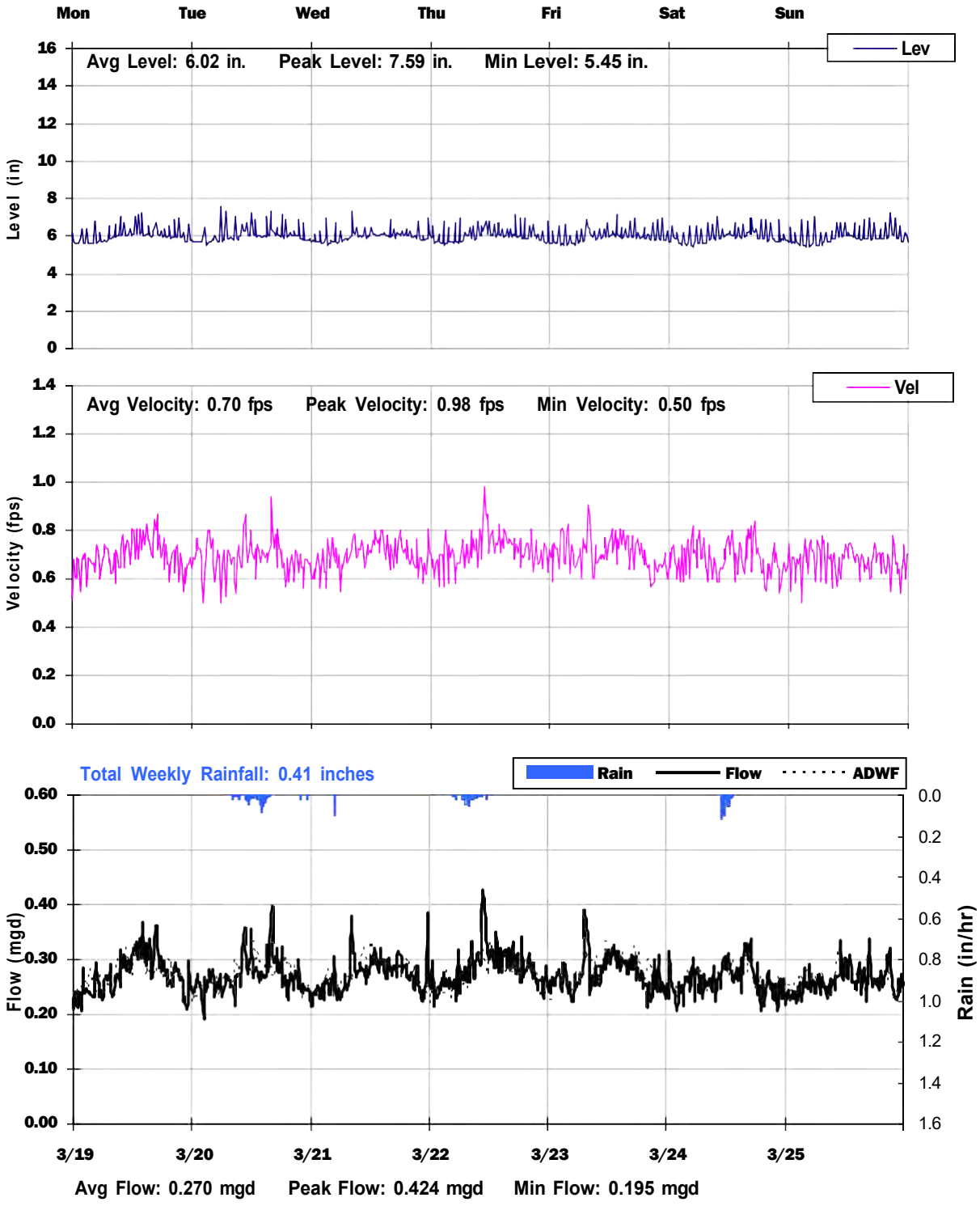
TC-03

Weekly Level, Velocity and Flow Hydrographs

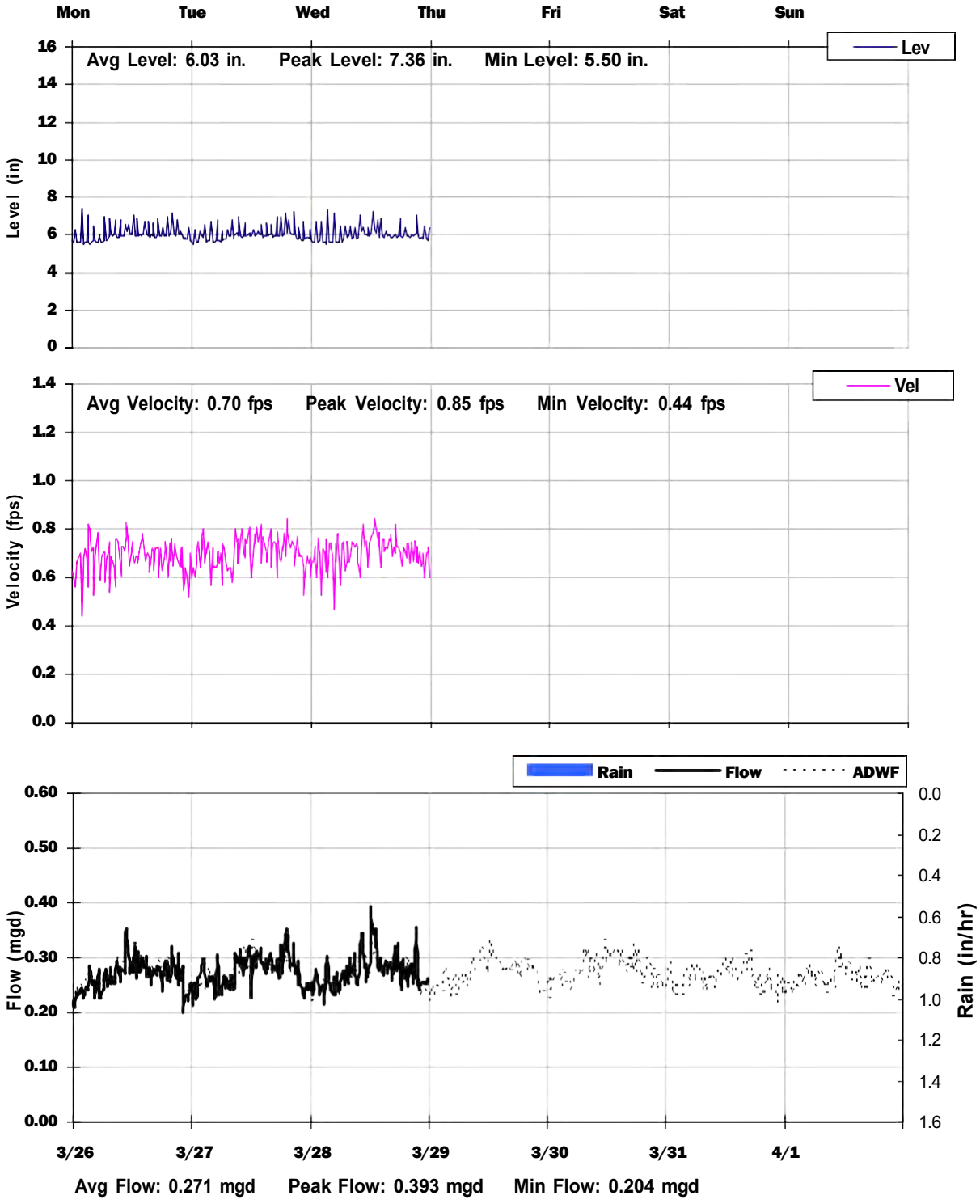
3/12/2018 to 3/19/2018



TC-03
Weekly Level, Velocity and Flow Hydrographs
3/19/2018 to 3/26/2018



TC-03
Weekly Level, Velocity and Flow Hydrographs
3/26/2018 to 4/2/2018



City of Tracy, California

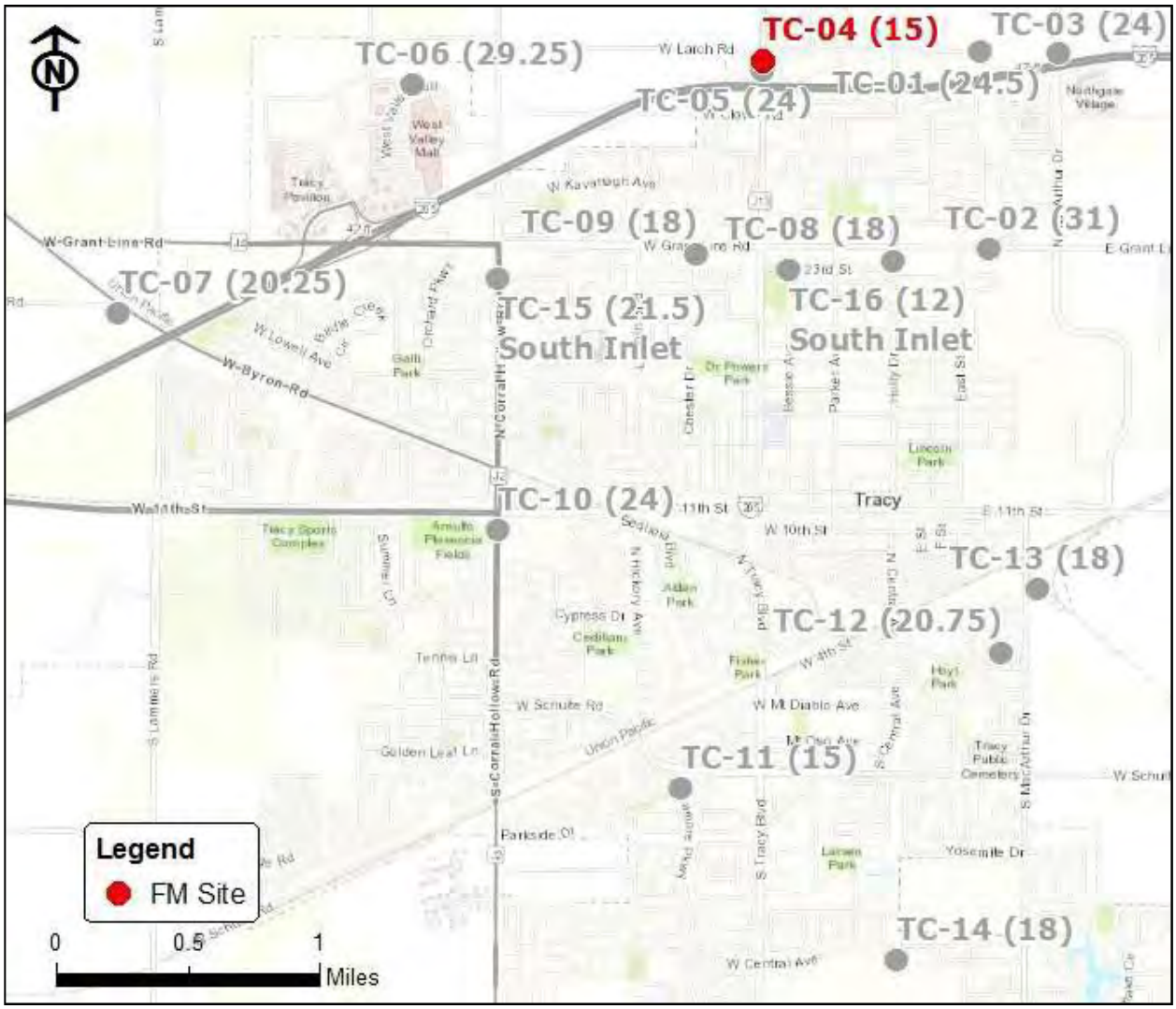
Sanitary Sewer Flow Monitoring

February 26 - April 08, 2020

Monitoring Site: **TC-04**

Location: **Tracy Blvd, approx 240 feet south of Larch Road**

Data Summary Report



Vicinity Map: TC-04

TC-04

Site Information

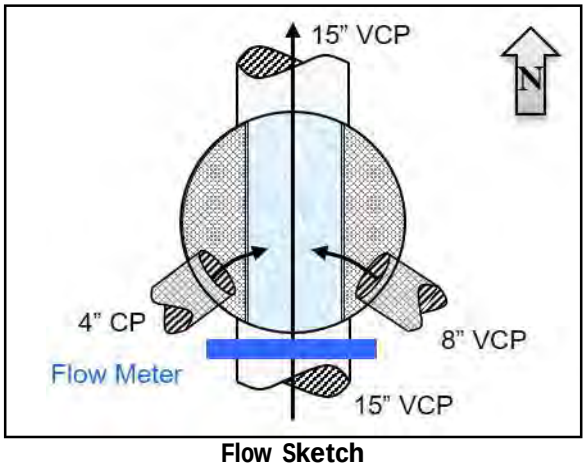
Location:	**Tracy Blvd, approx 240 feet south of Larch Road**
City Manhole:	
Coordinates:	**121.4350° W, 37.7644° N**
Rim Elevation (Earth):	**12 feet**
Pipe Diameter:	**15 inches**
ADWF:	**0.603 mgd**
Peak Measured Flow:	**1.029 mgd**



Satellite Map



Sanitary Map



Flow Sketch



Street View



Plan View

TC-04

Additional Site Photos

Effluent Pipe



Monitored South Influent Pipe



TC-04

Additional Site Photos

Southeast Lateral



Southwest Lateral

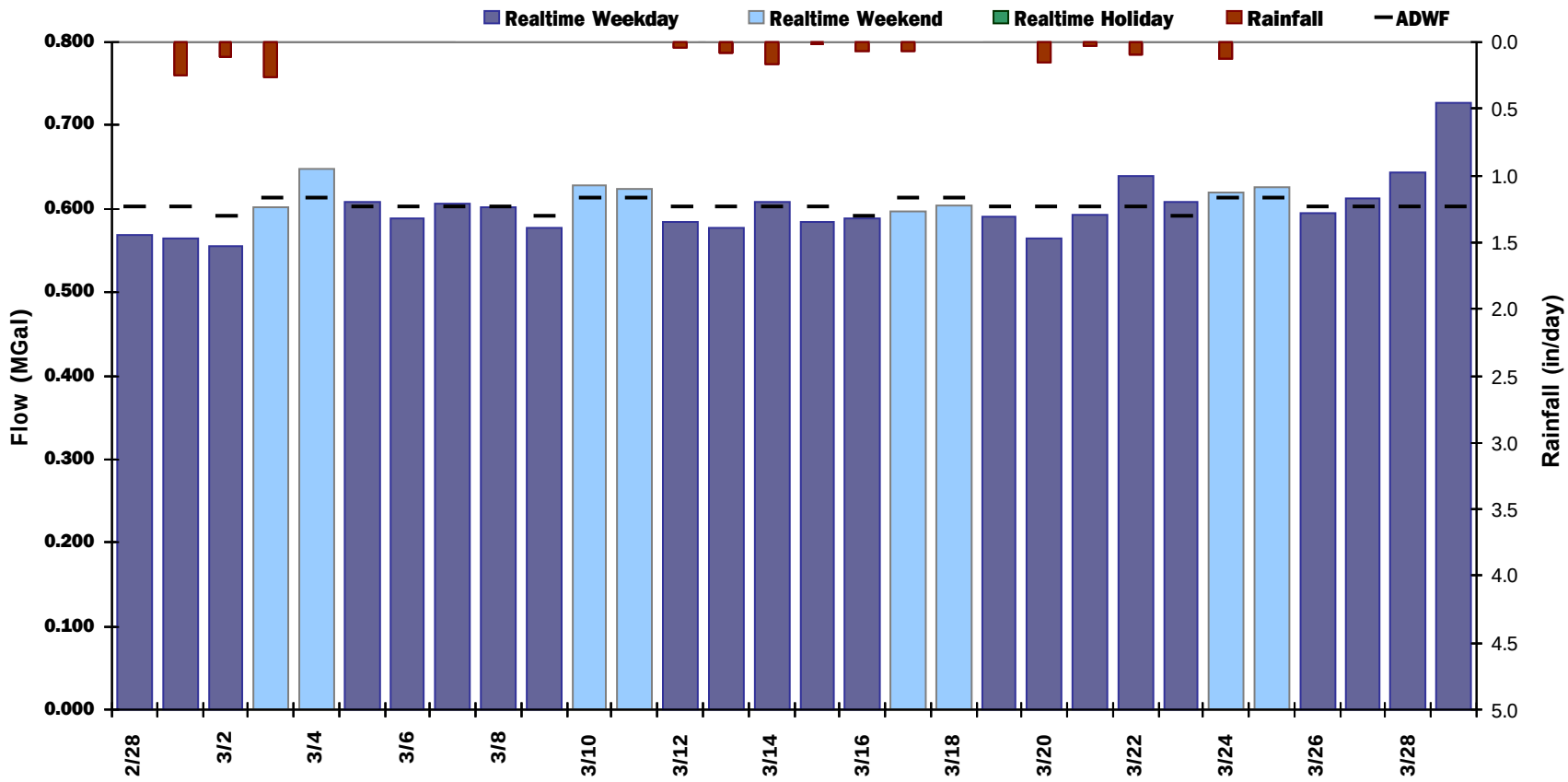


TC-04

Period Flow Summary: Daily Flow Totals

Avg Period Flow: 0.605 MGal **Peak Daily Flow: 0.728 MGal** **Min Daily Flow: 0.554 MGal**

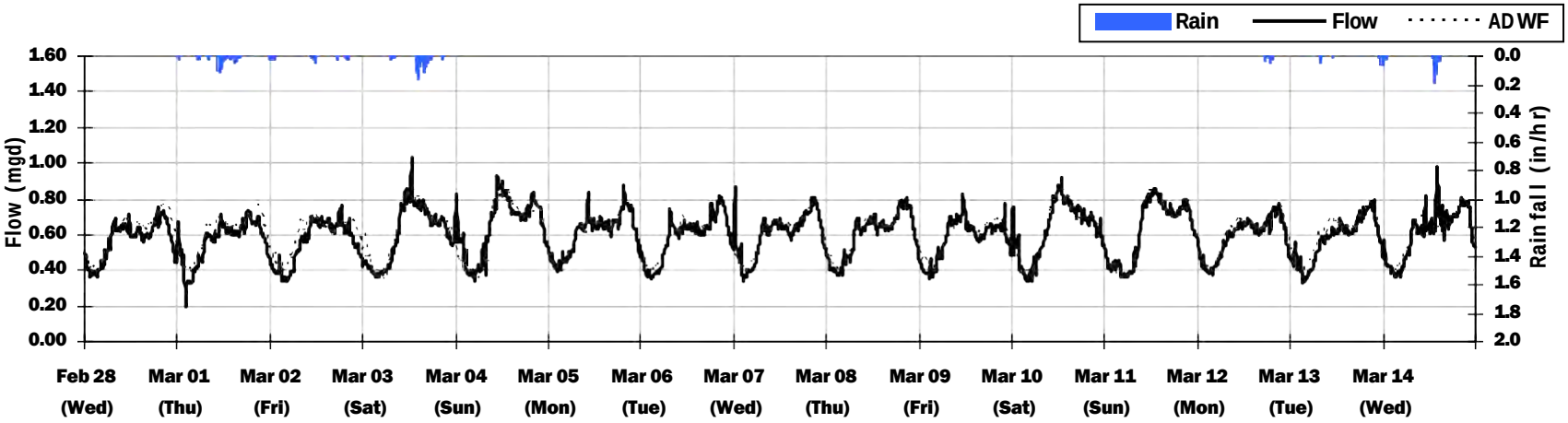
Total Period Rainfall: 1.43 inches

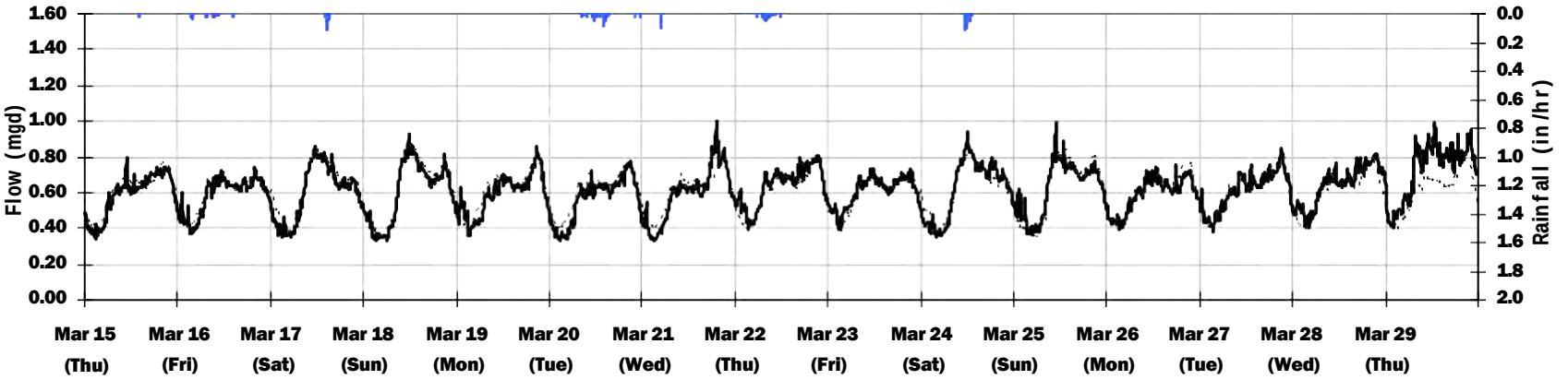


TC-04

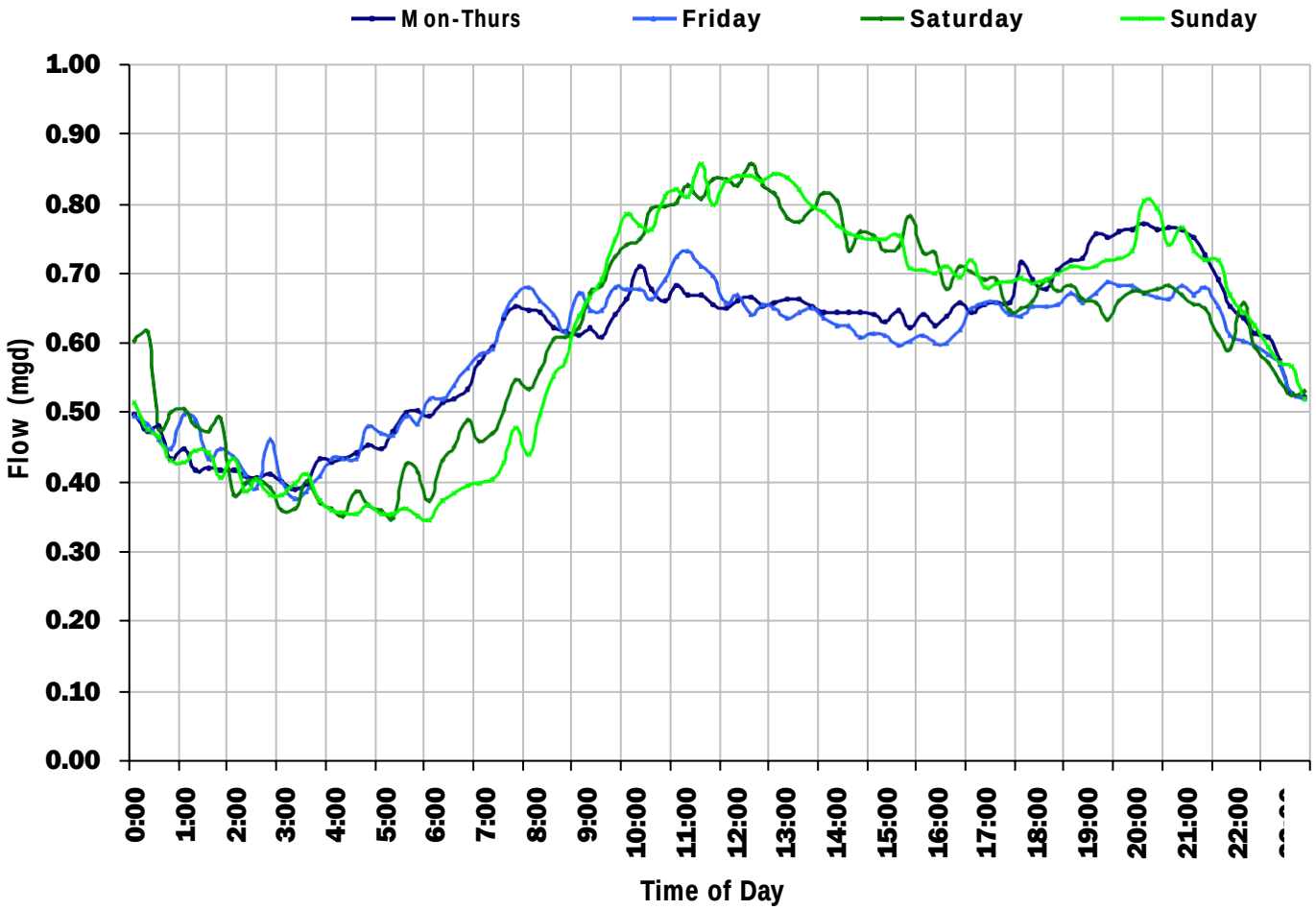
Flow Summary: 2/28/2018 to 3/29/2018

Total Period Rainfall: 1.43 inches Avg Flow: 0.604 mgd Peak Flow: 1.029 mgd Min Flow: 0.210 mgd



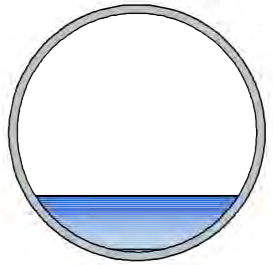


TC-04
Average Dry Weather Flow Hydrographs



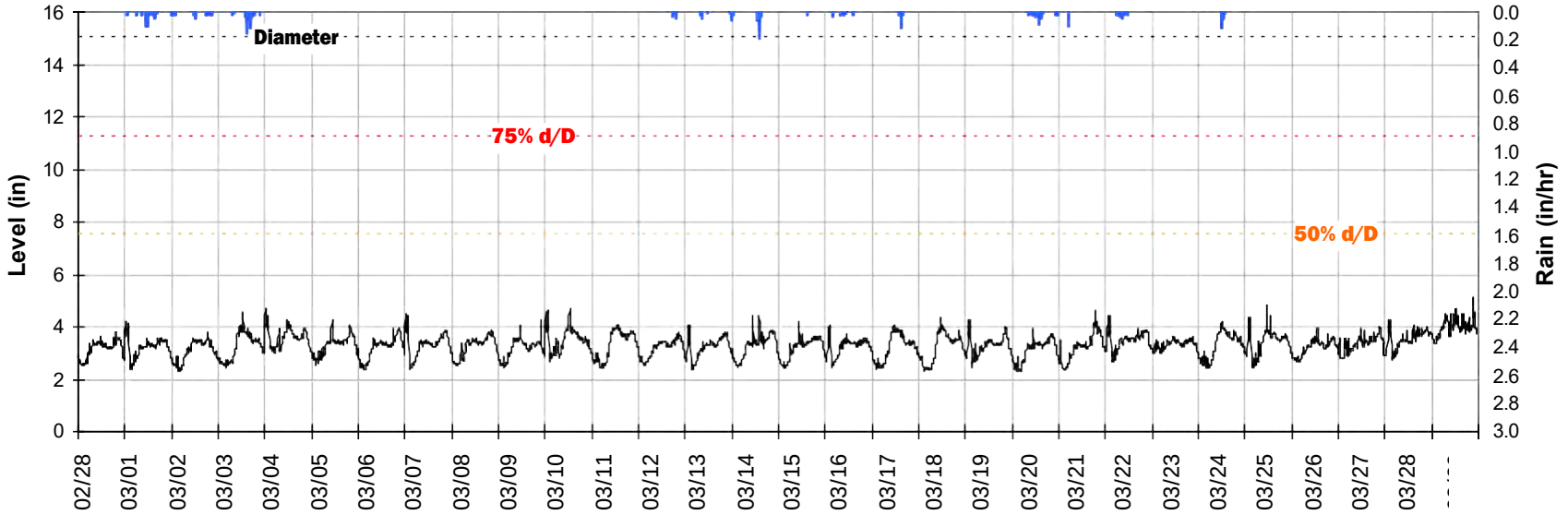
ADWF:

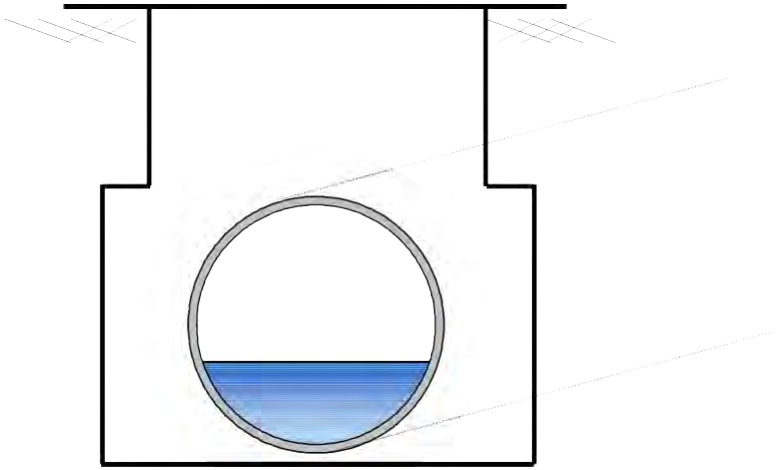
0.603 *mgd*



TC-04
Site Capacity and Surcharge Summary

Realtime Flow Levels with Rainfall Data over Monitoring Period



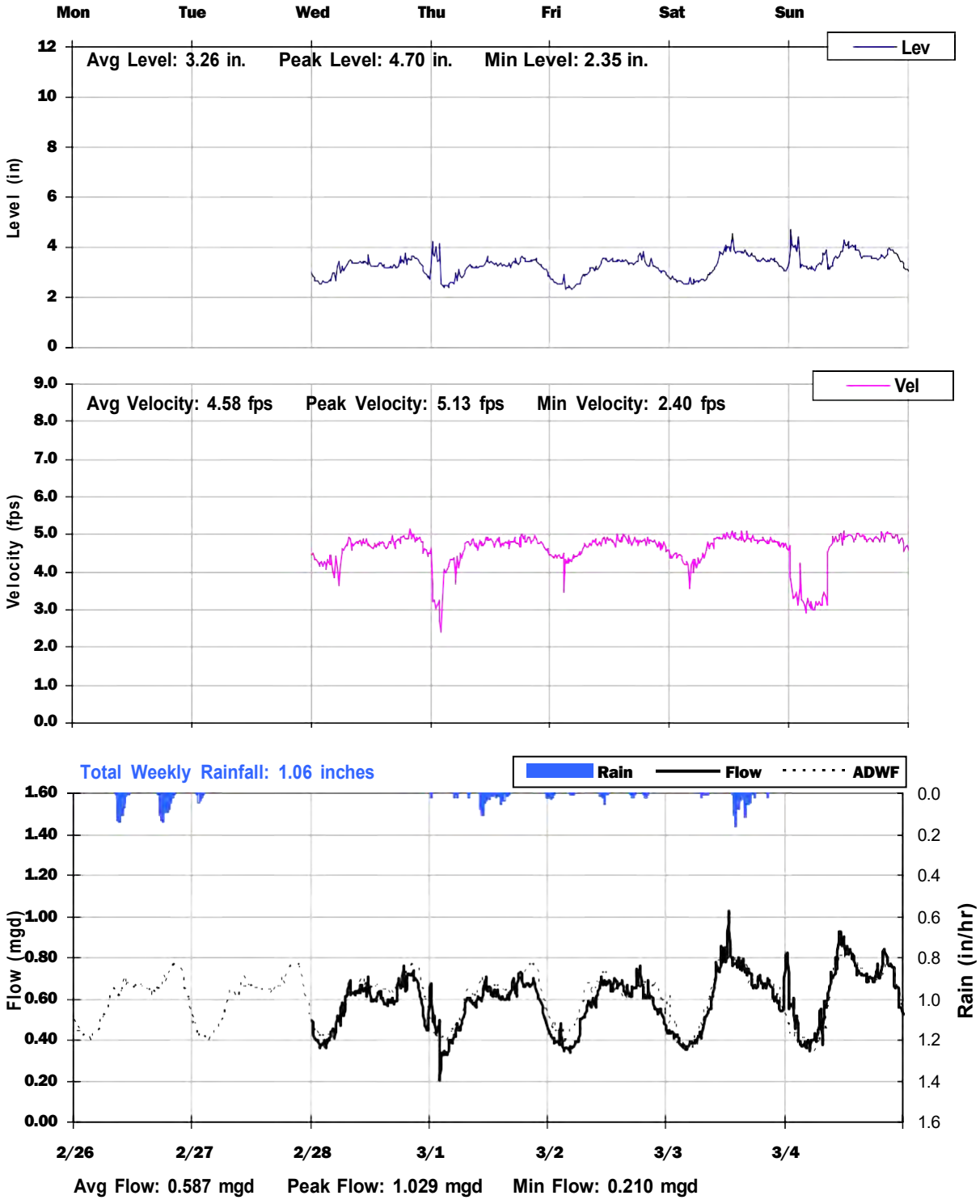


Pipe Diameter:	**15**	***inches***
Peak Measured Level:	**5.15**	***inches***
Peak d/D Ratio:	**0.34**	

TC-04

Weekly Level, Velocity and Flow Hydrographs

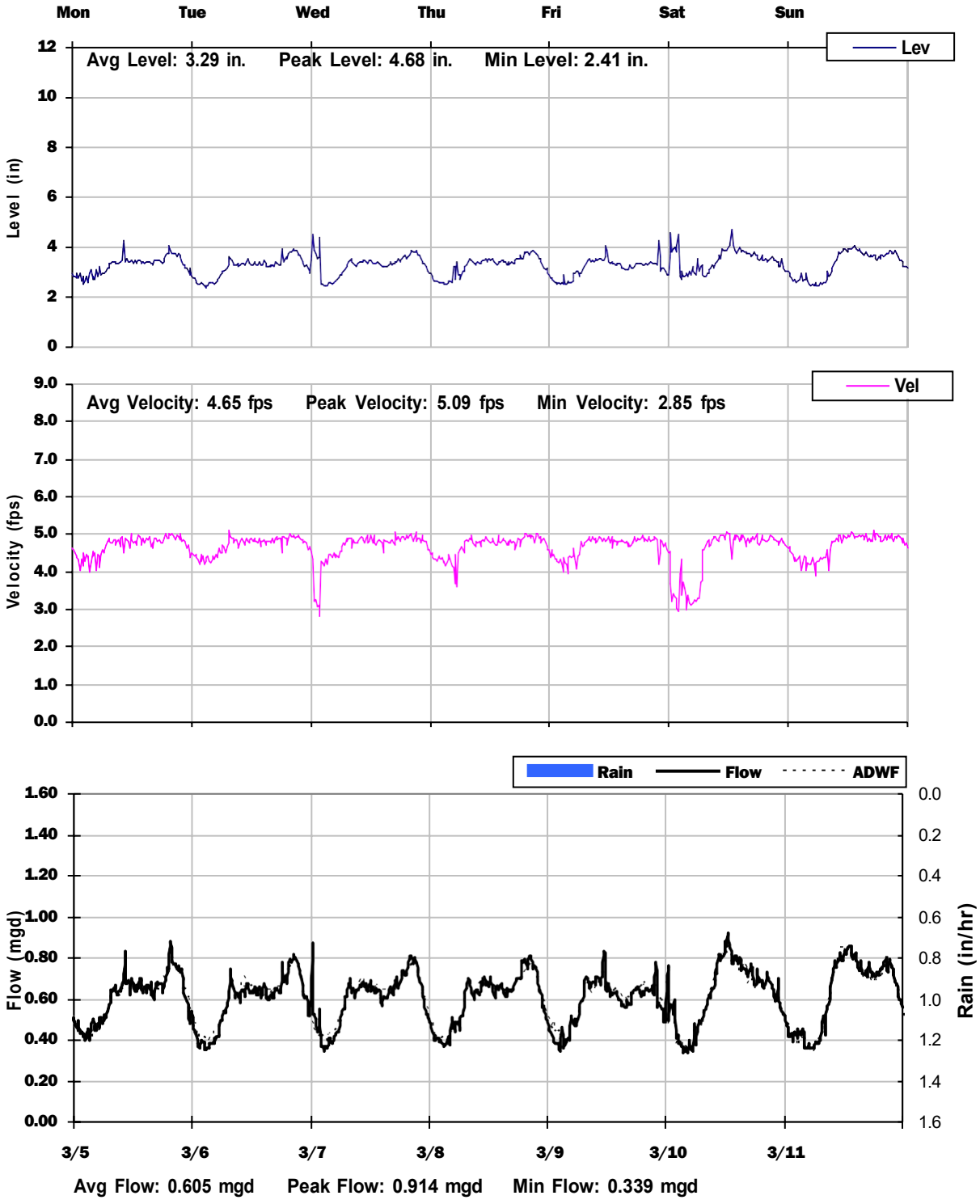
2/26/2018 to 3/5/2018



TC-04

Weekly Level, Velocity and Flow Hydrographs

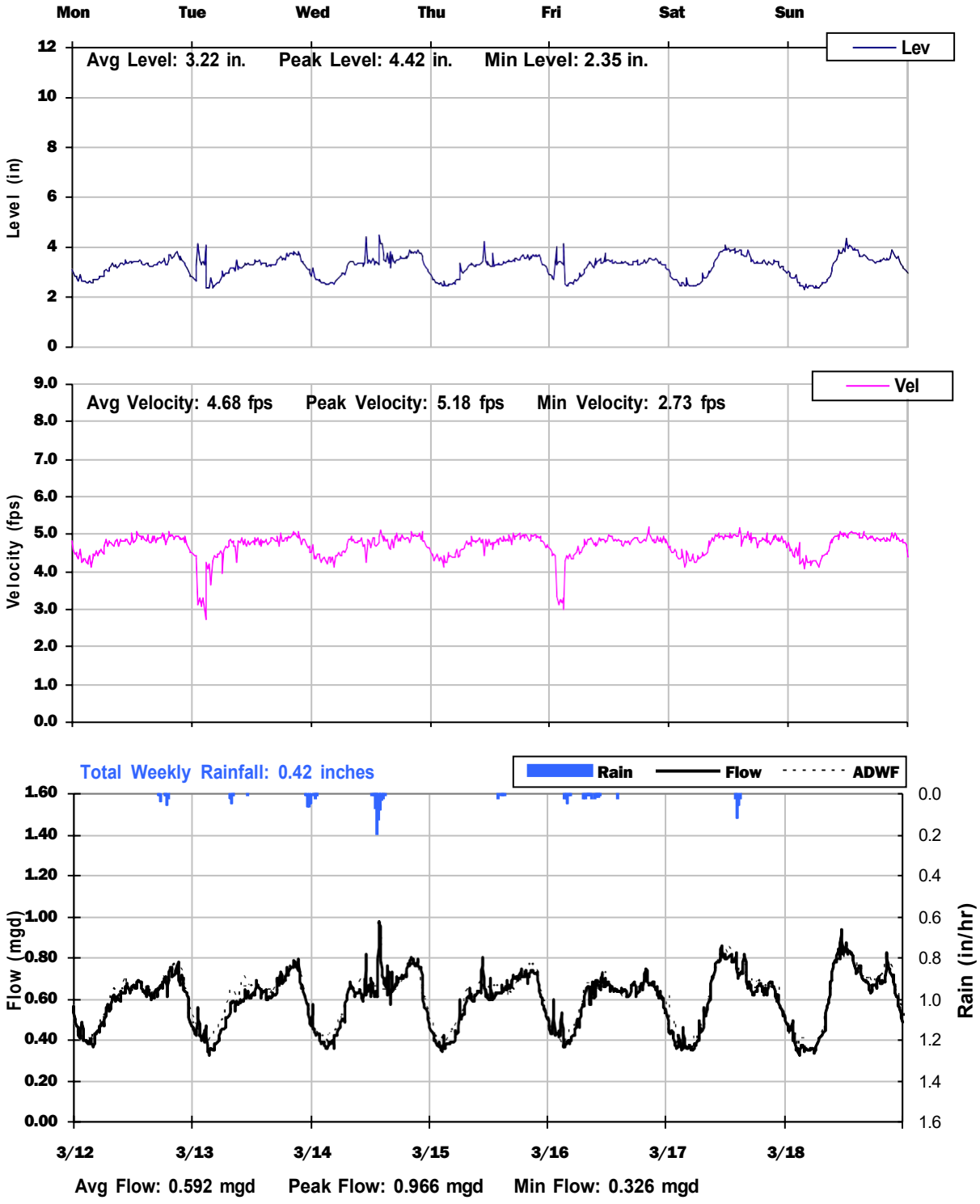
3/5/2018 to 3/12/2018



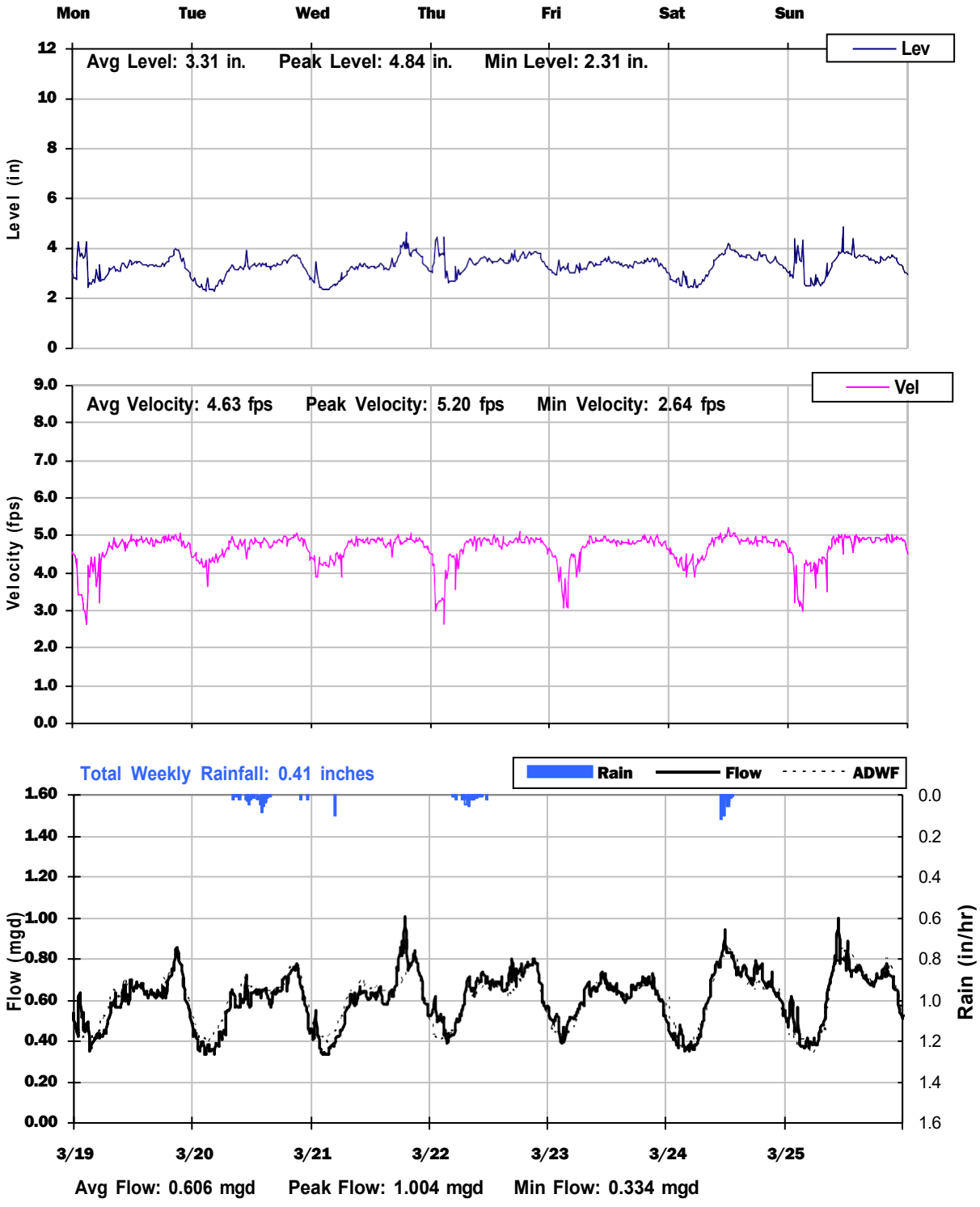
TC-04

Weekly Level, Velocity and Flow Hydrographs

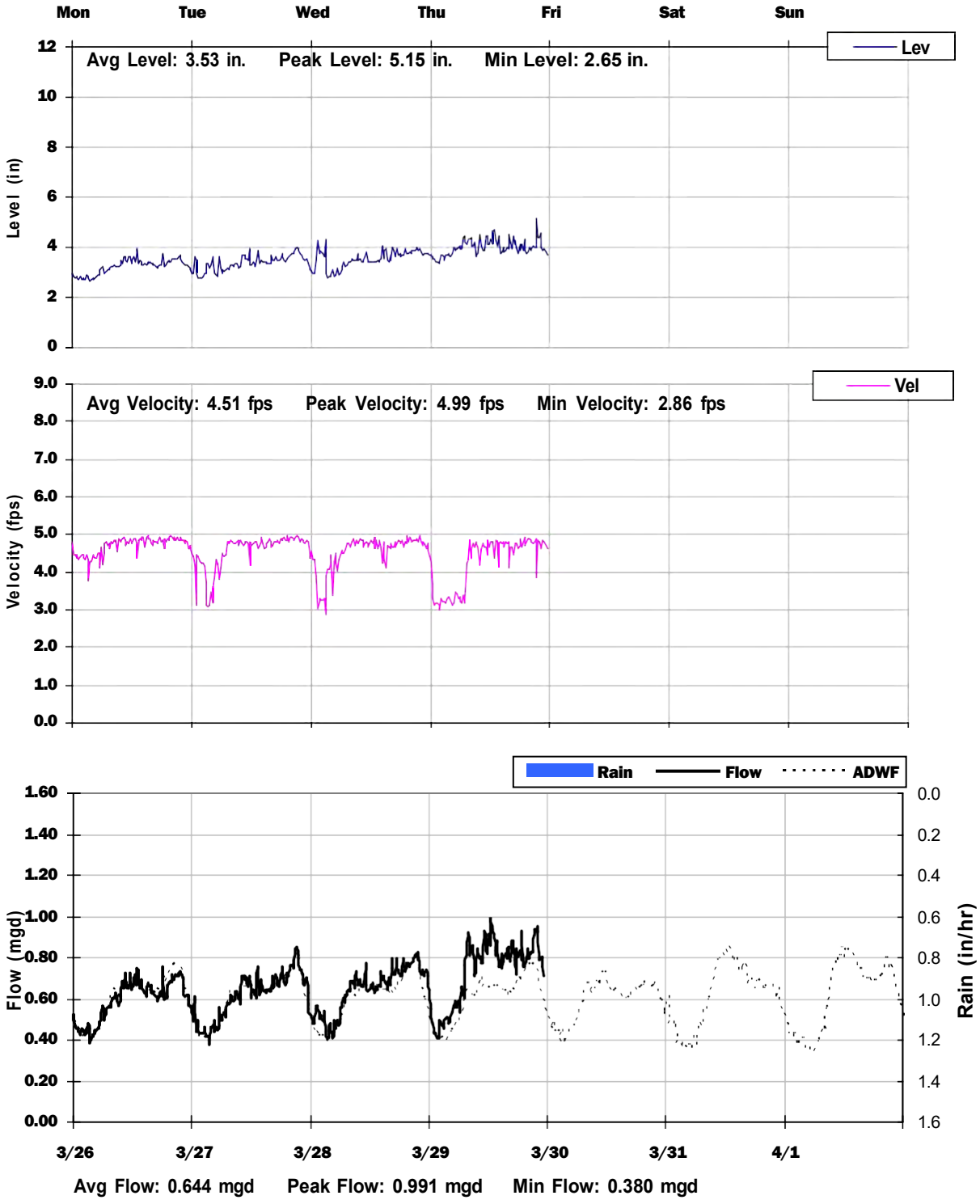
3/12/2018 to 3/19/2018



TC-04
Weekly Level, Velocity and Flow Hydrographs
3/19/2018 to 3/26/2018



TC-04
Weekly Level, Velocity and Flow Hydrographs
3/26/2018 to 4/2/2018



TC-04

City of Tracy, California

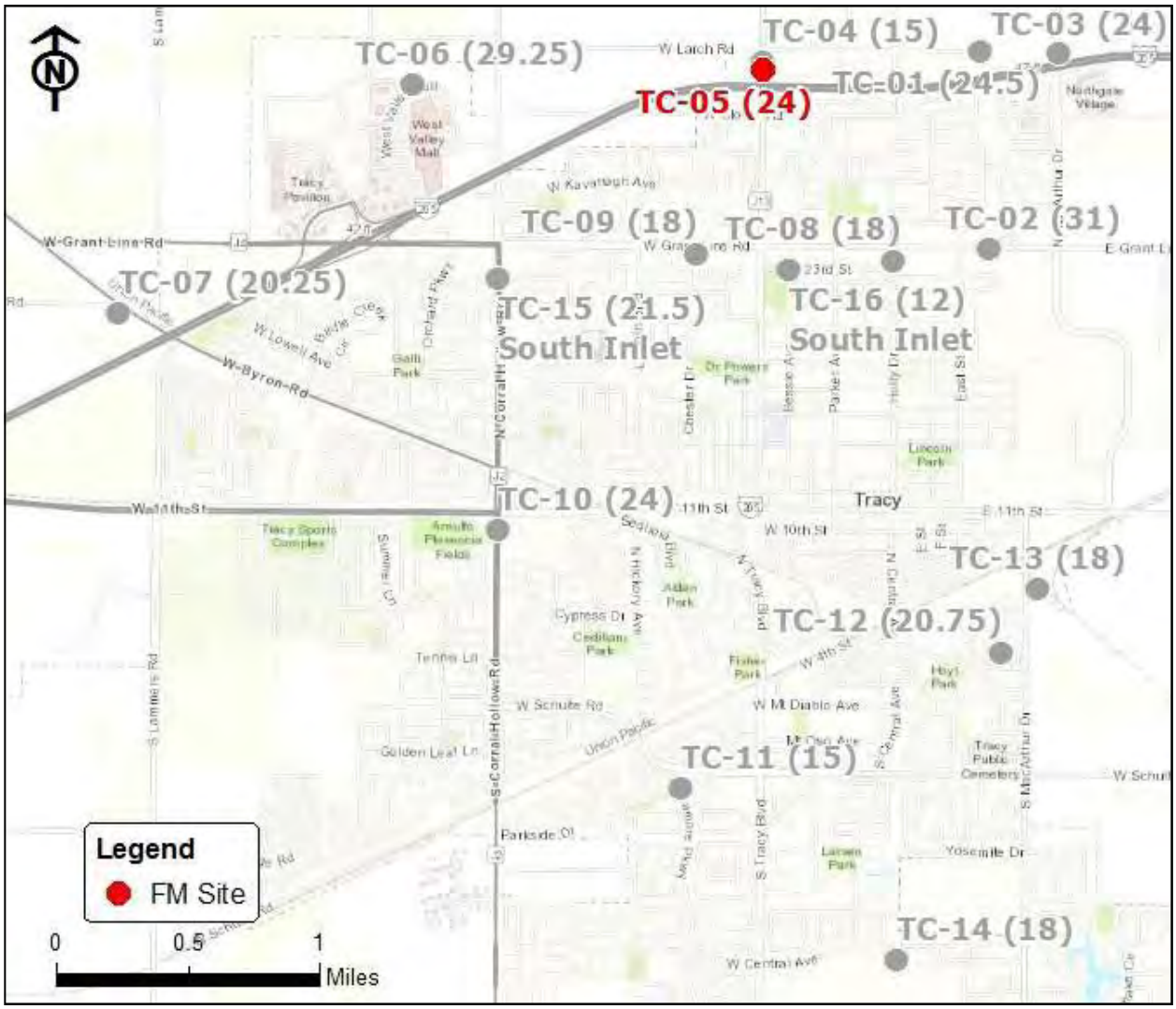
Sanitary Sewer Flow Monitoring

February 26 - April 08, 2020

Monitoring Site: **TC-05**

Location: **Tracy Blvd, approx 405 feet south of Larch Road**

Data Summary Report



Vicinity Map: TC-05

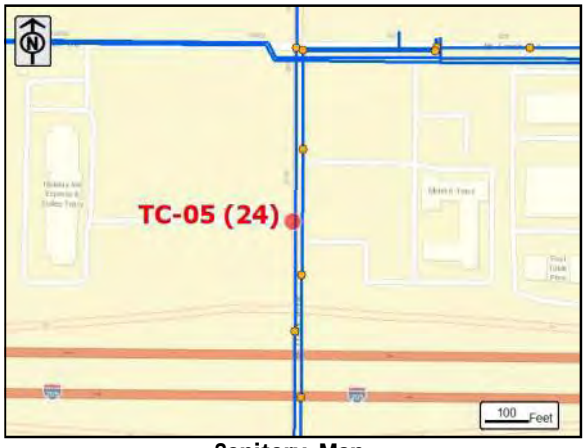
TC-05

Site Information

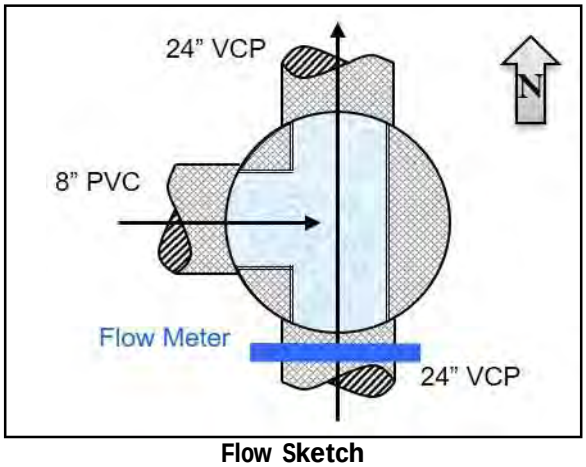
Location:	**Tracy Blvd, approx 405 feet south of Larch Road**
City Manhole:	
Coordinates:	**121.4351° W, 37.7639° N**
Rim Elevation (Earth):	**13 feet**
Pipe Diameter:	**24 inches**
ADWF:	**2.361 mgd**
Peak Measured Flow:	**3.816 mgd**



Satellite Map



Sanitary Map



Flow Sketch



Street View



Plan View

TC-05

Additional Site Photos

Effluent Pipe



Monitored South Influent Pipe



TC-05

Additional Site Photos

West Lateral

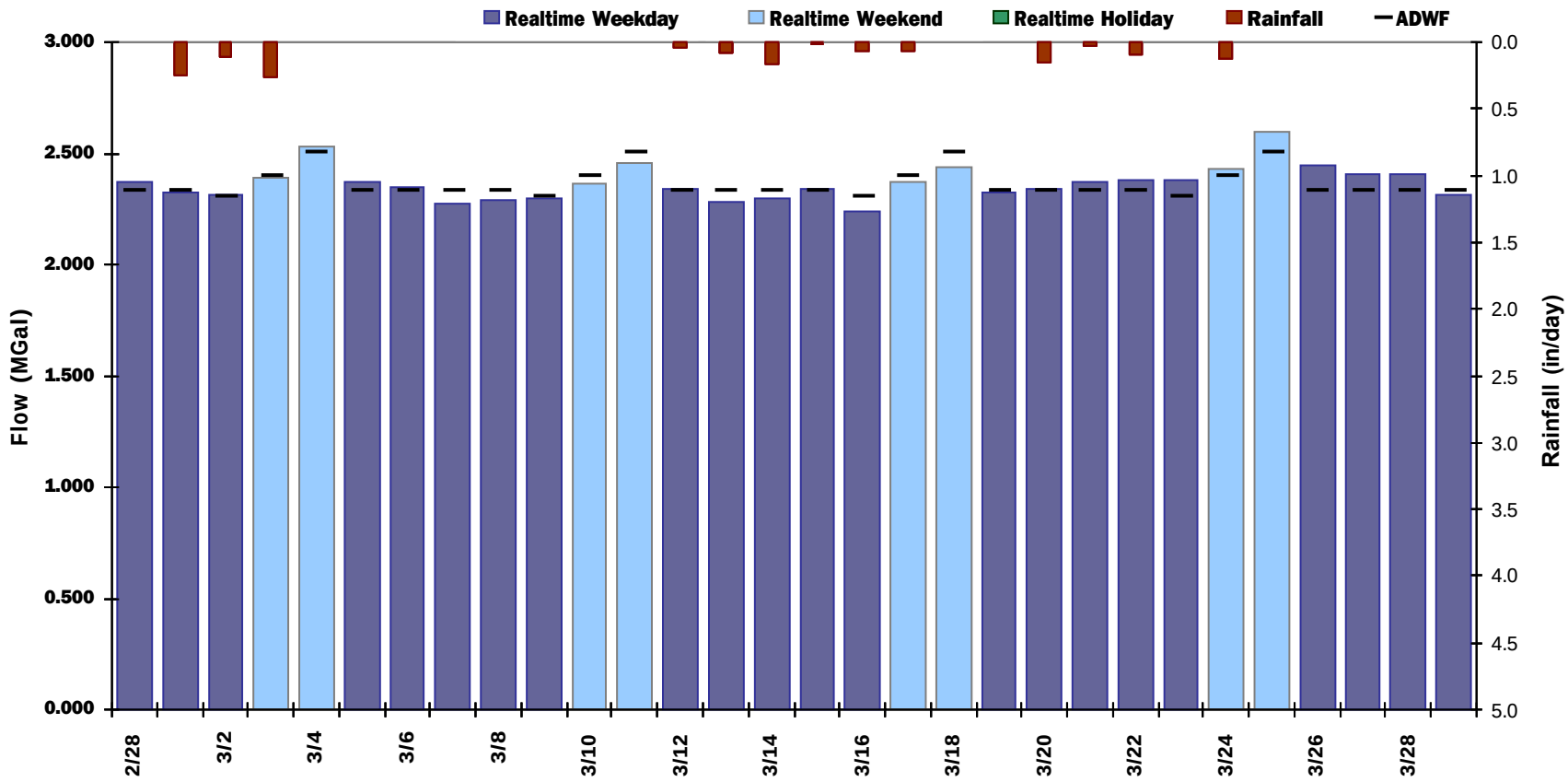


TC-05

Period Flow Summary: Daily Flow Totals

Avg Period Flow: 2.368 MGal **Peak Daily Flow: 2.599 MGal** **Min Daily Flow: 2.242 MGal**

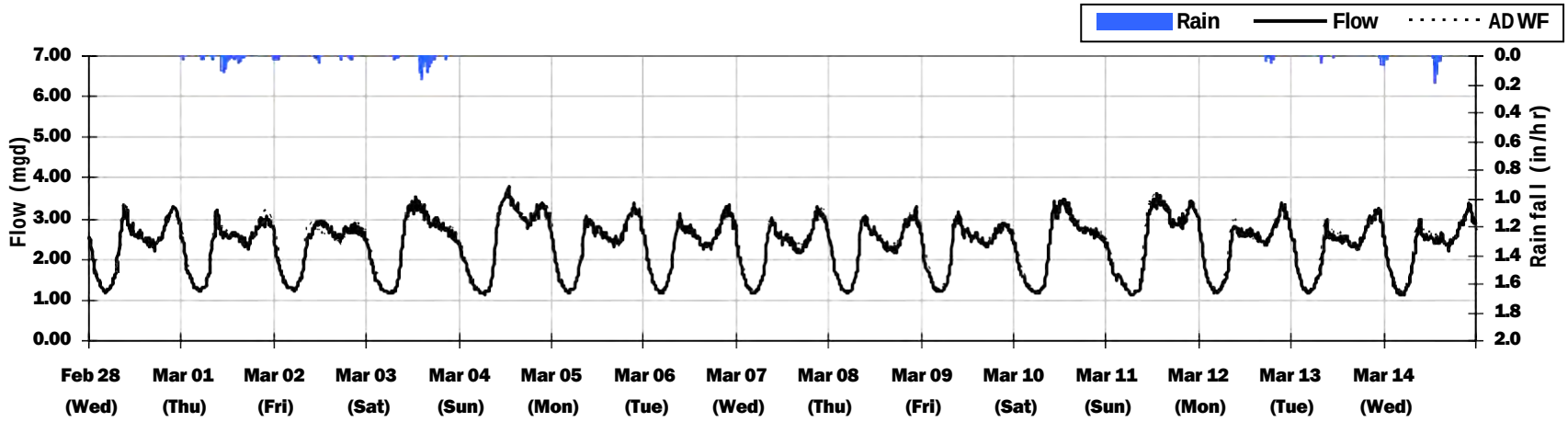
Total Period Rainfall: 1.43 inches

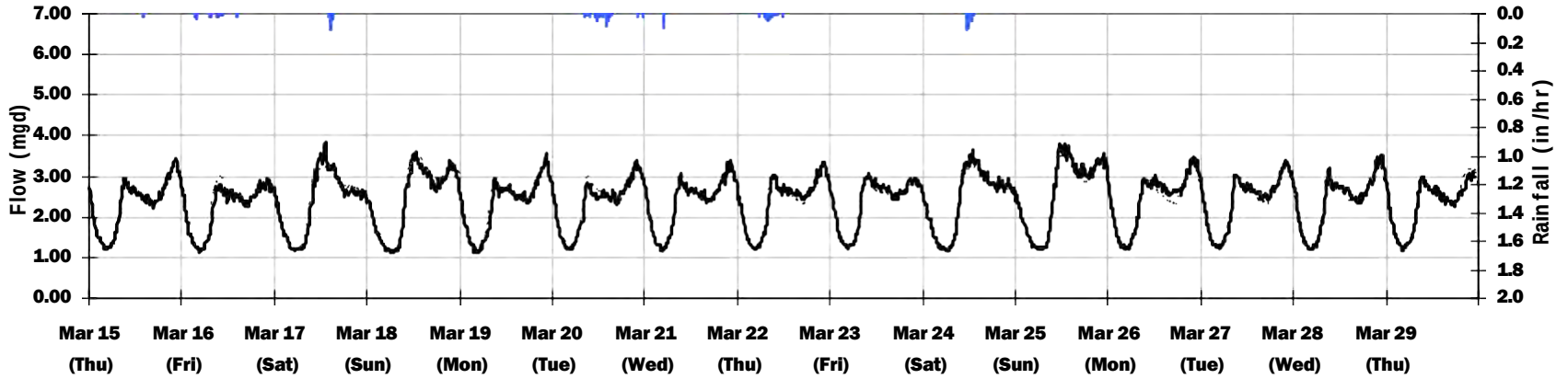


TC-05

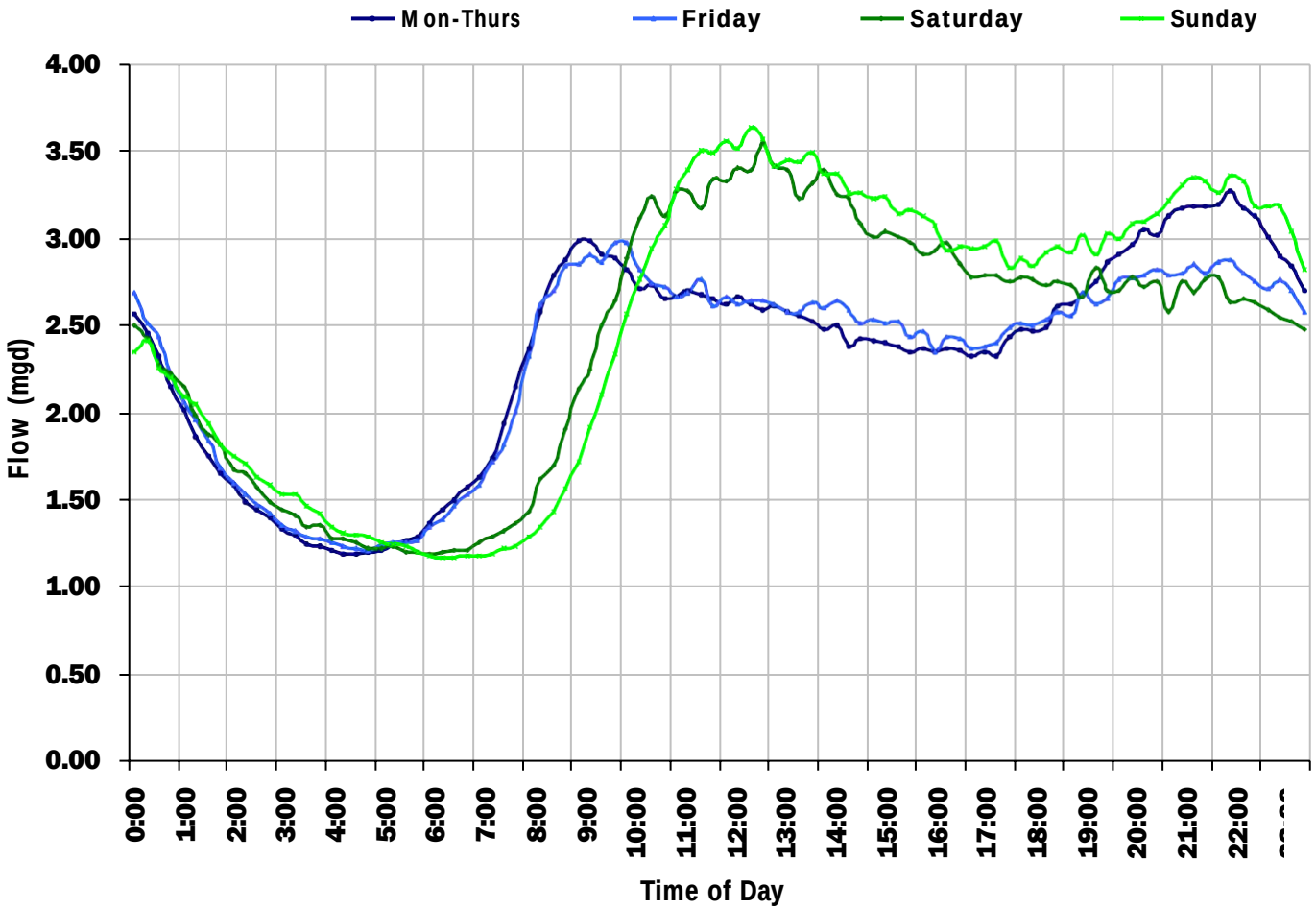
Flow Summary: 2/28/2018 to 3/29/2018

Total Period Rainfall: 1.43 inches Avg Flow: 2.368 mgd Peak Flow: 3.816 mgd Min Flow: 1.115 mgd



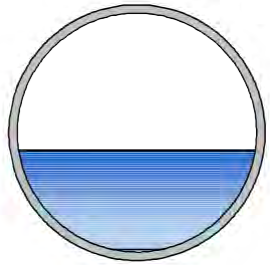


TC-05
Average Dry Weather Flow Hydrographs



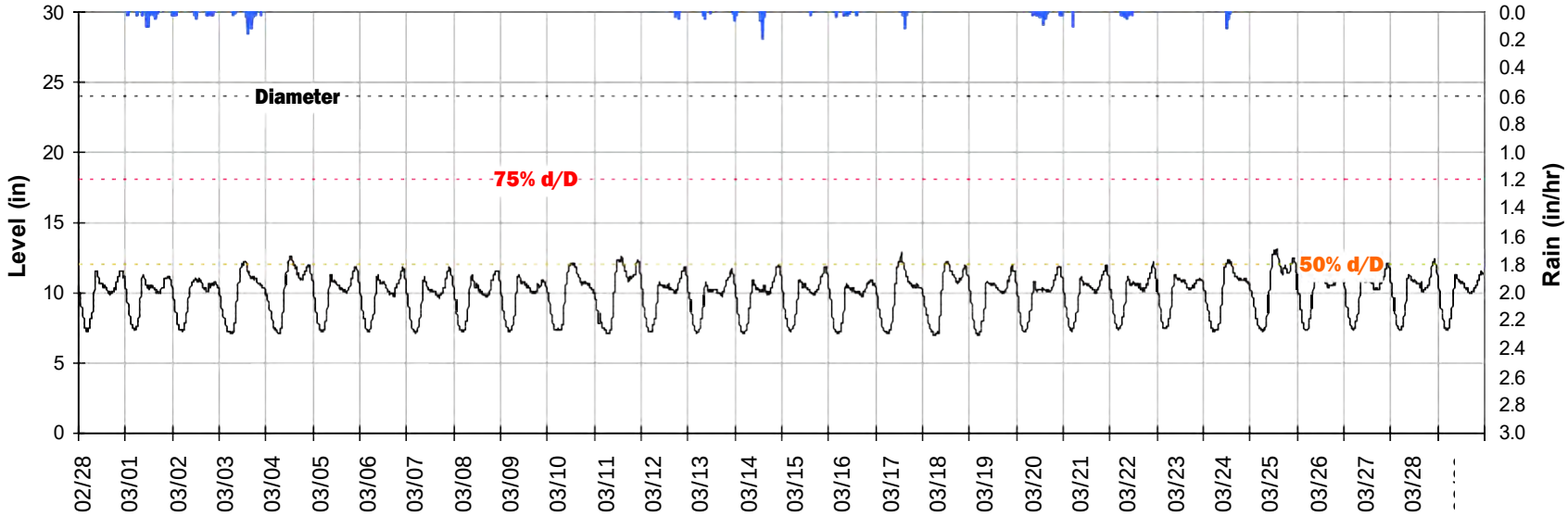
ADWF:

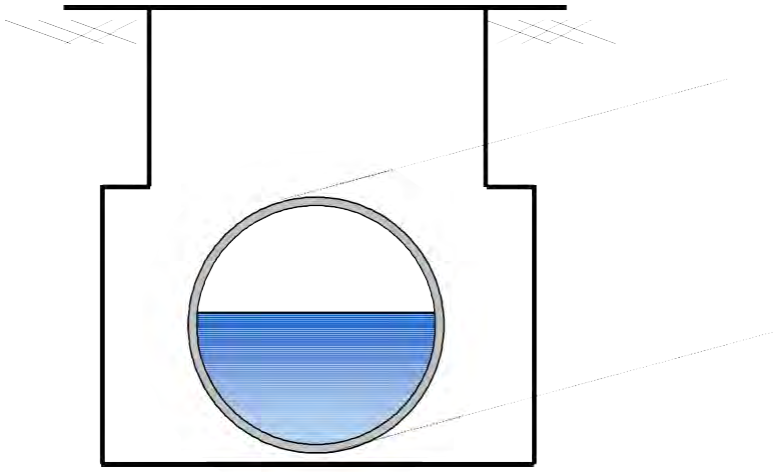
2.361 *mgd*



TC-05
Site Capacity and Surcharge Summary

Realtime Flow Levels with Rainfall Data over Monitoring Period



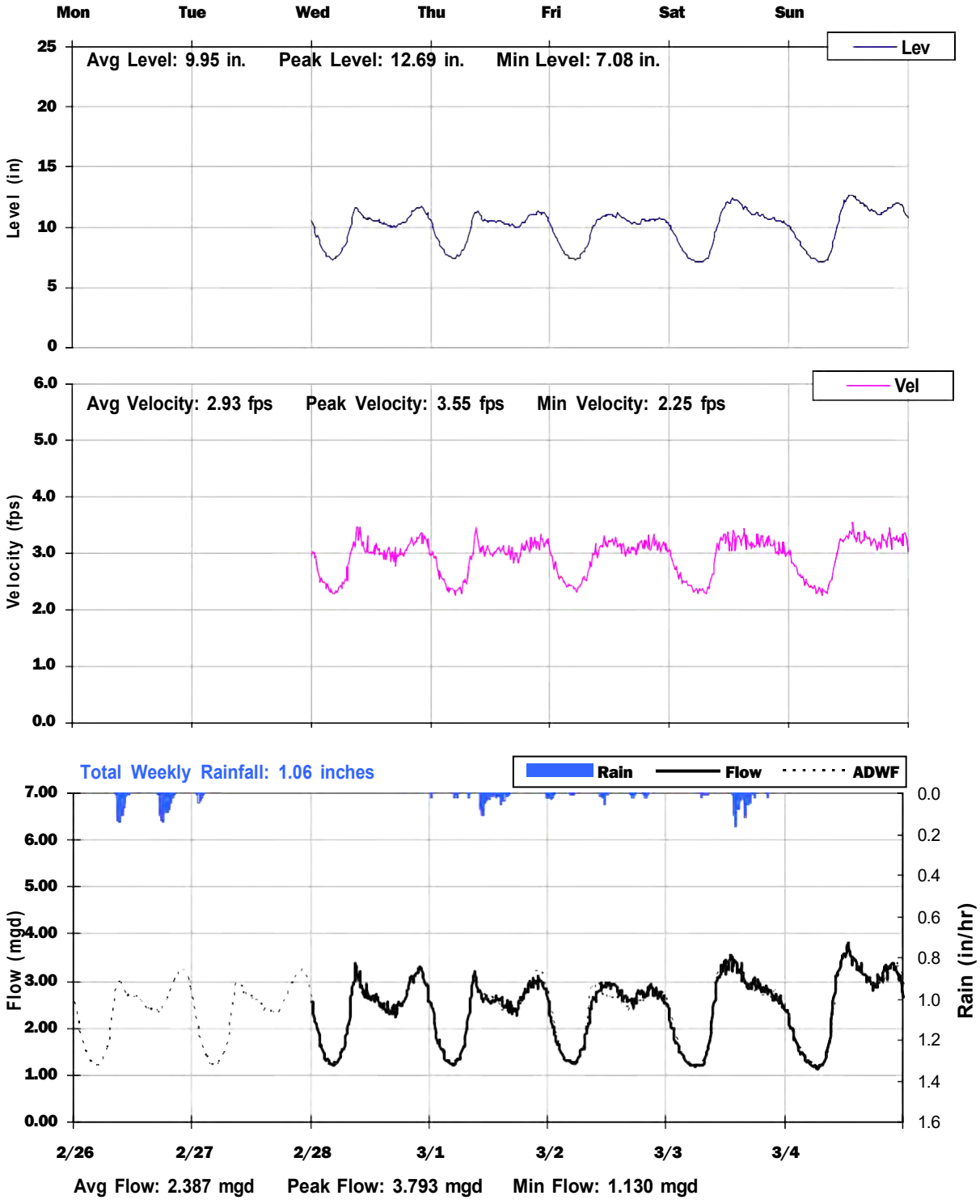


Pipe Diameter:	**24**	***inches***
Peak Measured Level:	**13.1**	***inches***
Peak d/D Ratio:	**0.55**	

TC-05

Weekly Level, Velocity and Flow Hydrographs

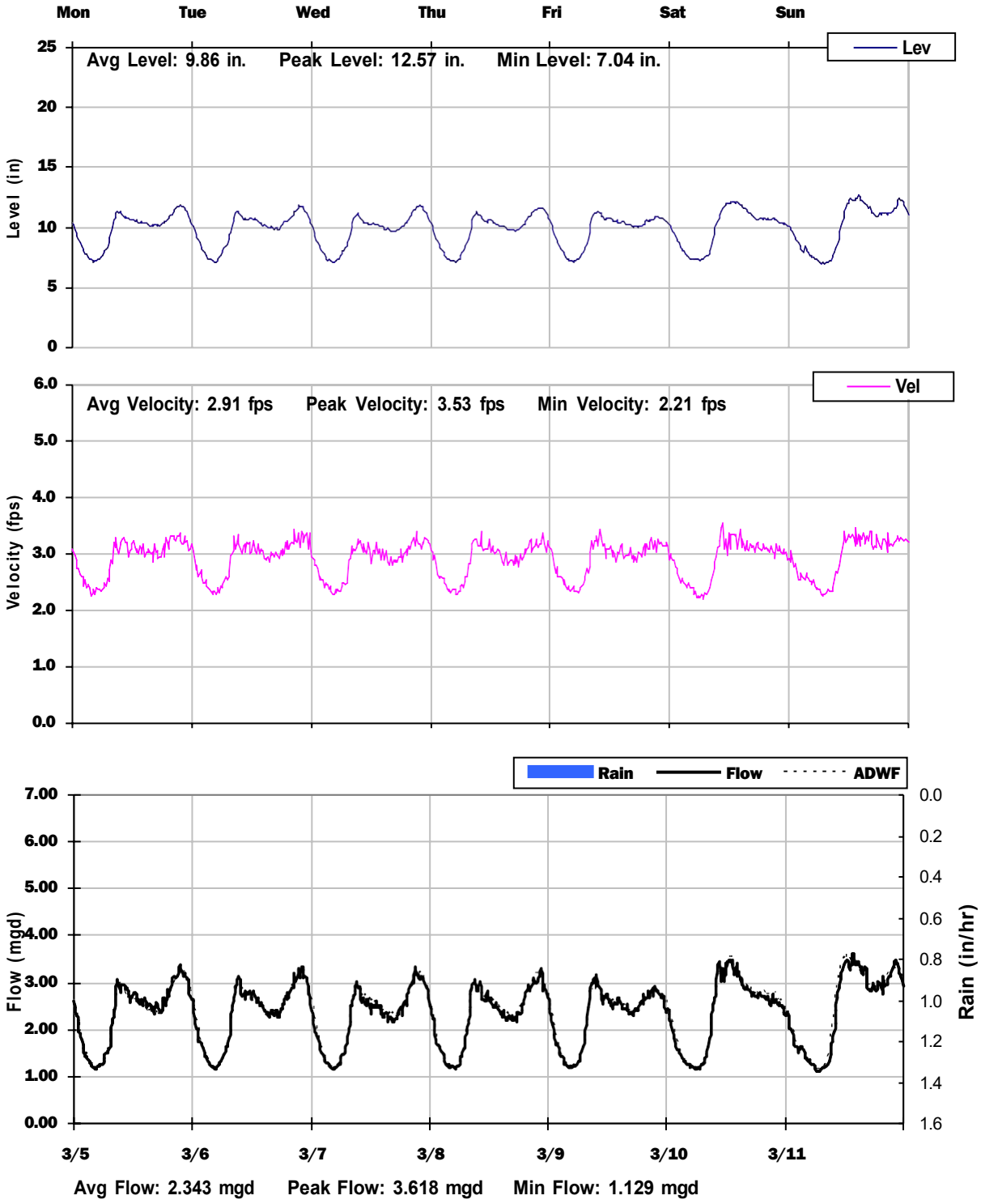
2/26/2018 to 3/5/2018



TC-05

Weekly Level, Velocity and Flow Hydrographs

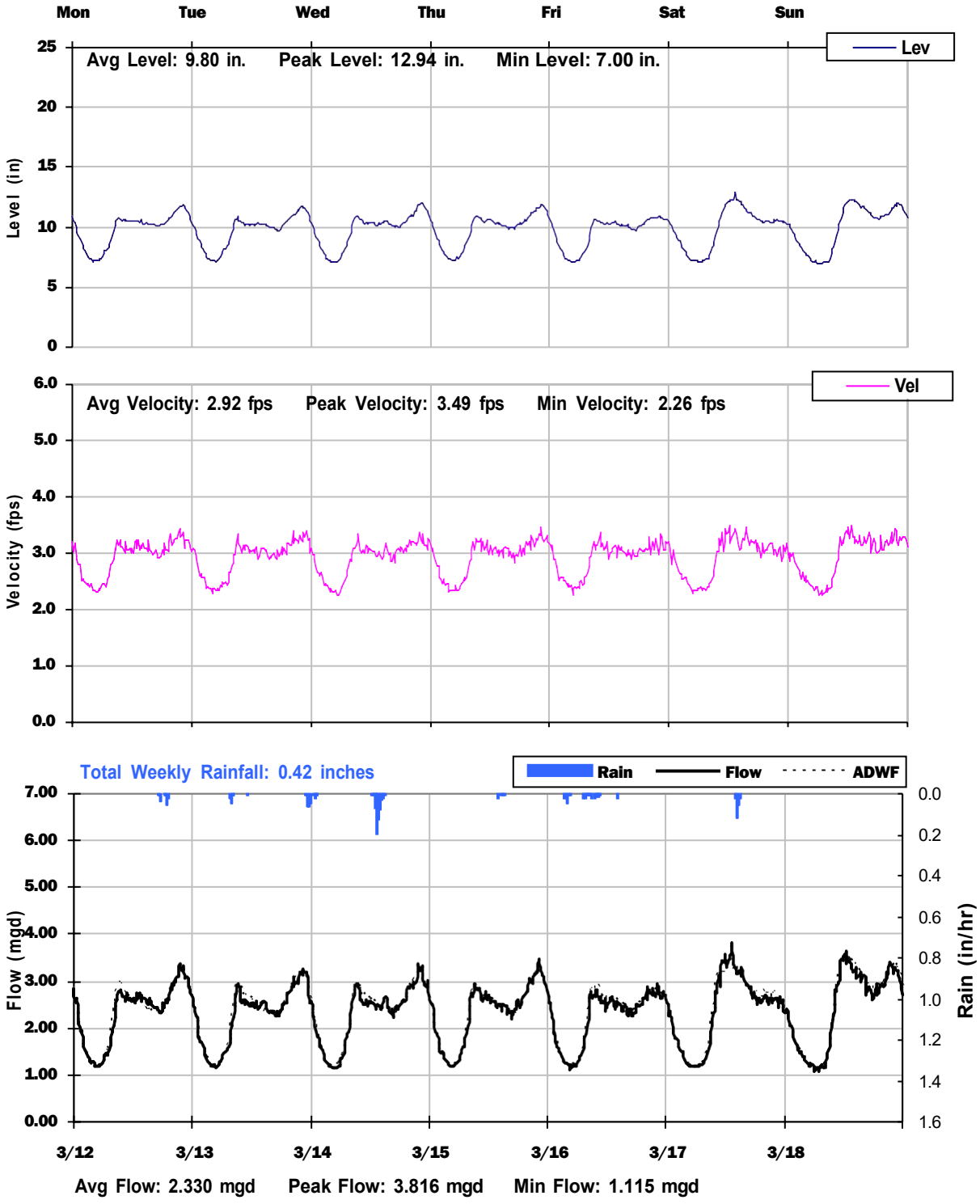
3/5/2018 to 3/12/2018



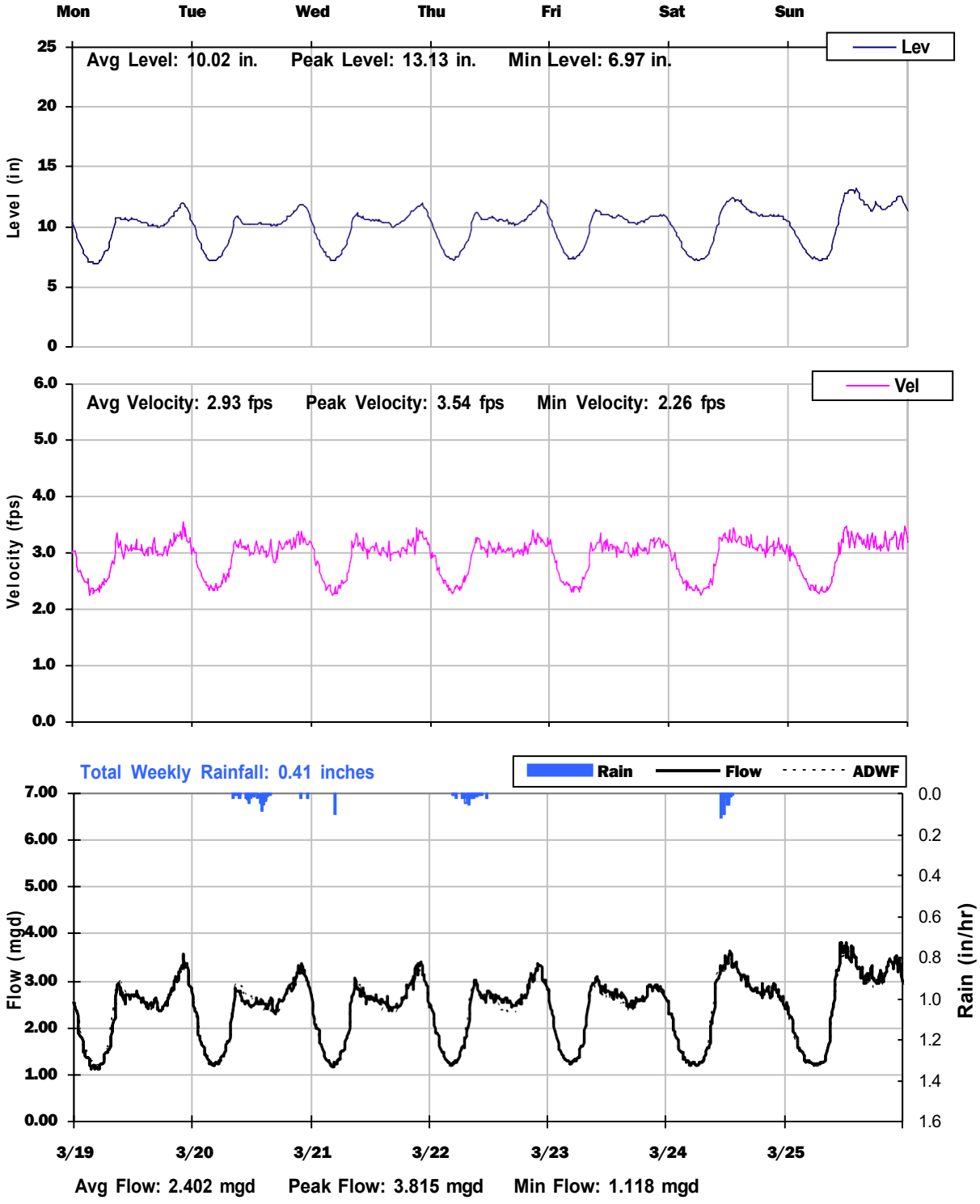
TC-05

Weekly Level, Velocity and Flow Hydrographs

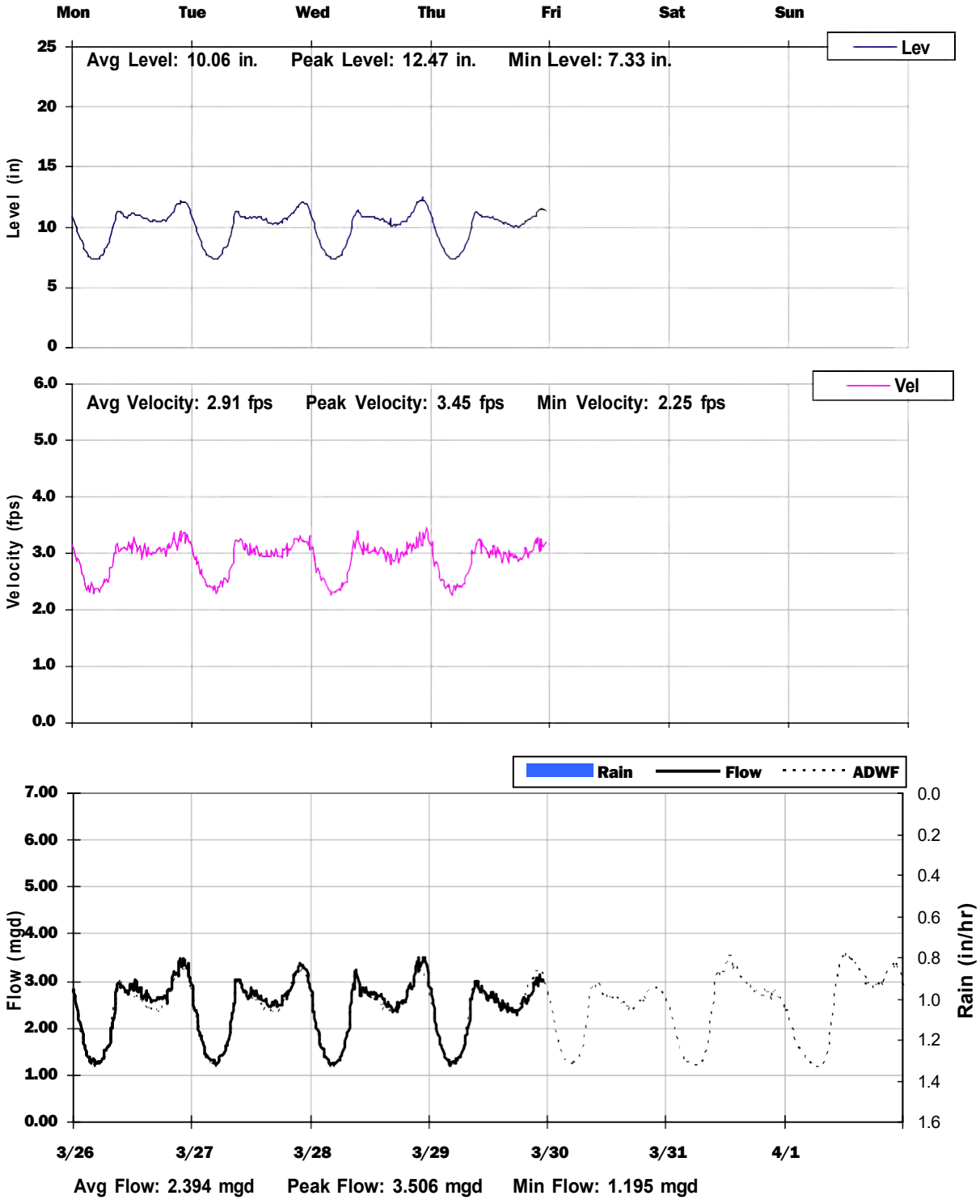
3/12/2018 to 3/19/2018



TC-05
Weekly Level, Velocity and Flow Hydrographs
3/19/2018 to 3/26/2018



TC-05
Weekly Level, Velocity and Flow Hydrographs
3/26/2018 to 4/2/2018

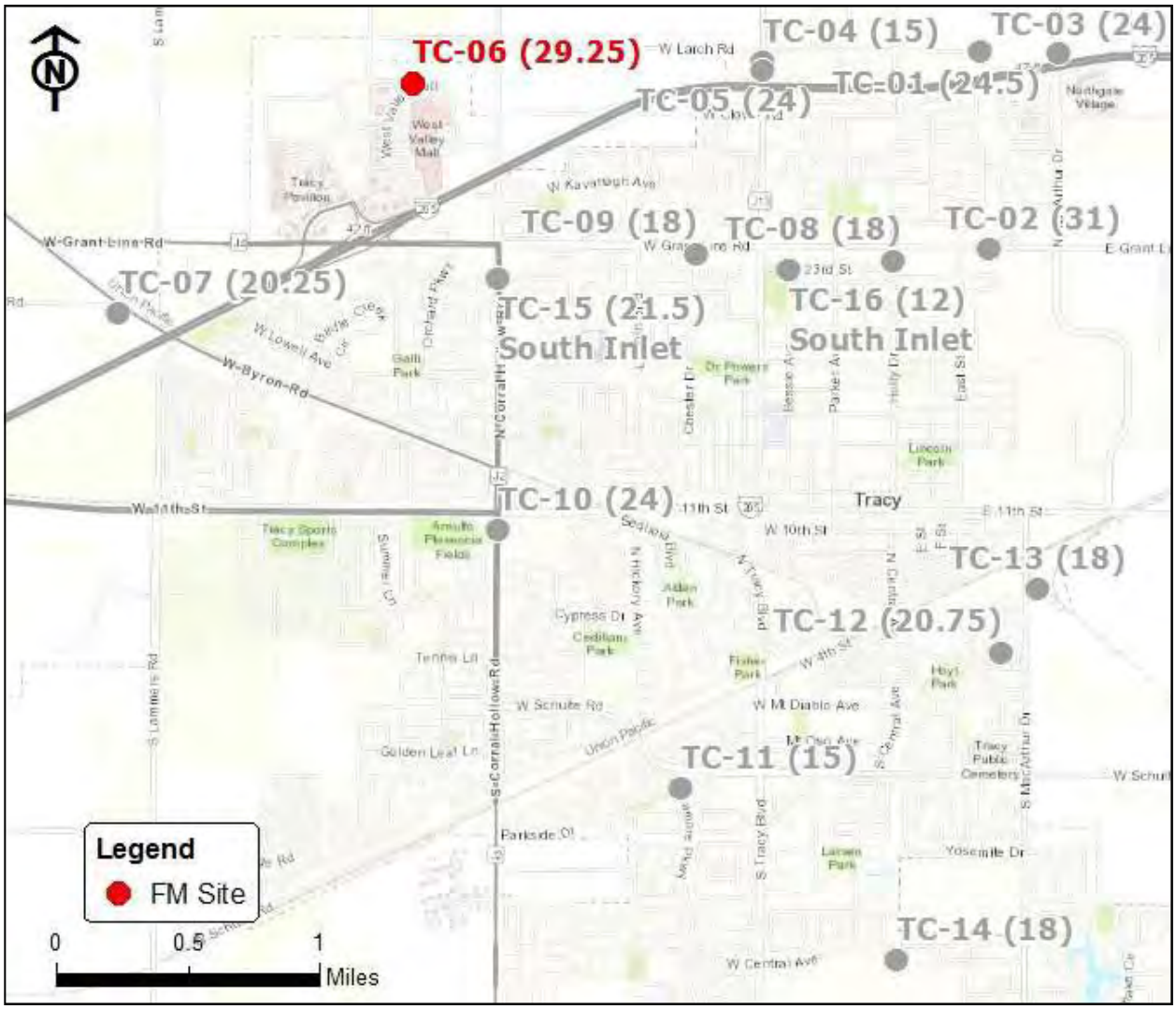


TC-05
City of Tracy, California
Sanitary Sewer Flow Monitoring
February 26 - April 08, 2020

Monitoring Site: **TC-06**

Location: **Naglee Road, approx 315 feet northeast of Auto Plaza Drive (off road approx 25 feet north of curb)**

Data Summary Report



Vicinity Map: TC-06

TC-06

Site Information

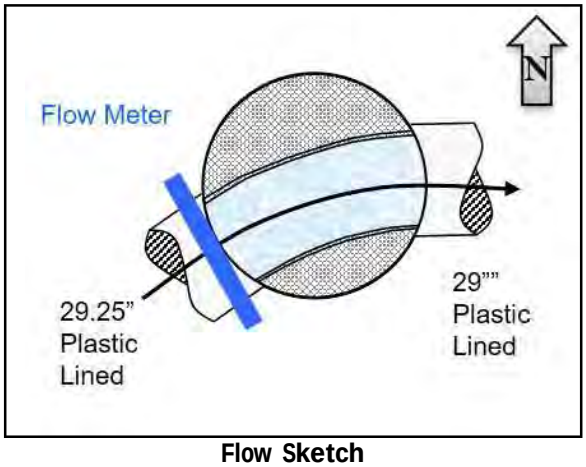
Location:	**Naglee Road, approx 315 feet northeast of Auto Plaza Drive (off road approx 25 feet north of curb)**
City Manhole:	
Coordinates:	**121.4592° W, 37.7630° N**
Rim Elevation (Earth):	**10 feet**
Pipe Diameter:	**29.25 inches**
ADWF:	**1.332 mgd**
Peak Measured Flow:	**1.777 mgd**



Satellite Map



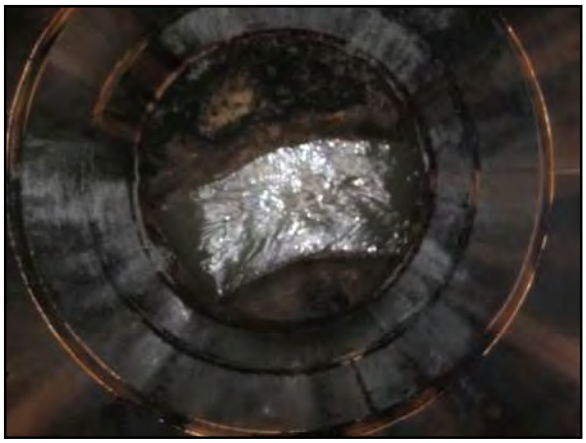
Sanitary Map



Flow Sketch



Street View



Plan View

TC-06

Additional Site Photos

Effluent Pipe



Monitored Influent Pipe

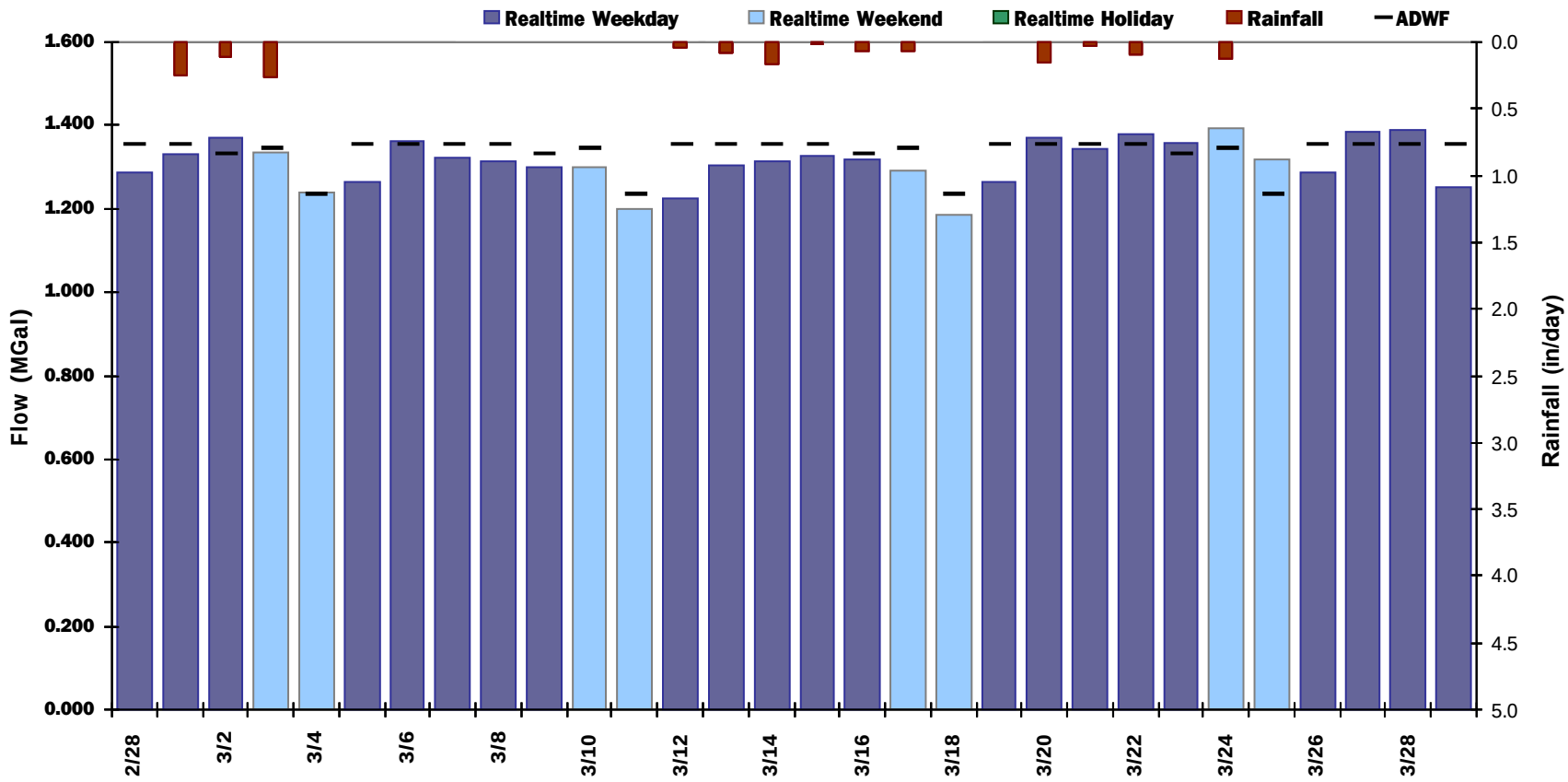


TC-06

Period Flow Summary: Daily Flow Totals

Avg Period Flow: 1.311 MGal **Peak Daily Flow: 1.391 MGal** **Min Daily Flow: 1.184 MGal**

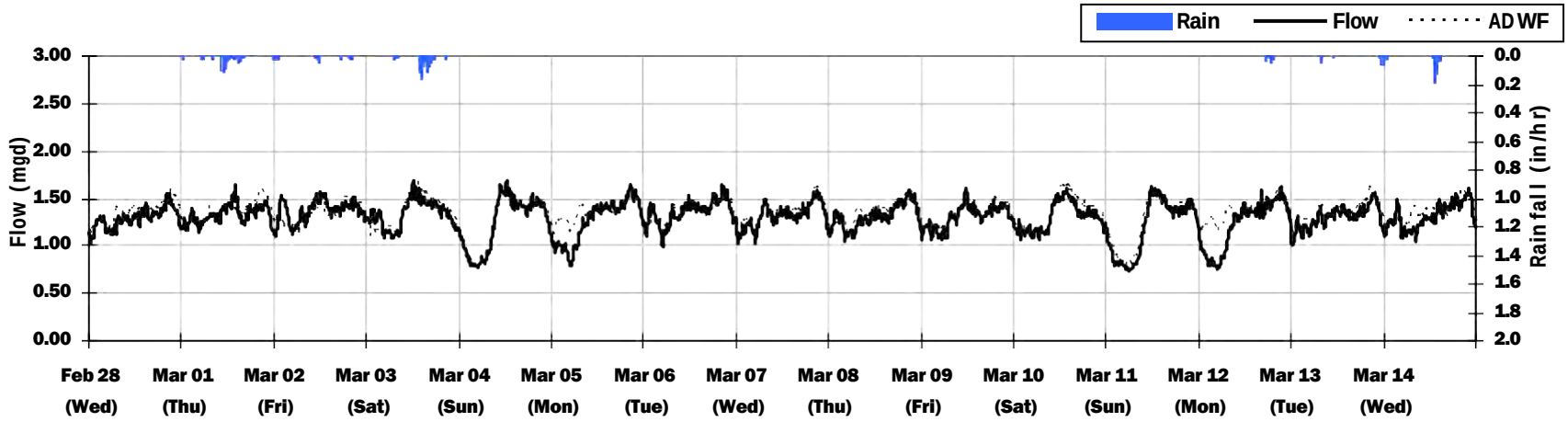
Total Period Rainfall: 1.43 inches

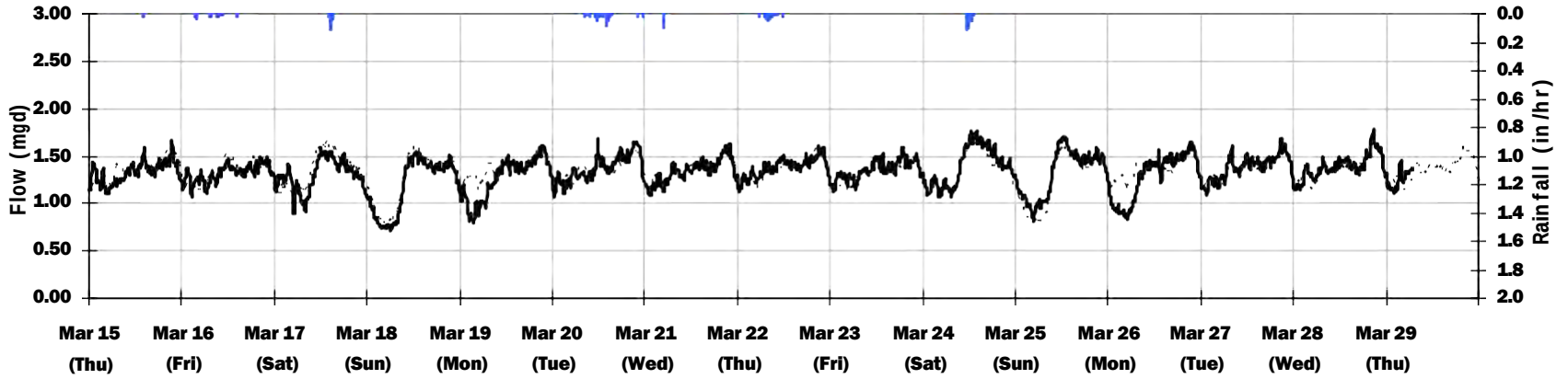


TC-06

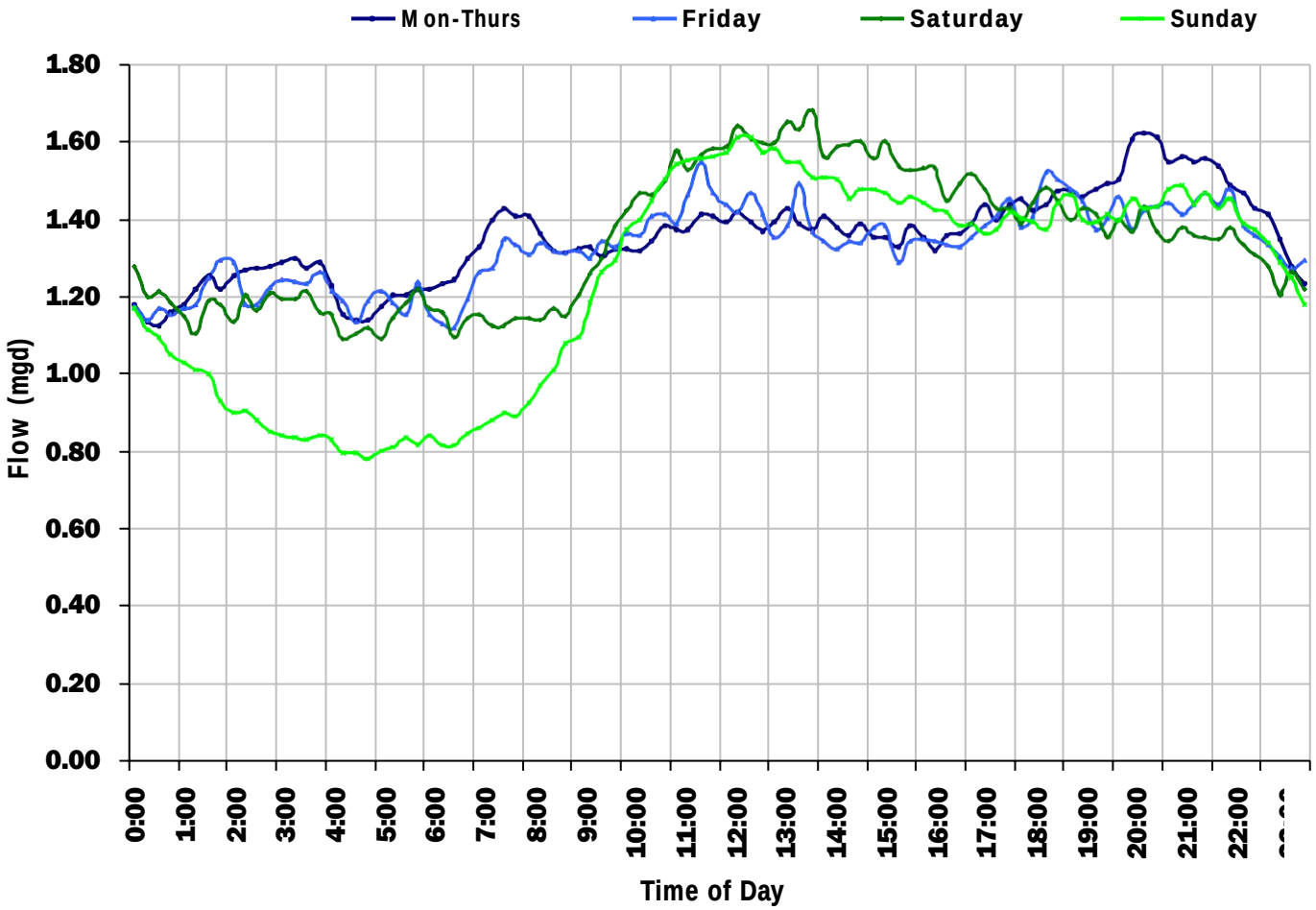
Flow Summary: 2/28/2018 to 3/29/2018

Total Period Rainfall: 1.43 inches Avg Flow: 1.312 mgd Peak Flow: 1.777 mgd Min Flow: 0.712 mgd



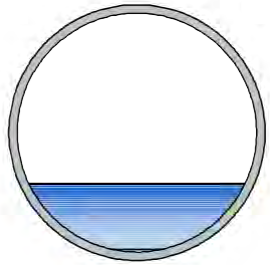


TC-06
Average Dry Weather Flow Hydrographs



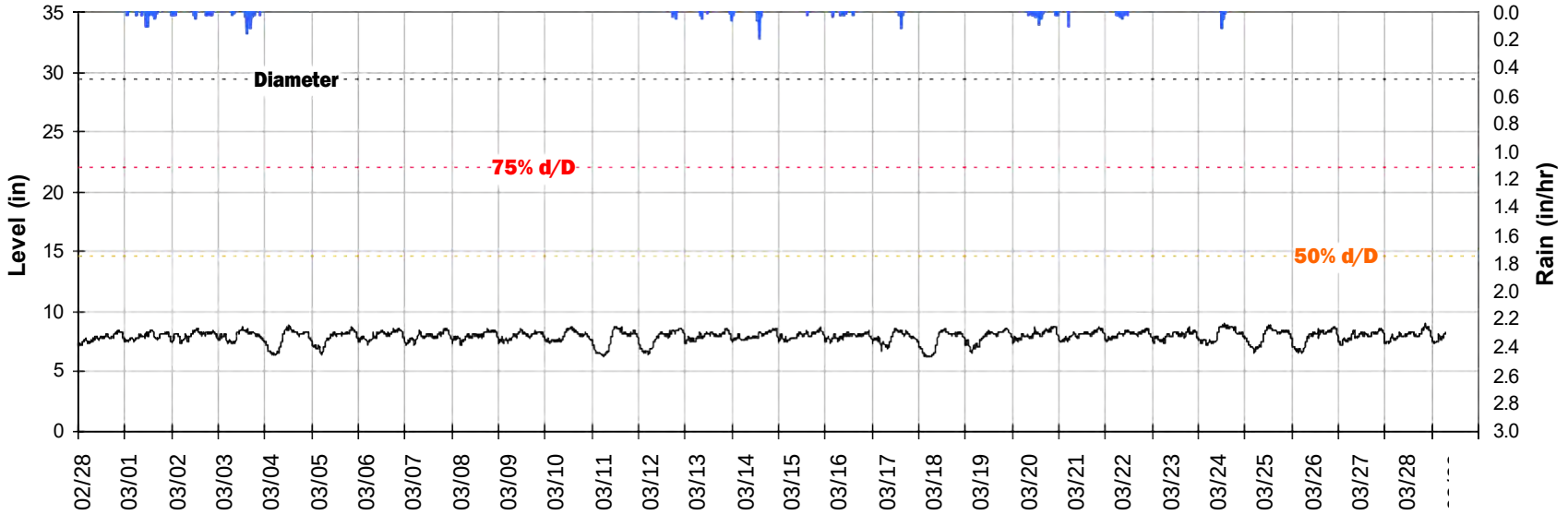
ADWF:

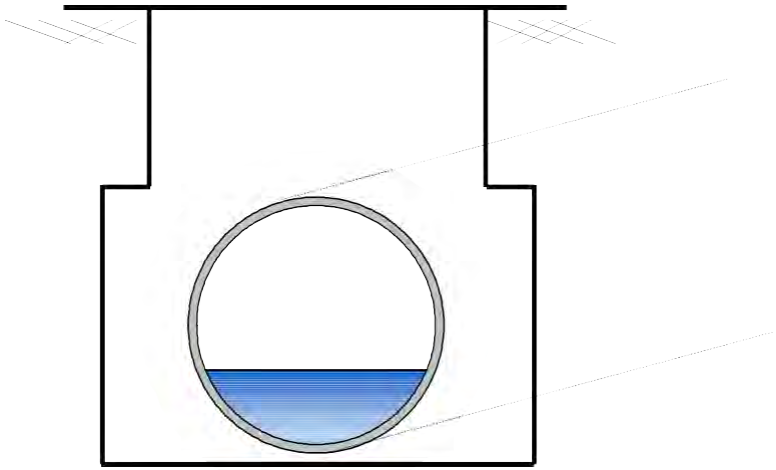
1.332 *mgd*



TC-06
Site Capacity and Surcharge Summary

Realtime Flow Levels with Rainfall Data over Monitoring Period



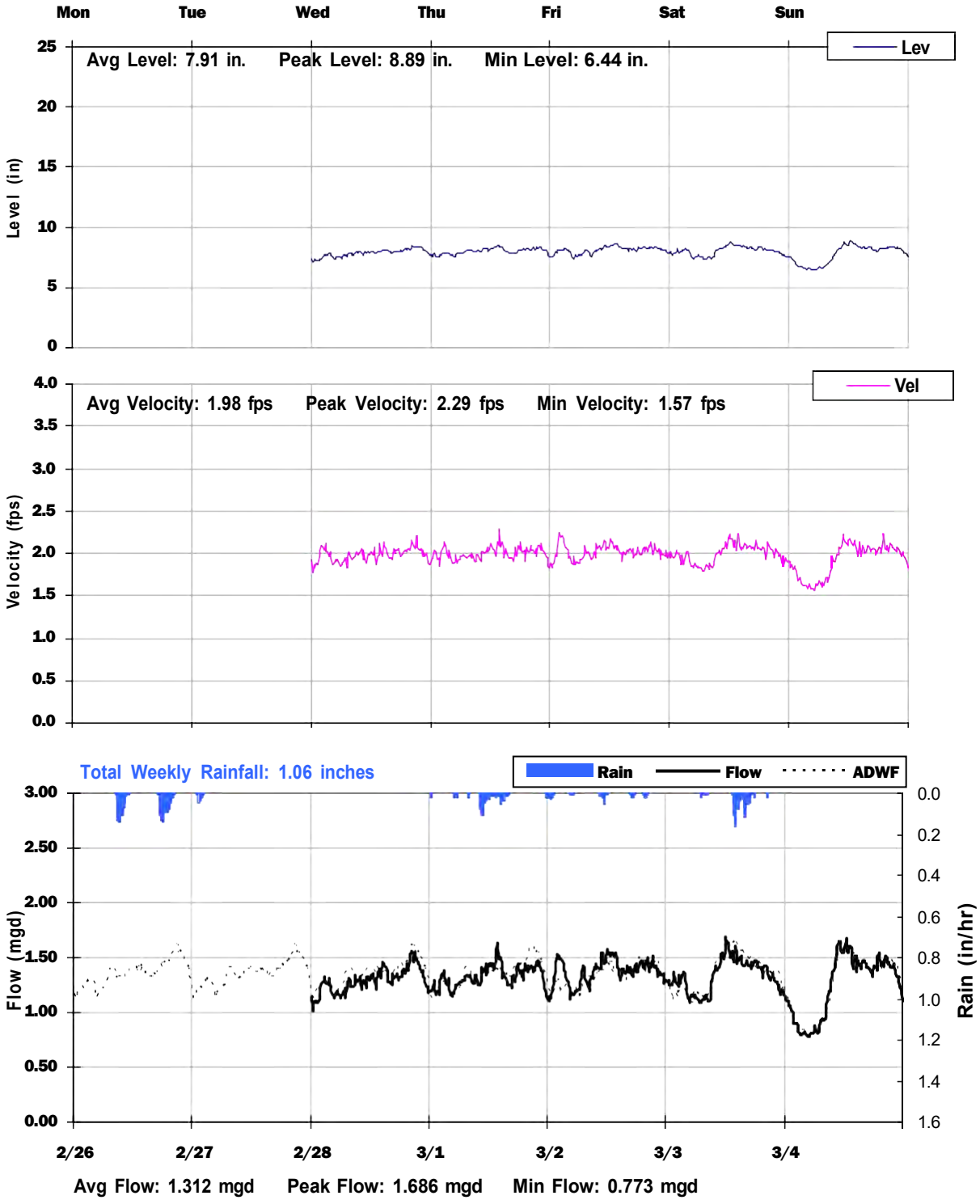


Pipe Diameter:	**29.3**	***inches***
Peak Measured Level:	**9**	***inches***
Peak d/D Ratio:	**0.31**	

TC-06

Weekly Level, Velocity and Flow Hydrographs

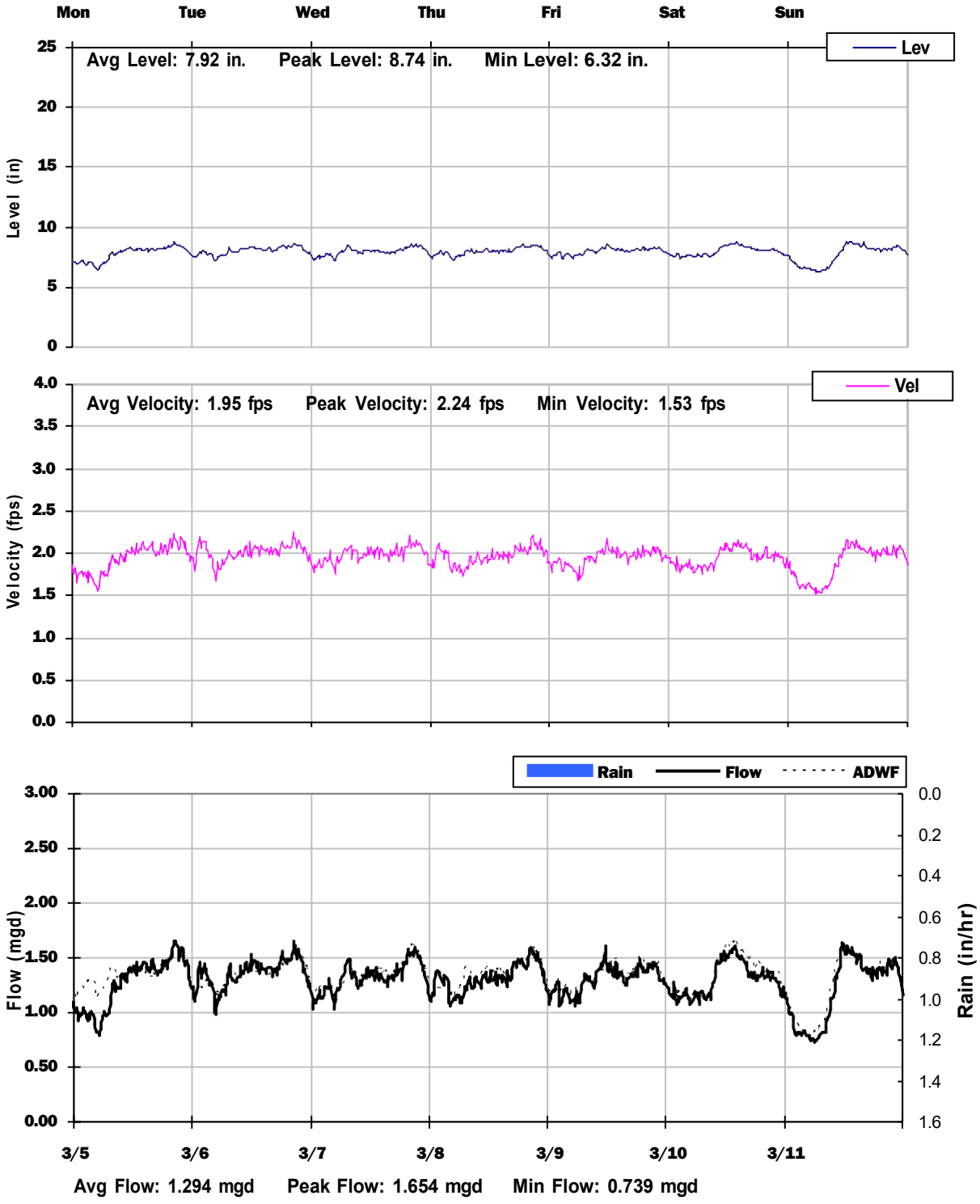
2/26/2018 to 3/5/2018



TC-06

Weekly Level, Velocity and Flow Hydrographs

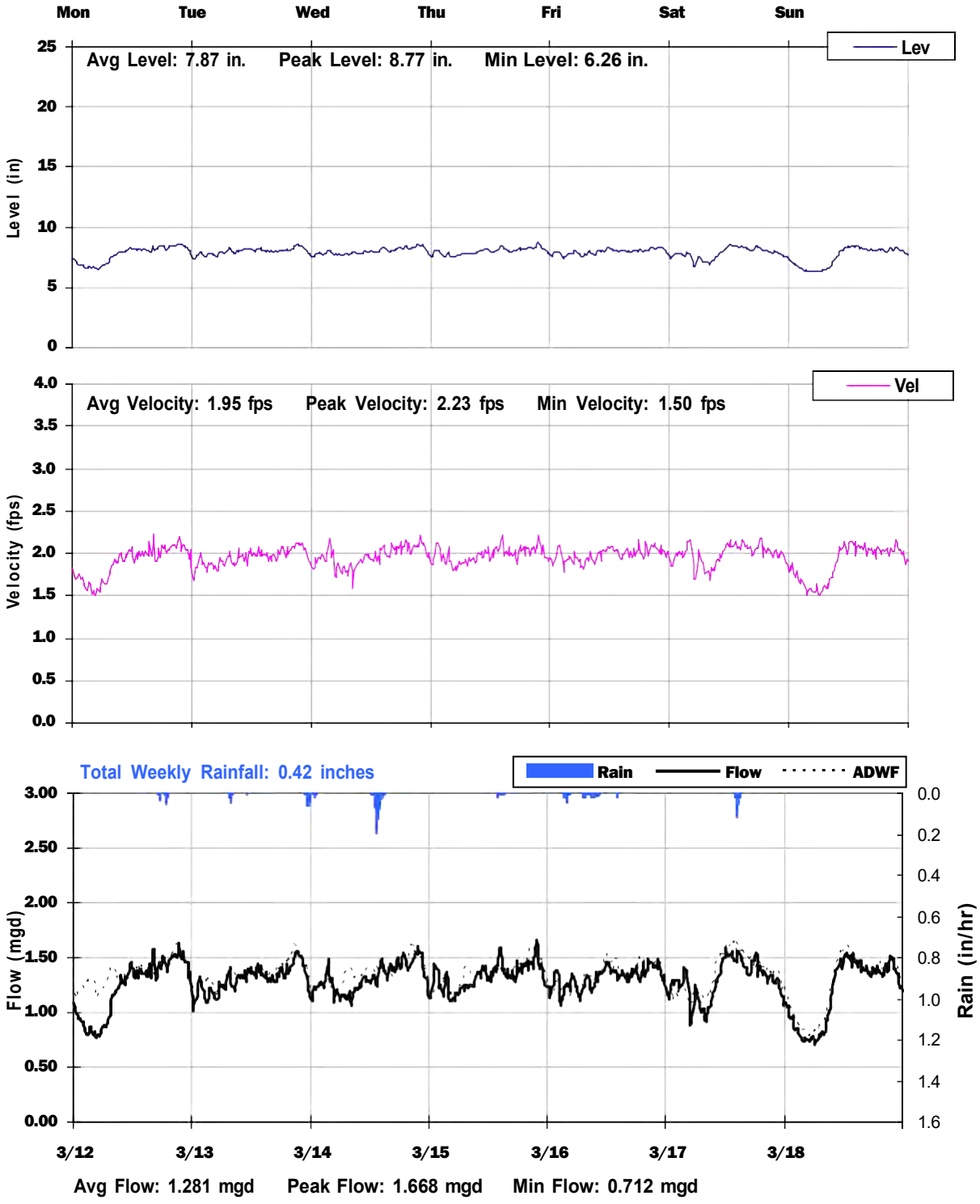
3/5/2018 to 3/12/2018



TC-06

Weekly Level, Velocity and Flow Hydrographs

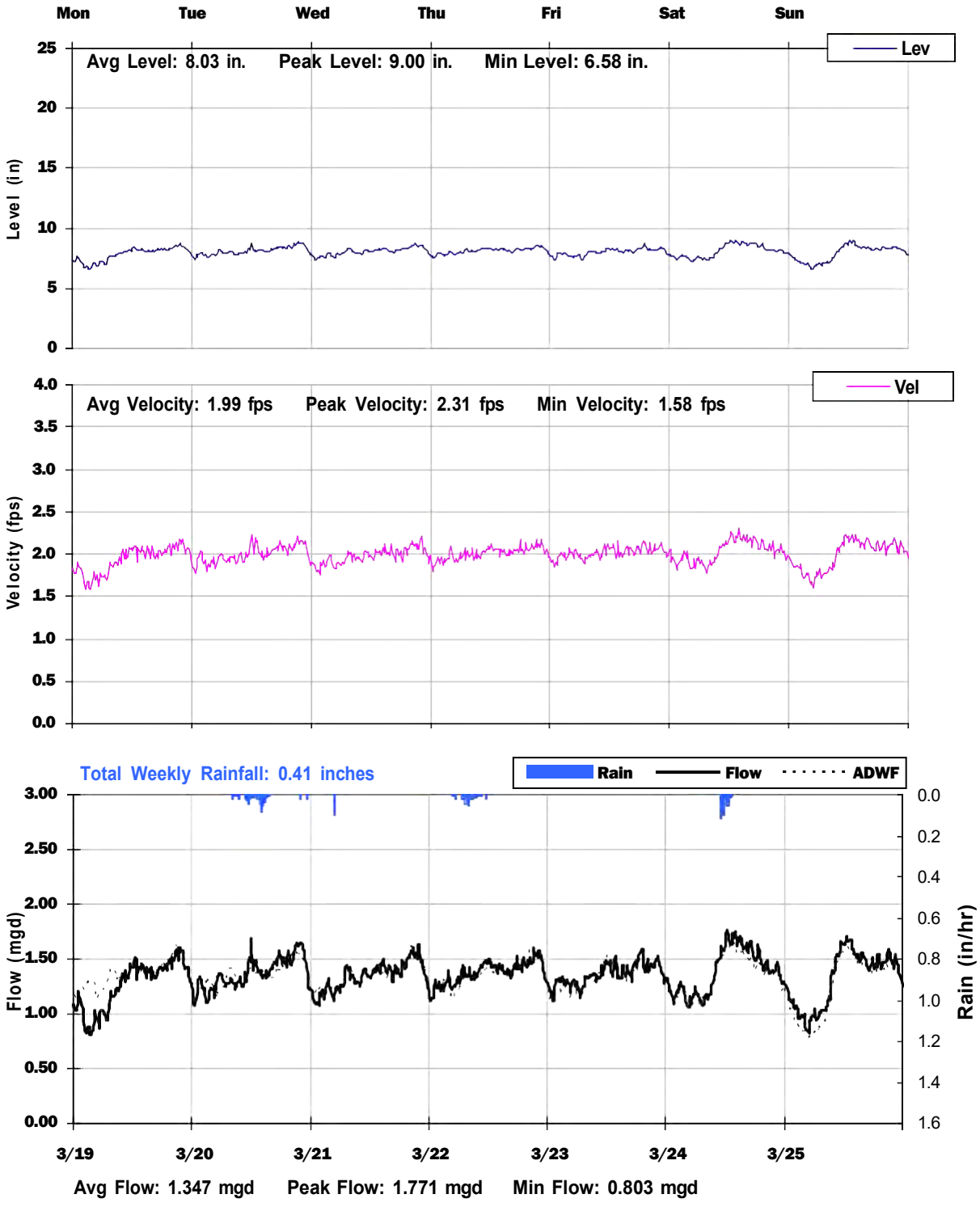
3/12/2018 to 3/19/2018



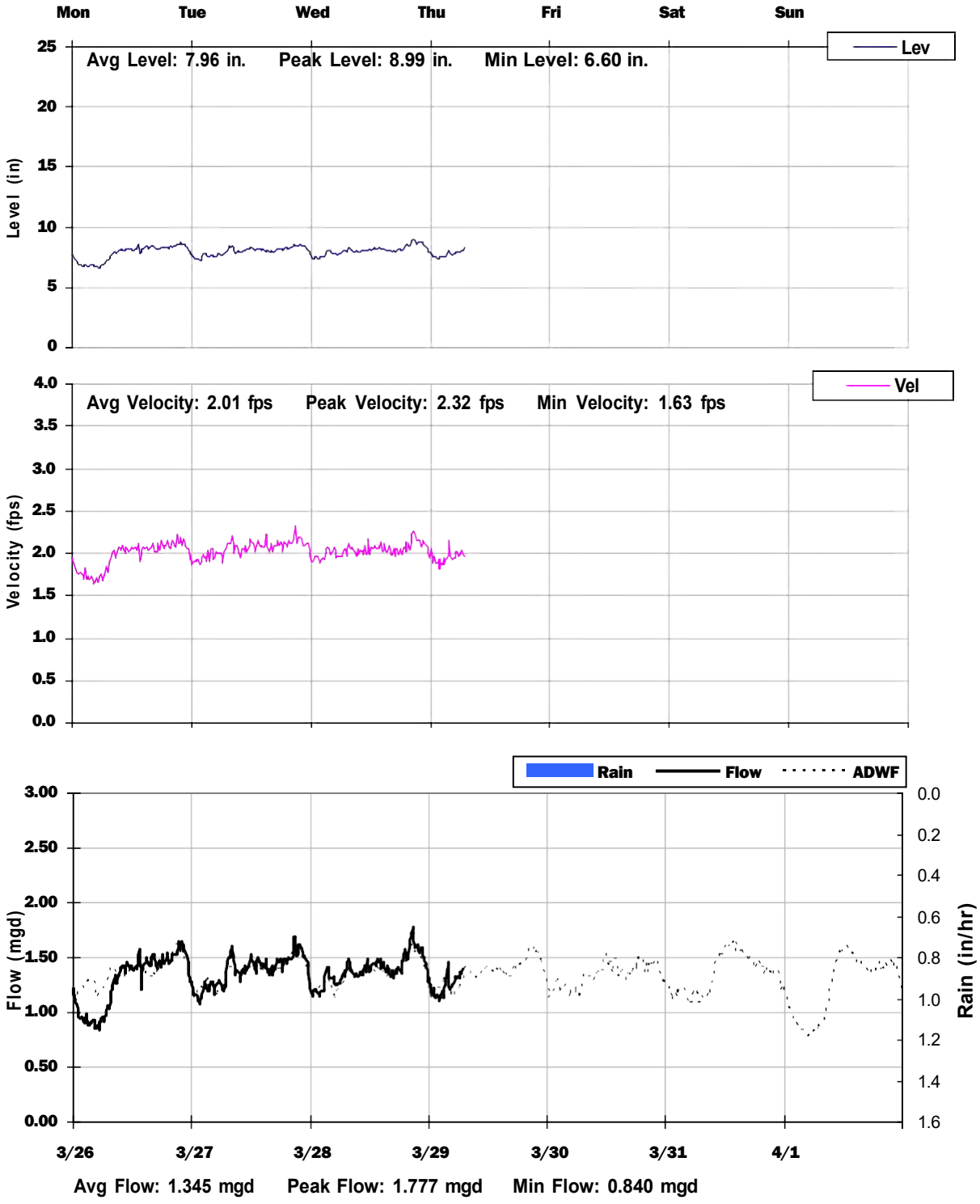
TC-06

Weekly Level, Velocity and Flow Hydrographs

3/19/2018 to 3/26/2018



TC-06
Weekly Level, Velocity and Flow Hydrographs
3/26/2018 to 4/2/2018



City of Tracy, California

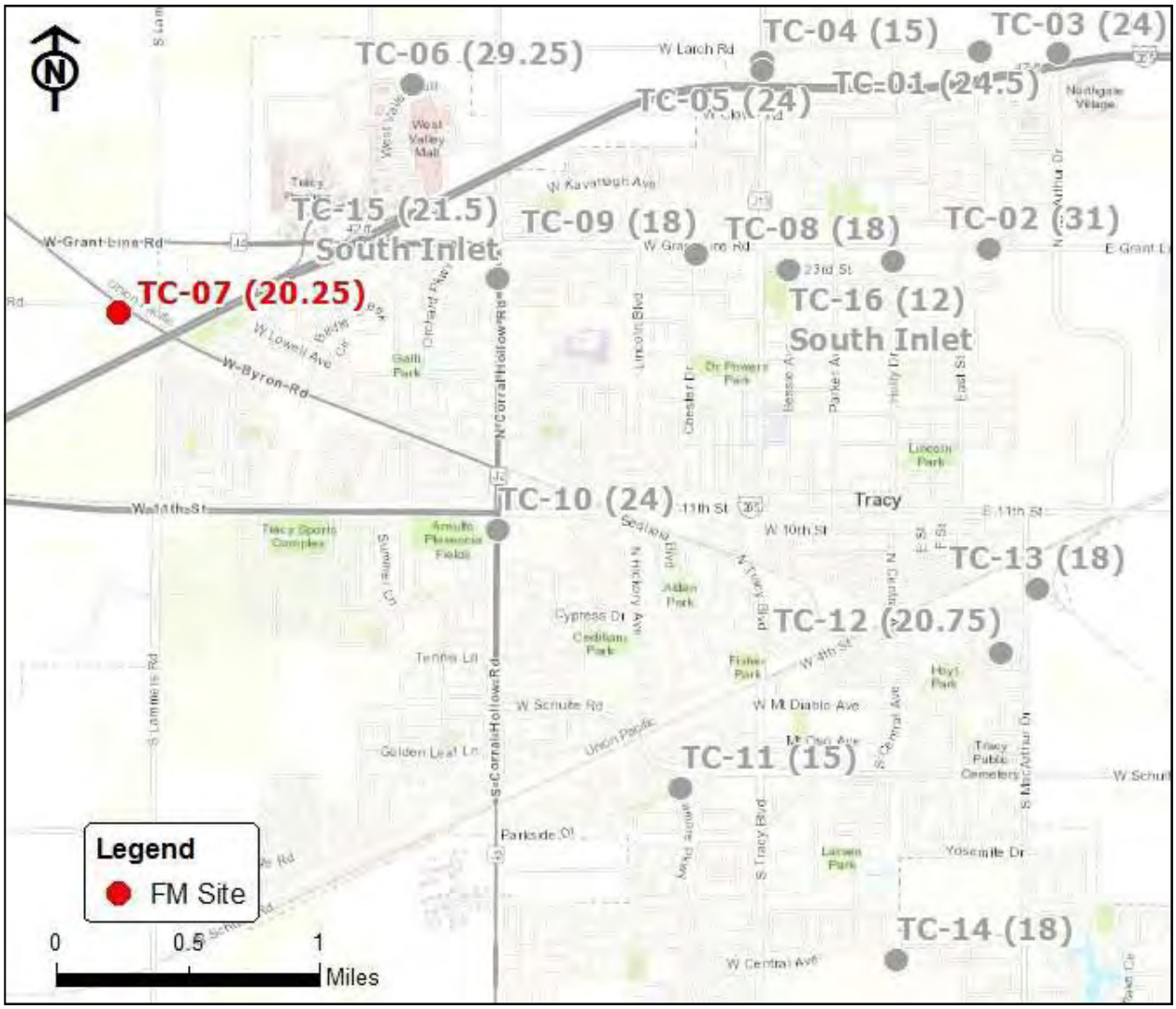
Sanitary Sewer Flow Monitoring

February 26 - April 08, 2020

Monitoring Site: **TC-07**

Location: **In field, approx 180 feet south of intersection of Byron Road and Von Sosten Road**

Data Summary Report



Vicinity Map: TC-07

TC-07

Site Information

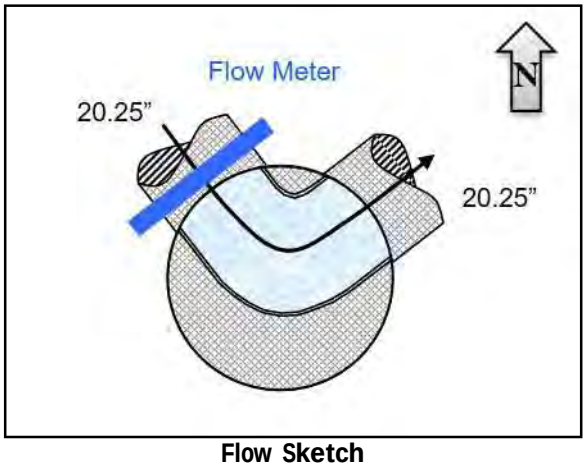
Location:	**In field, approx 180 feet south of intersection of Byron Road and Von Sosten Road**
City Manhole:	
Coordinates:	**121.4794° W, 37.7502° N**
Rim Elevation (Earth):	**29 feet**
Pipe Diameter:	**20.25 inches**
ADWF:	**0.300 mgd**
Peak Measured Flow:	**1.168 mgd**



Satellite Map



Sanitary Map



Flow Sketch



Street View



Plan View

TC-07

Additional Site Photos

Effluent Pipe



Monitored Influent Pipe

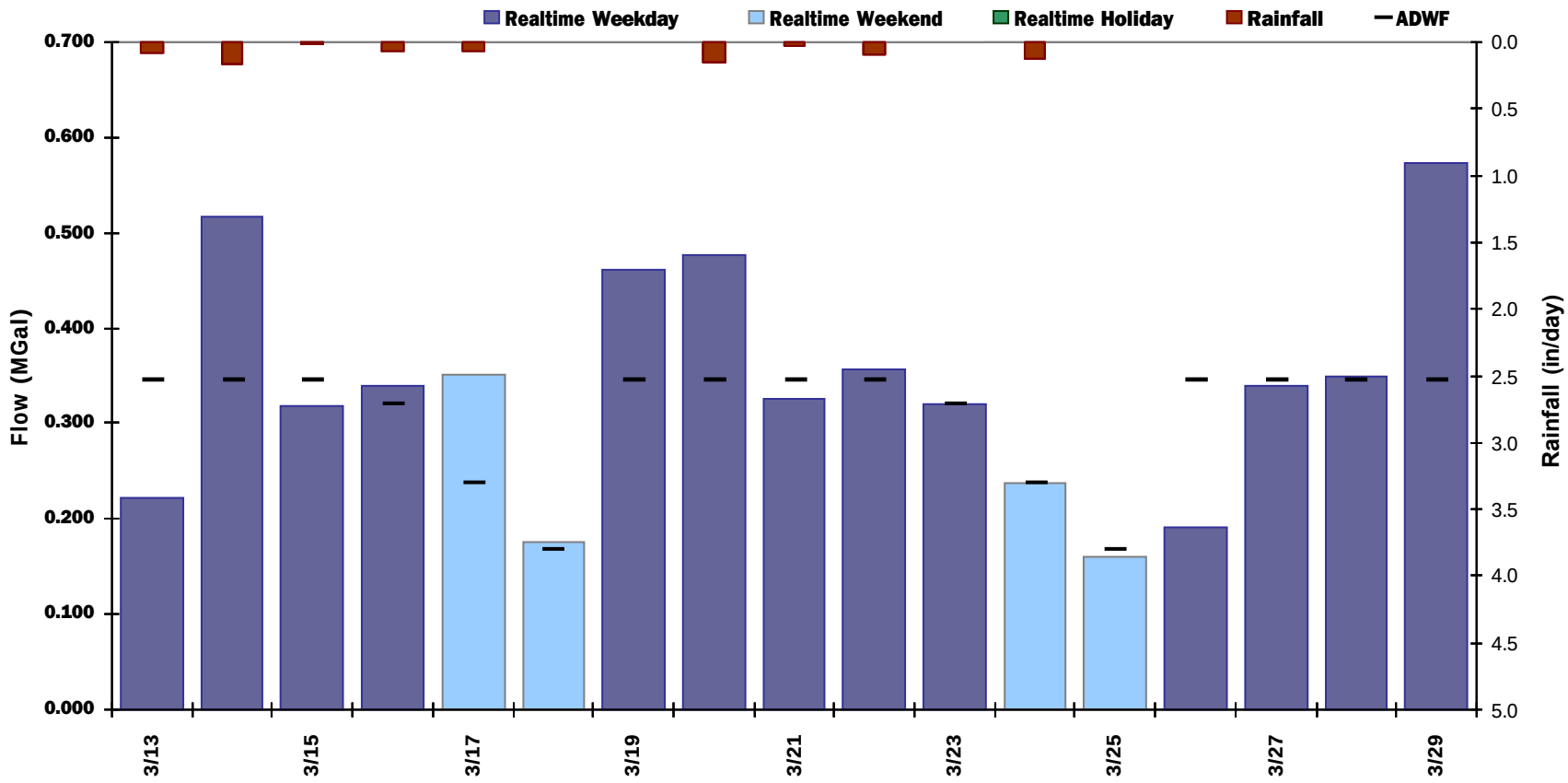


TC-07

Period Flow Summary: Daily Flow Totals

Avg Period Flow: 0.336 MGal **Peak Daily Flow: 0.572 MGal** **Min Daily Flow: 0.161 MGal**

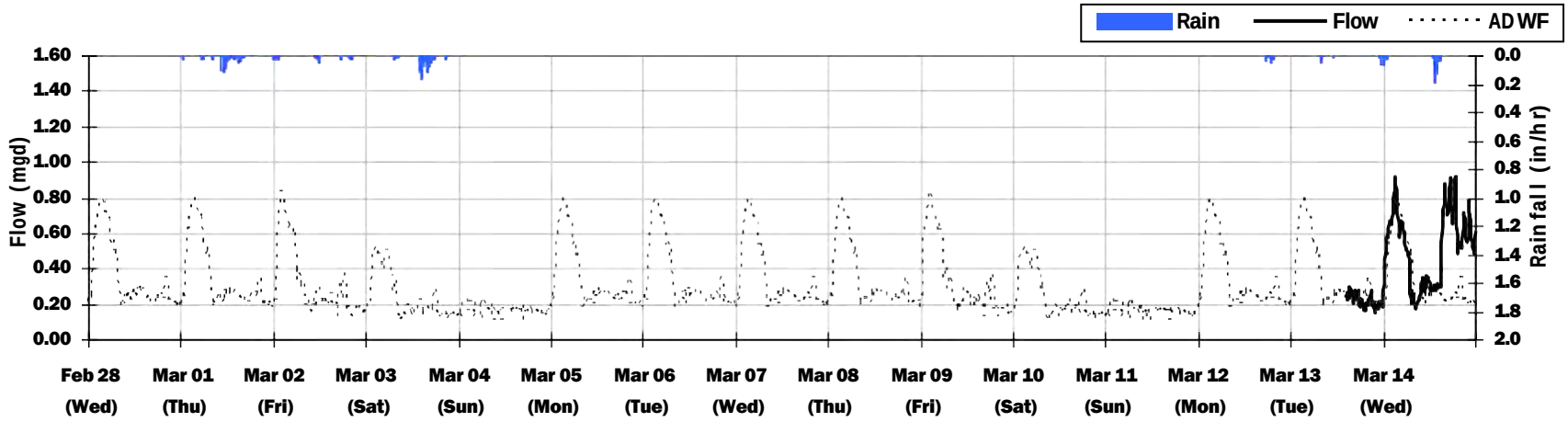
Total Period Rainfall: 0.77 inches

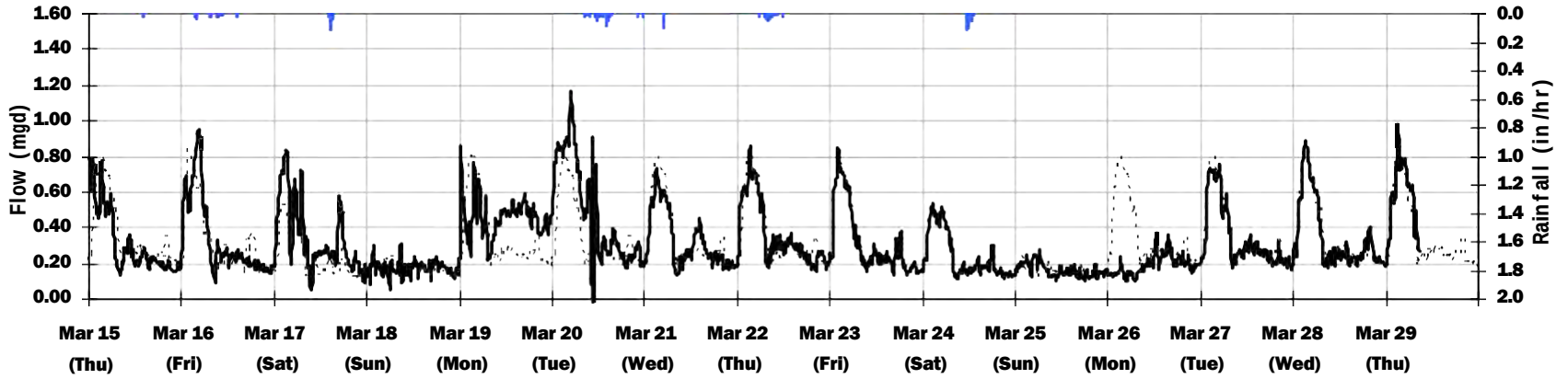


TC-07

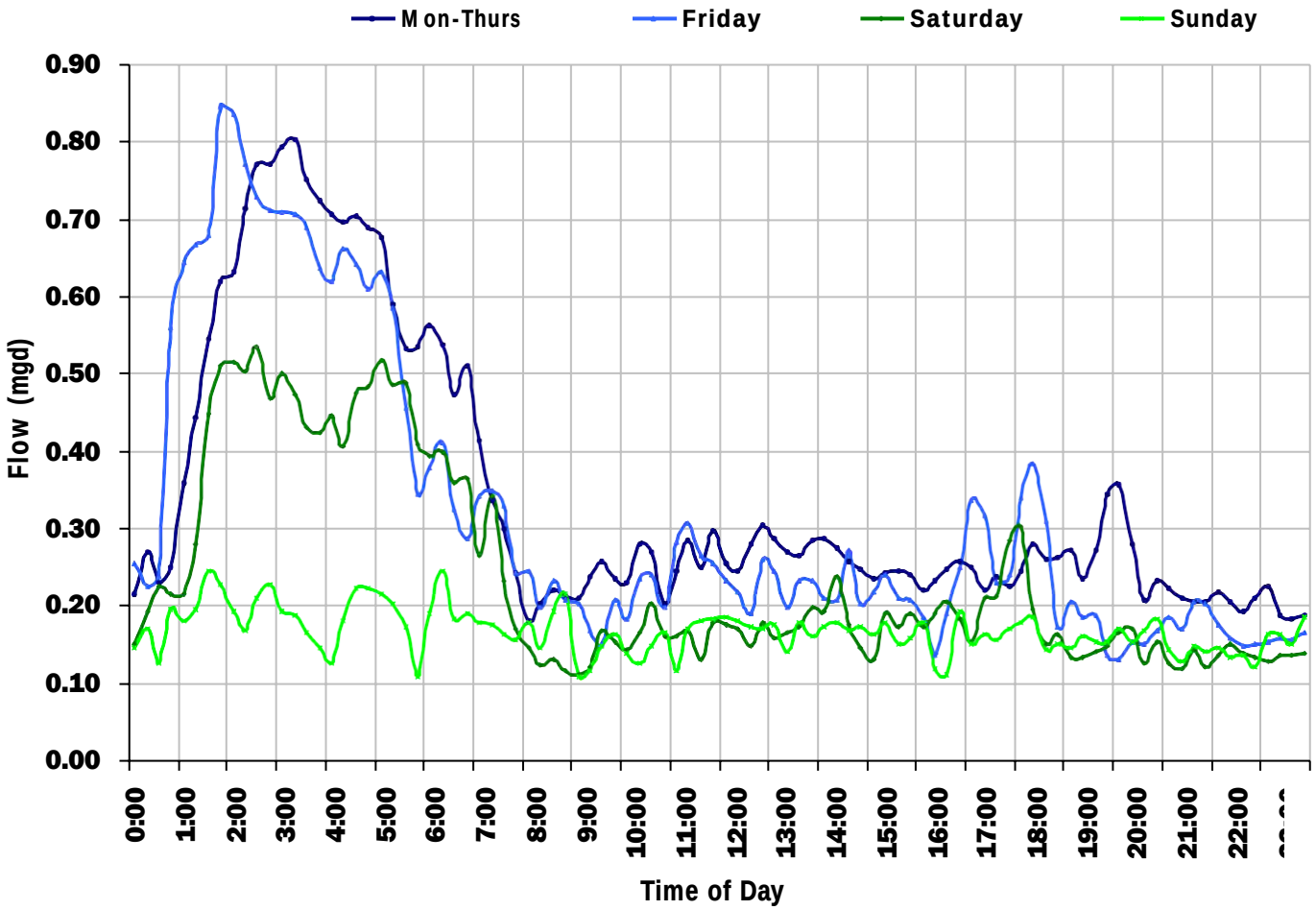
Flow Summary: 2/28/2018 to 3/29/2018

Total Period Rainfall: 1.43 inches Avg Flow: 0.331 mgd Peak Flow: 1.168 mgd Min Flow: -0.821 mgd



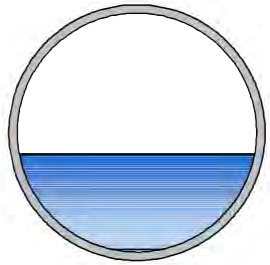


TC-07
Average Dry Weather Flow Hydrographs



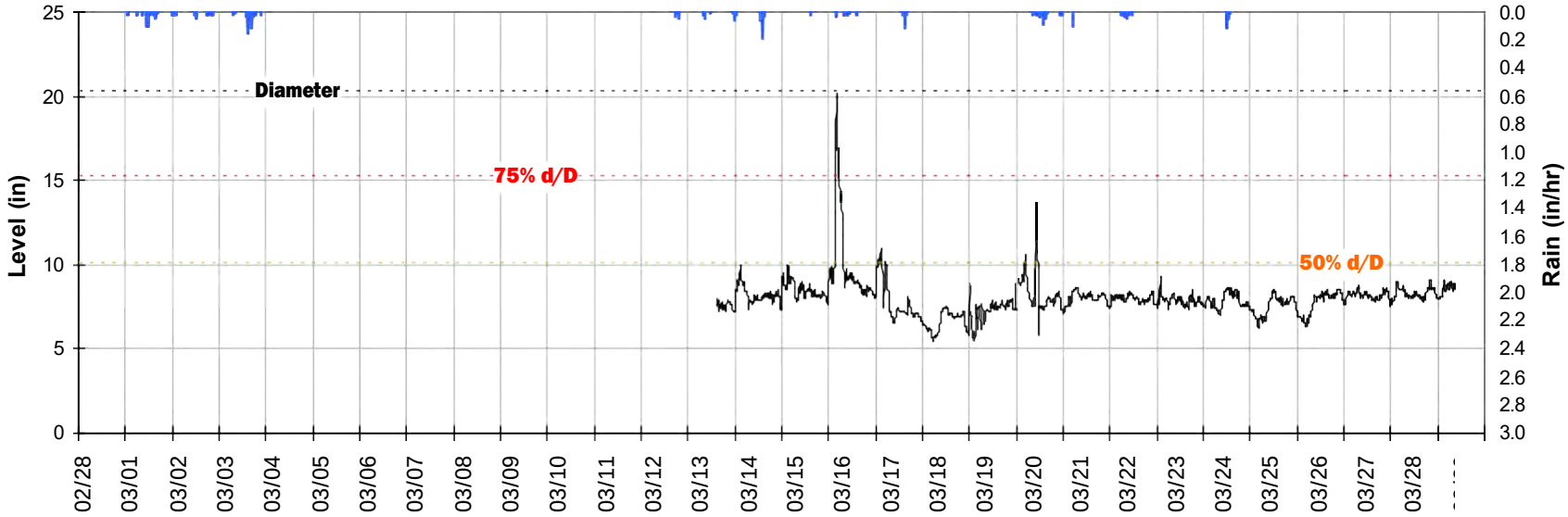
ADWF:

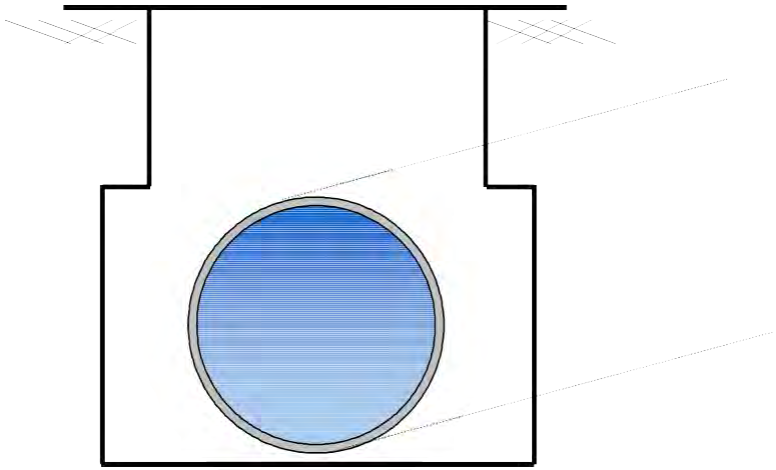
0.300 *mgd*



TC-07
Site Capacity and Surcharge Summary

Realtime Flow Levels with Rainfall Data over Monitoring Period



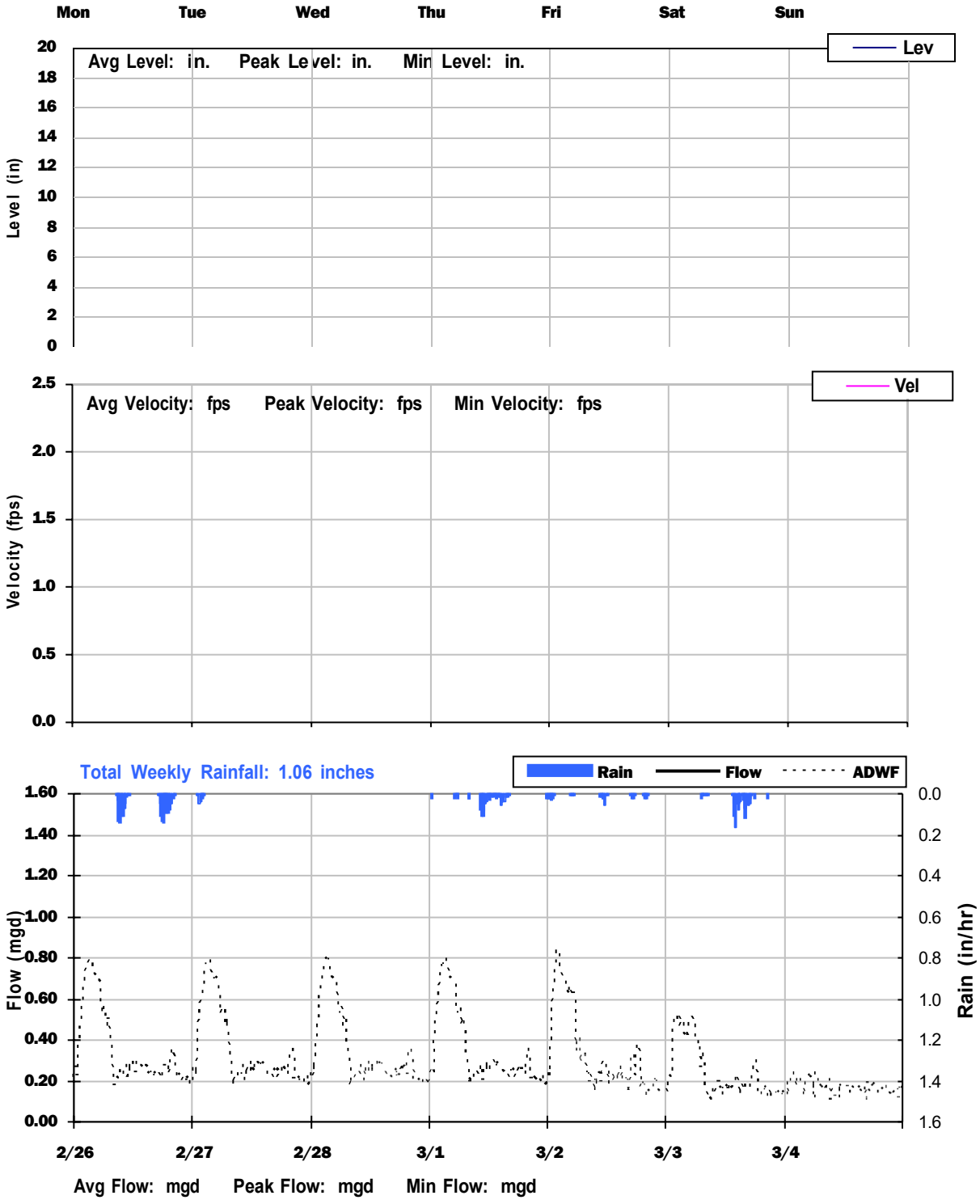


Pipe Diameter:	**20.3**	***inches***
Peak Measured Level:	**20.2**	***inches***
Peak d/D Ratio:	**1.00**	

TC-07

Weekly Level, Velocity and Flow Hydrographs

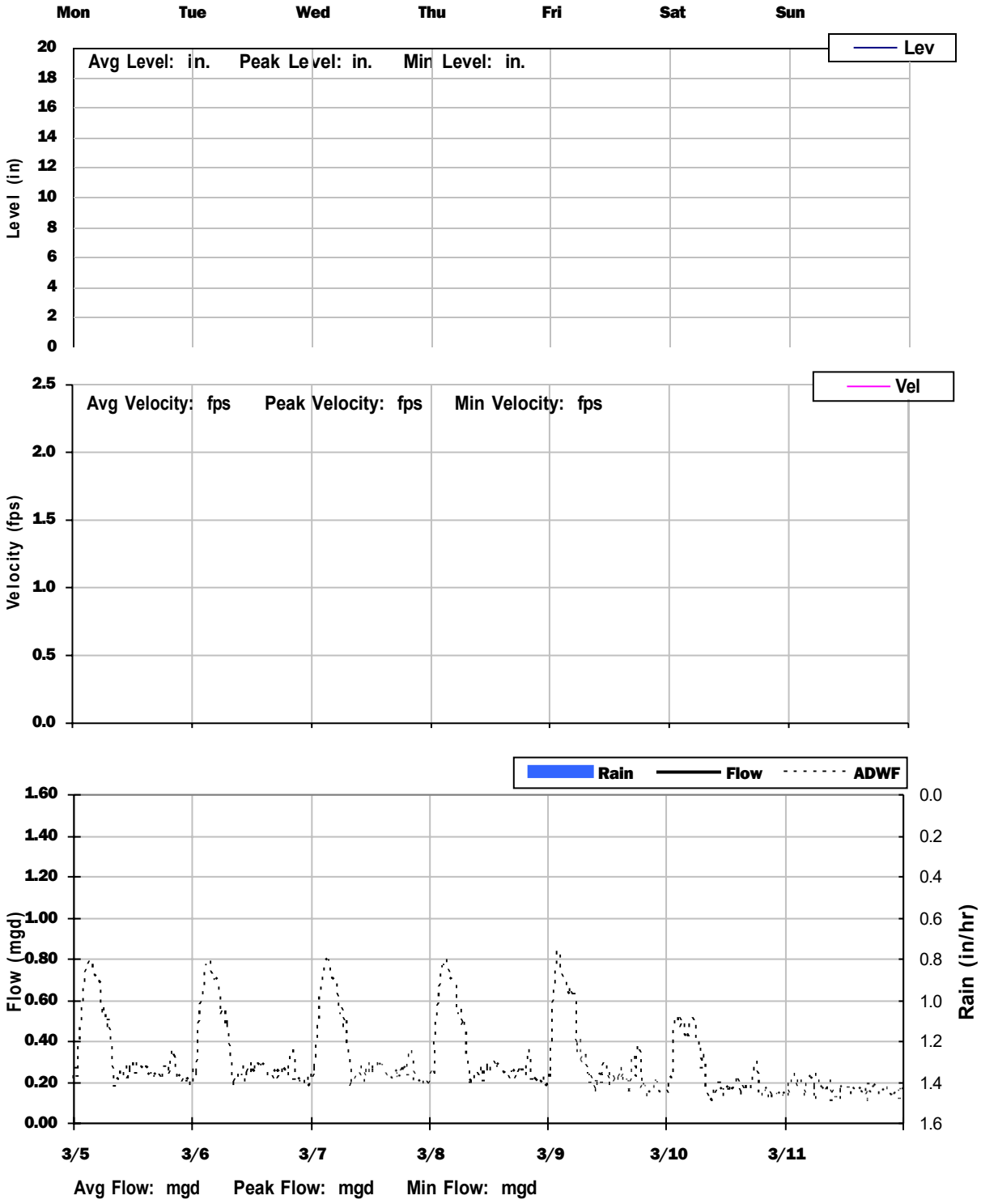
2/26/2018 to 3/5/2018



TC-07

Weekly Level, Velocity and Flow Hydrographs

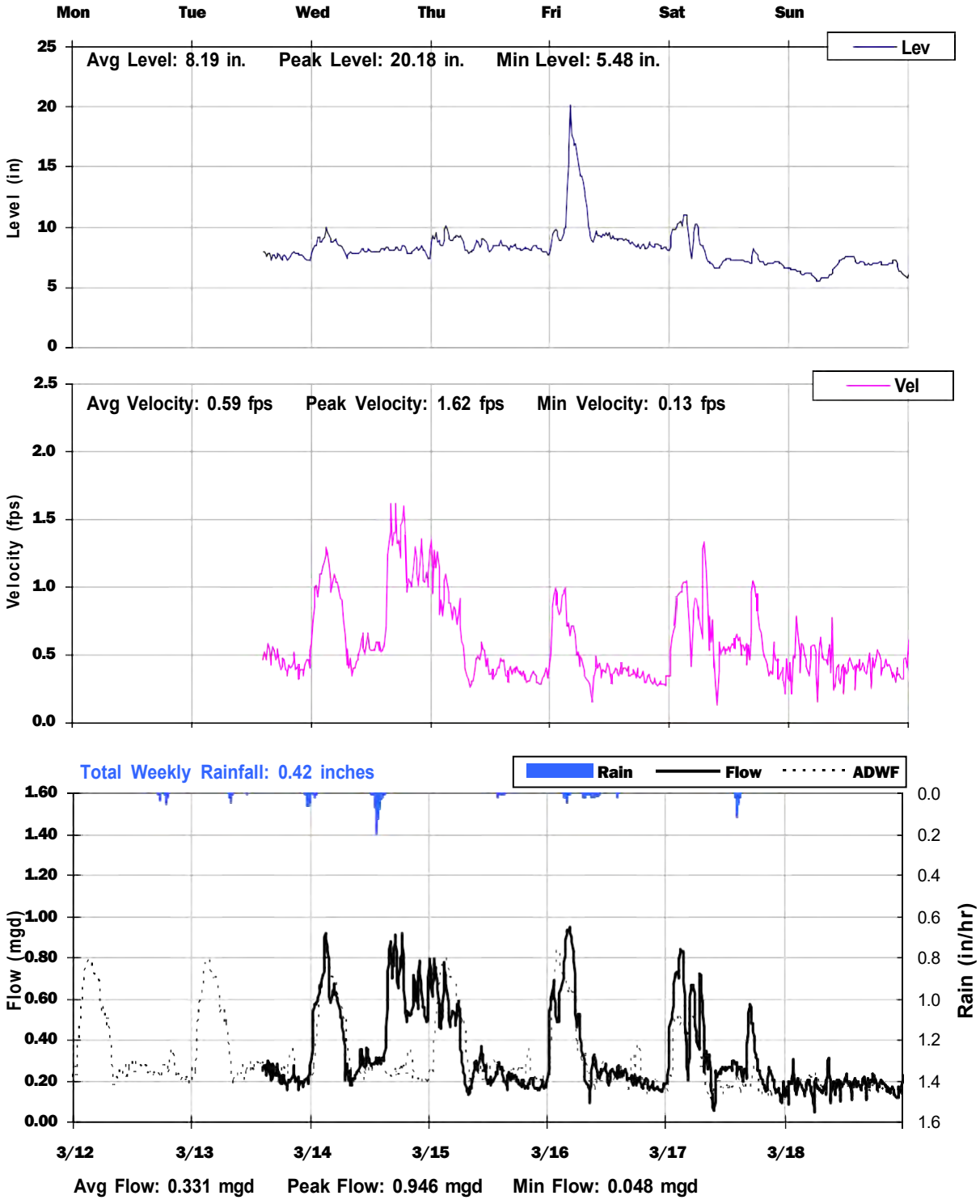
3/5/2018 to 3/12/2018



TC-07

Weekly Level, Velocity and Flow Hydrographs

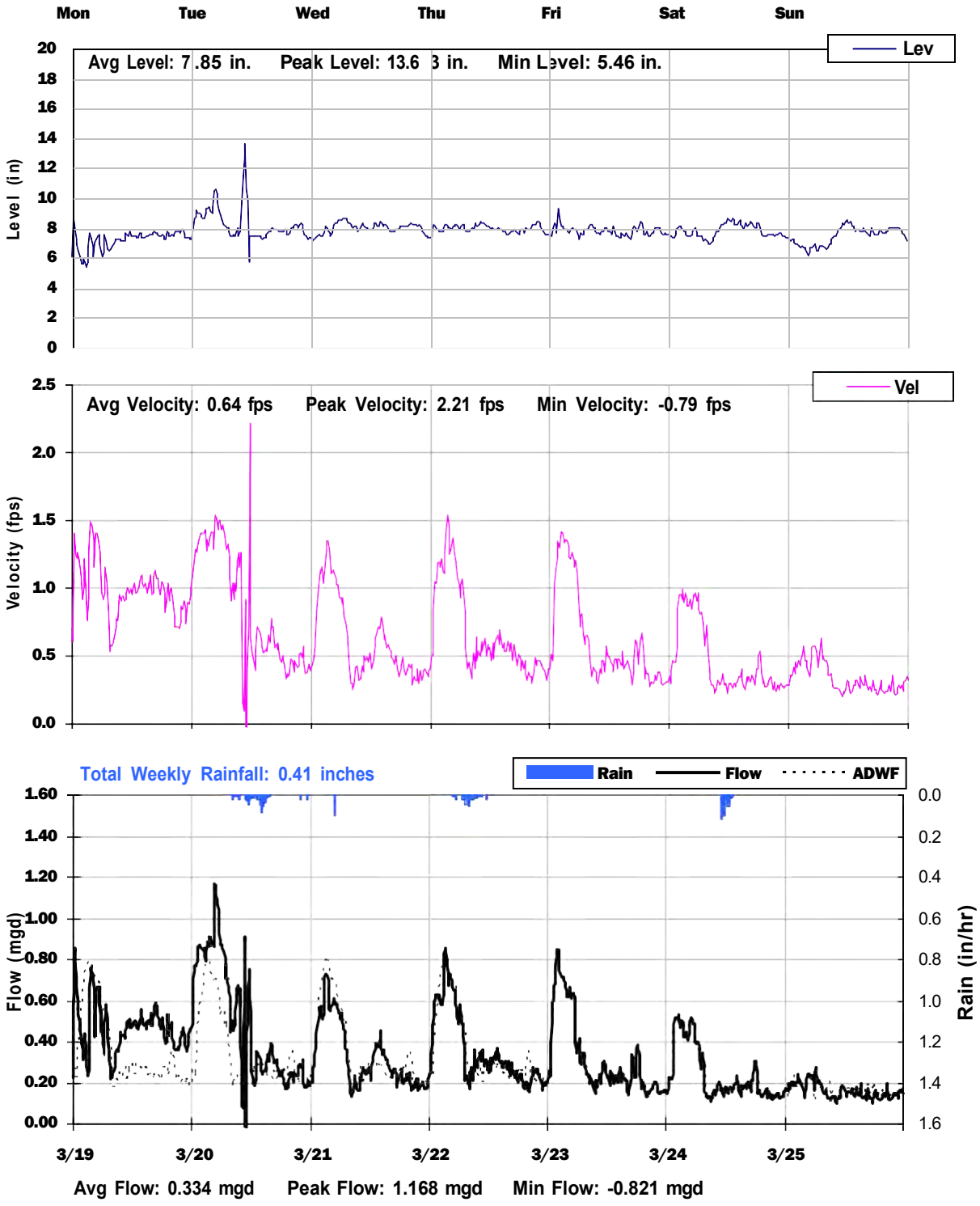
3/12/2018 to 3/19/2018



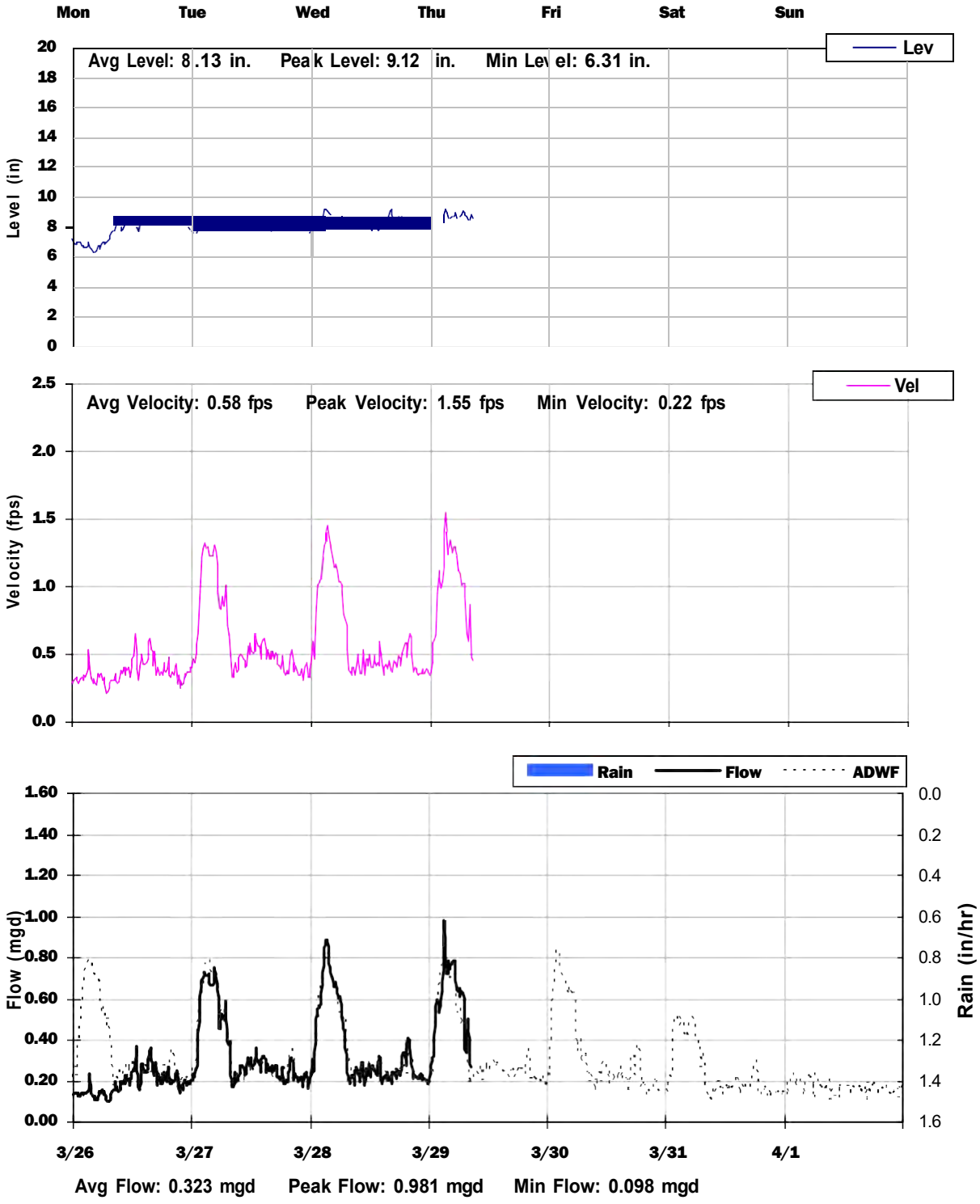
TC-07

Weekly Level, Velocity and Flow Hydrographs

3/19/2018 to 3/26/2018



TC-07
Weekly Level, Velocity and Flow Hydrographs
3/26/2018 to 4/2/2018



City of Tracy, California

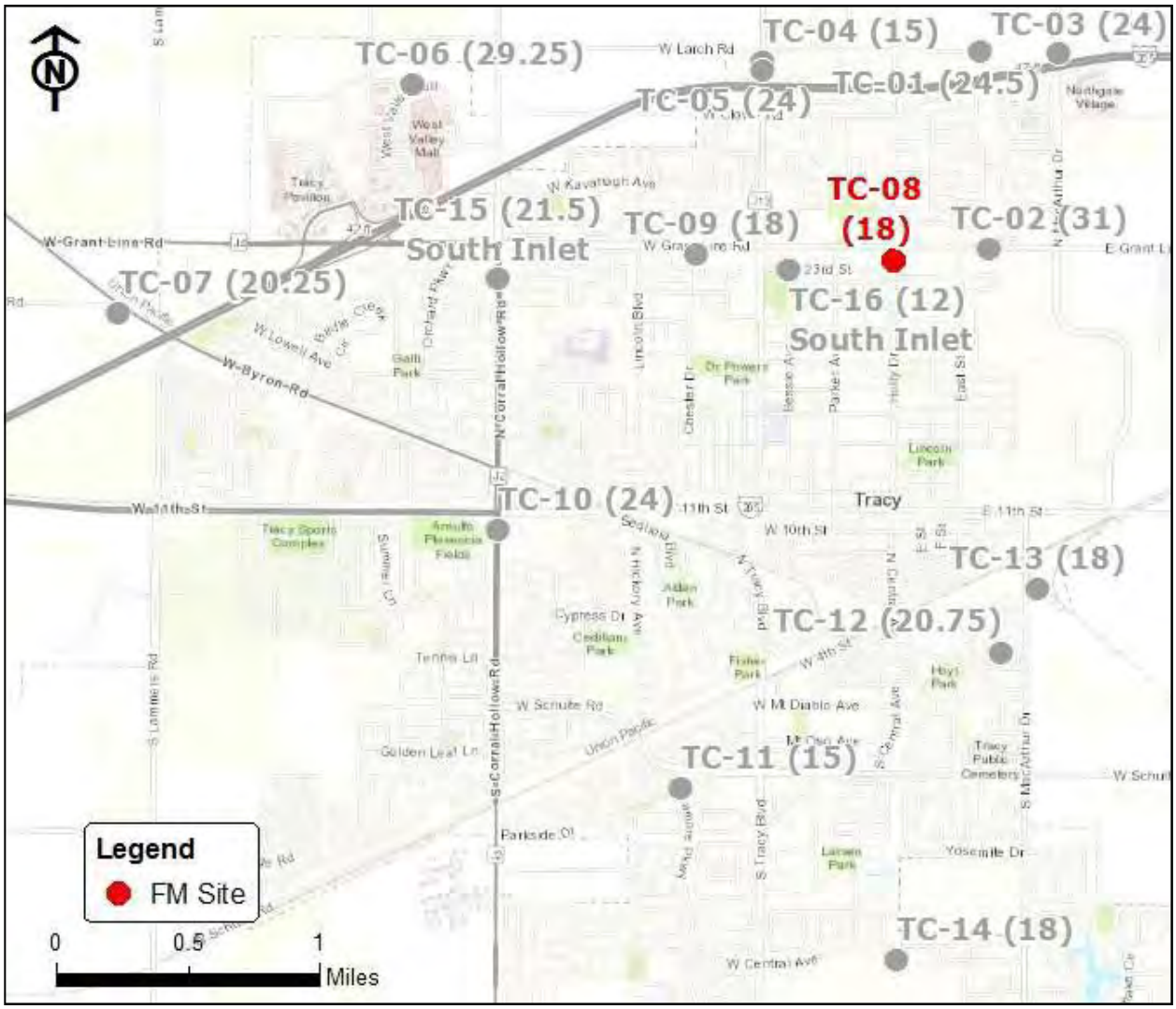
Sanitary Sewer Flow Monitoring

February 26 - April 08, 2020

Monitoring Site: **TC-08**

Location: **2322 Holly Drive, south of Grant Line Road**

Data Summary Report



Vicinity Map: TC-08

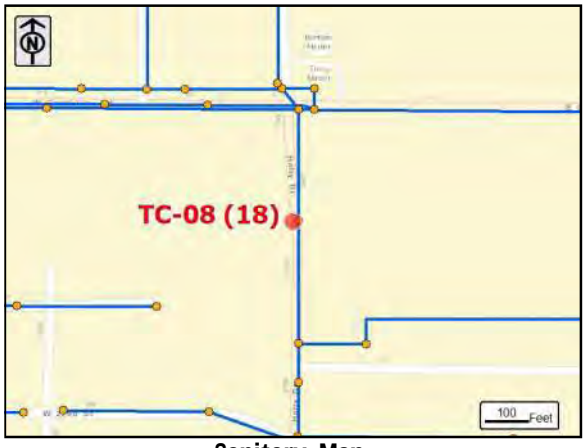
TC-08

Site Information

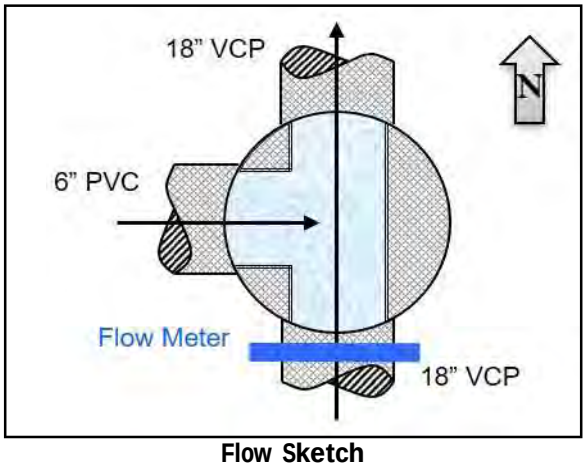
Location:	**2322 Holly Drive, south of Grant Line Road**
City Manhole:	
Coordinates:	**121.4259° W, 37.7535° N**
Rim Elevation (Earth):	**39 feet**
Pipe Diameter:	**18 inches**
ADWF:	**0.447 mgd**
Peak Measured Flow:	**0.912 mgd**



Satellite Map



Sanitary Map



Flow Sketch



Street View



Plan View

TC-08

Additional Site Photos

Effluent Pipe



Monitored South Influent Pipe



TC-08

Additional Site Photos

West Lateral

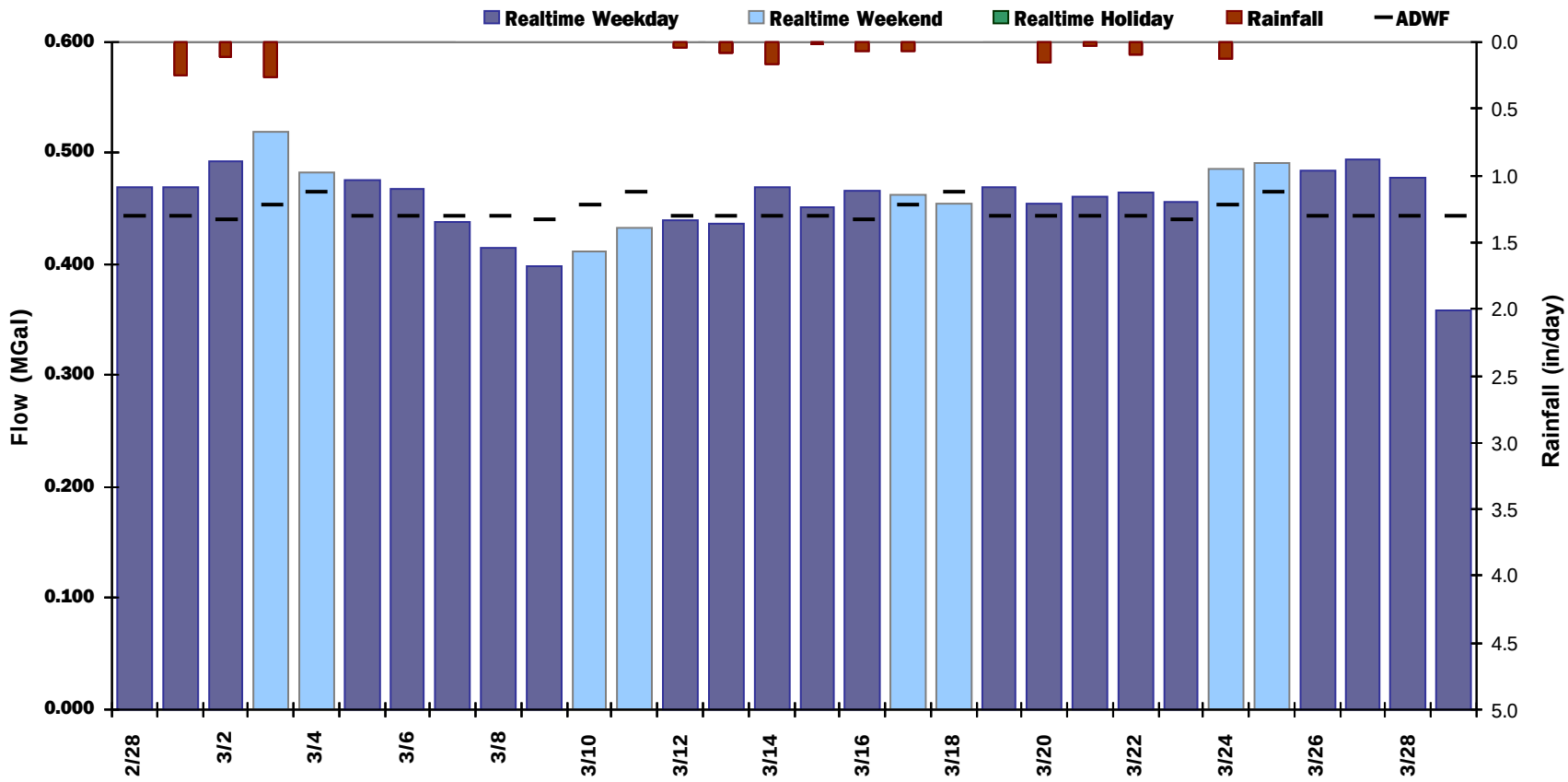


TC-08

Period Flow Summary: Daily Flow Totals

Avg Period Flow: 0.458 MGal **Peak Daily Flow: 0.518 MGal** **Min Daily Flow: 0.359 MGal**

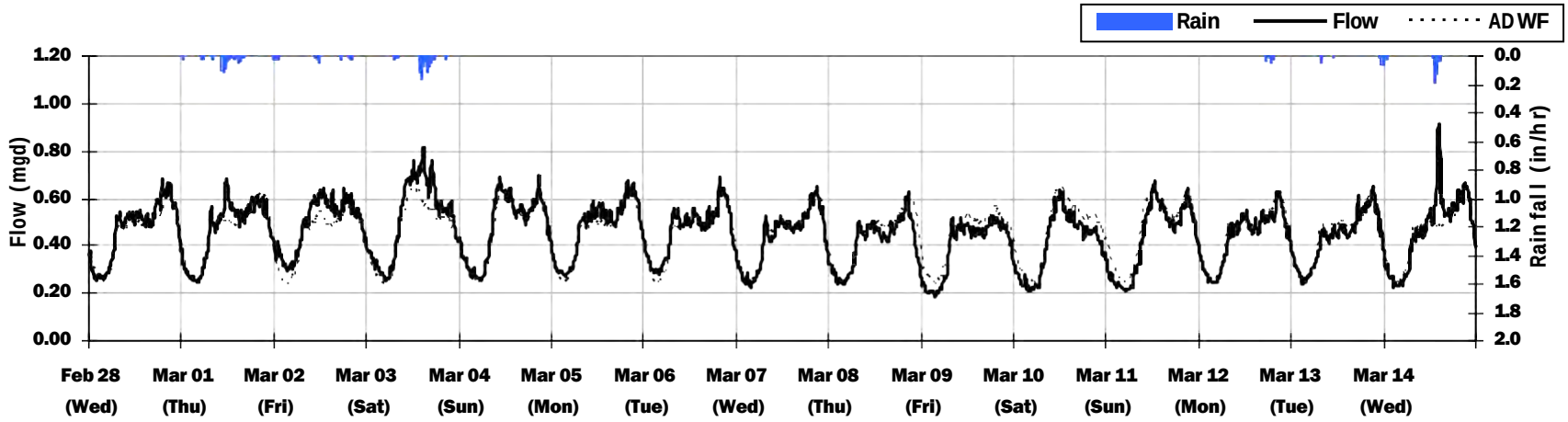
Total Period Rainfall: 1.43 inches

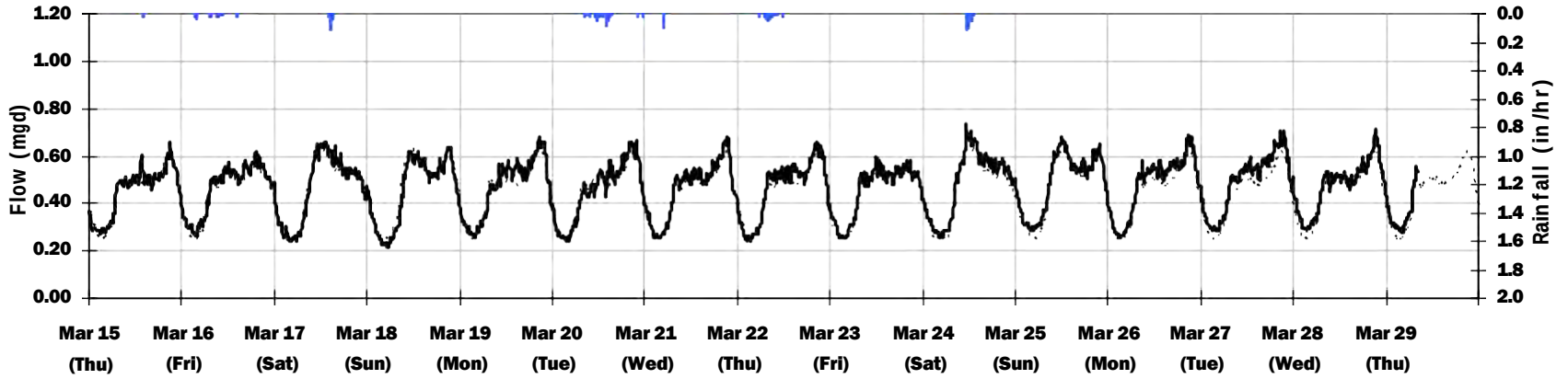


TC-08

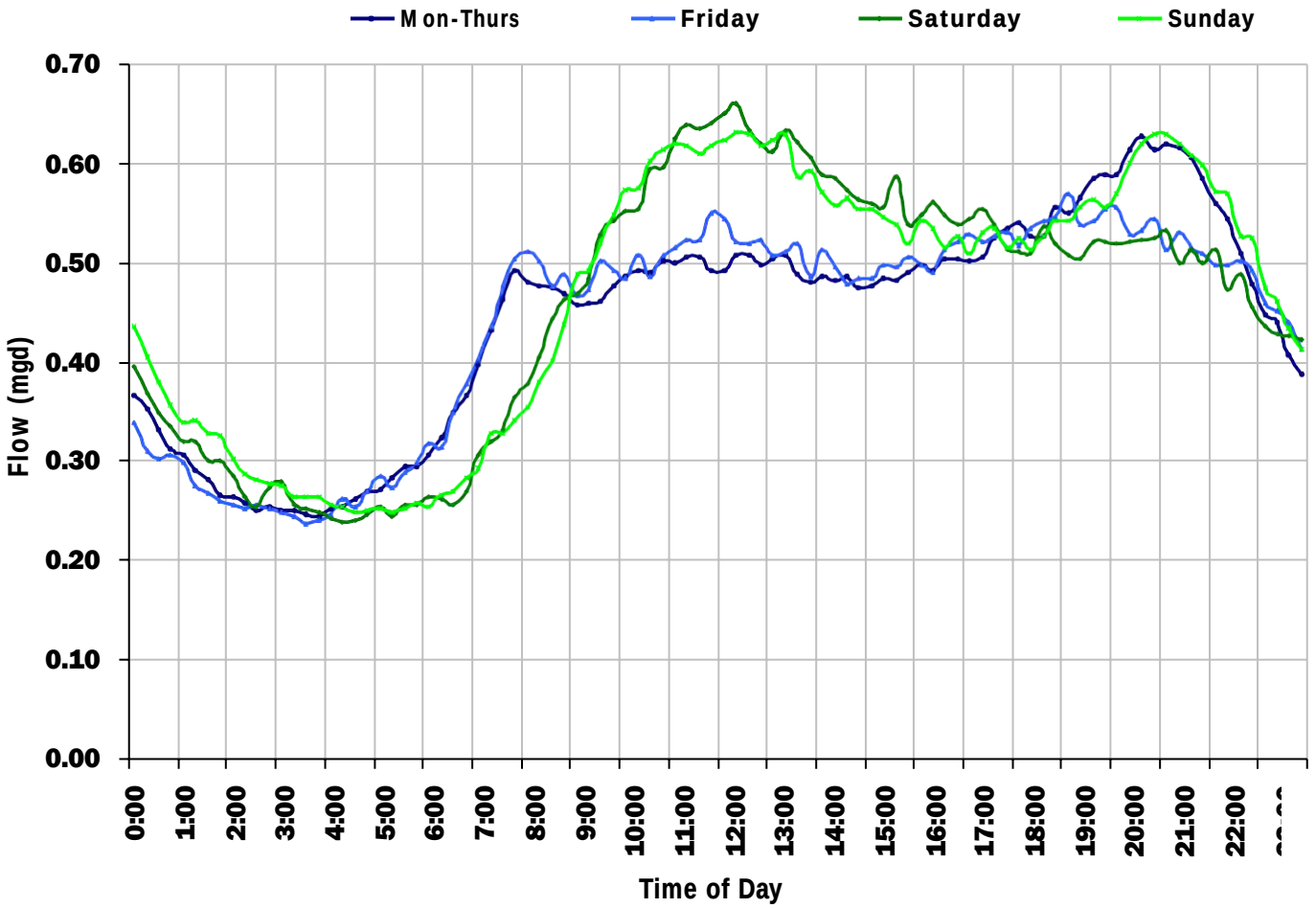
Flow Summary: 2/28/2018 to 3/29/2018

Total Period Rainfall: 1.43 inches Avg Flow: 0.461 mgd Peak Flow: 0.912 mgd Min Flow: 0.187 mgd



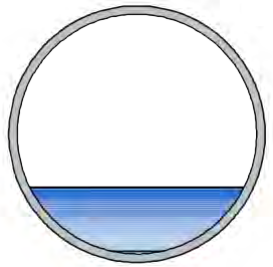


TC-08
Average Dry Weather Flow Hydrographs



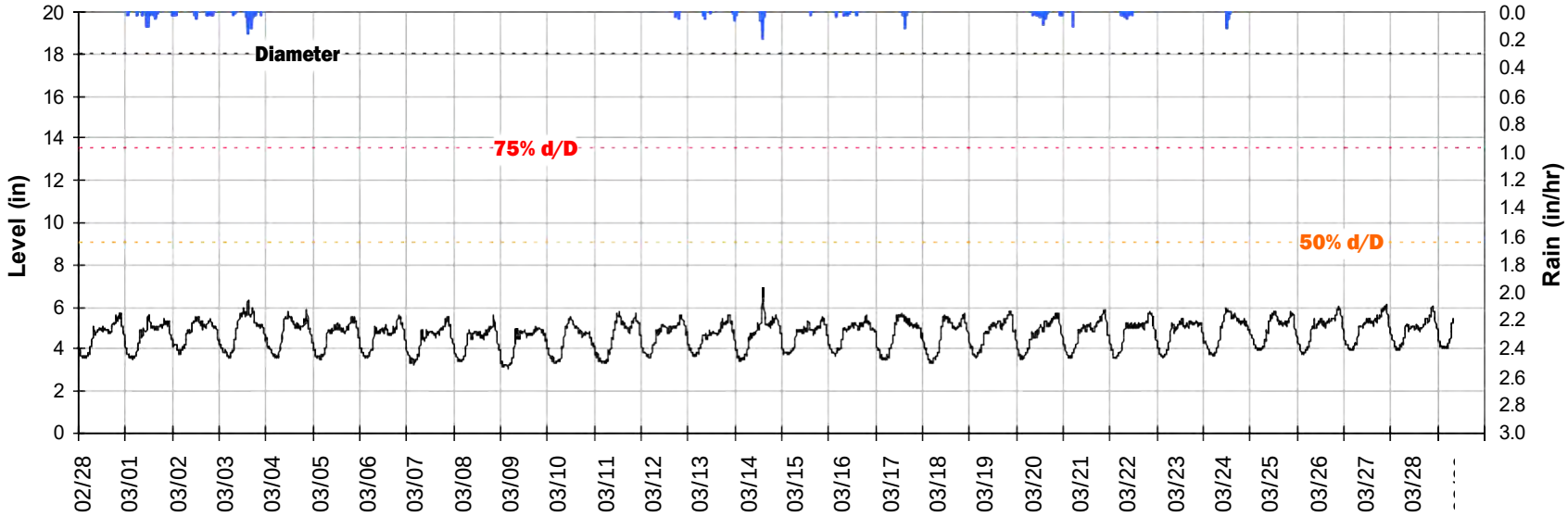
ADWF:

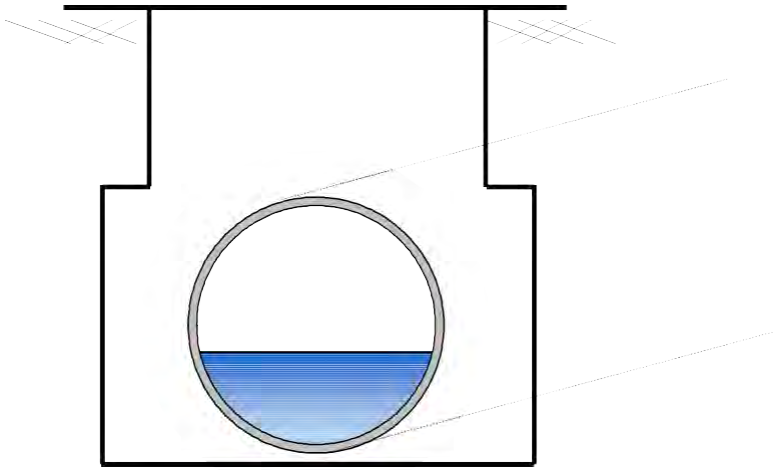
0.447 *mgd*



TC-08
Site Capacity and Surcharge Summary

Realtime Flow Levels with Rainfall Data over Monitoring Period



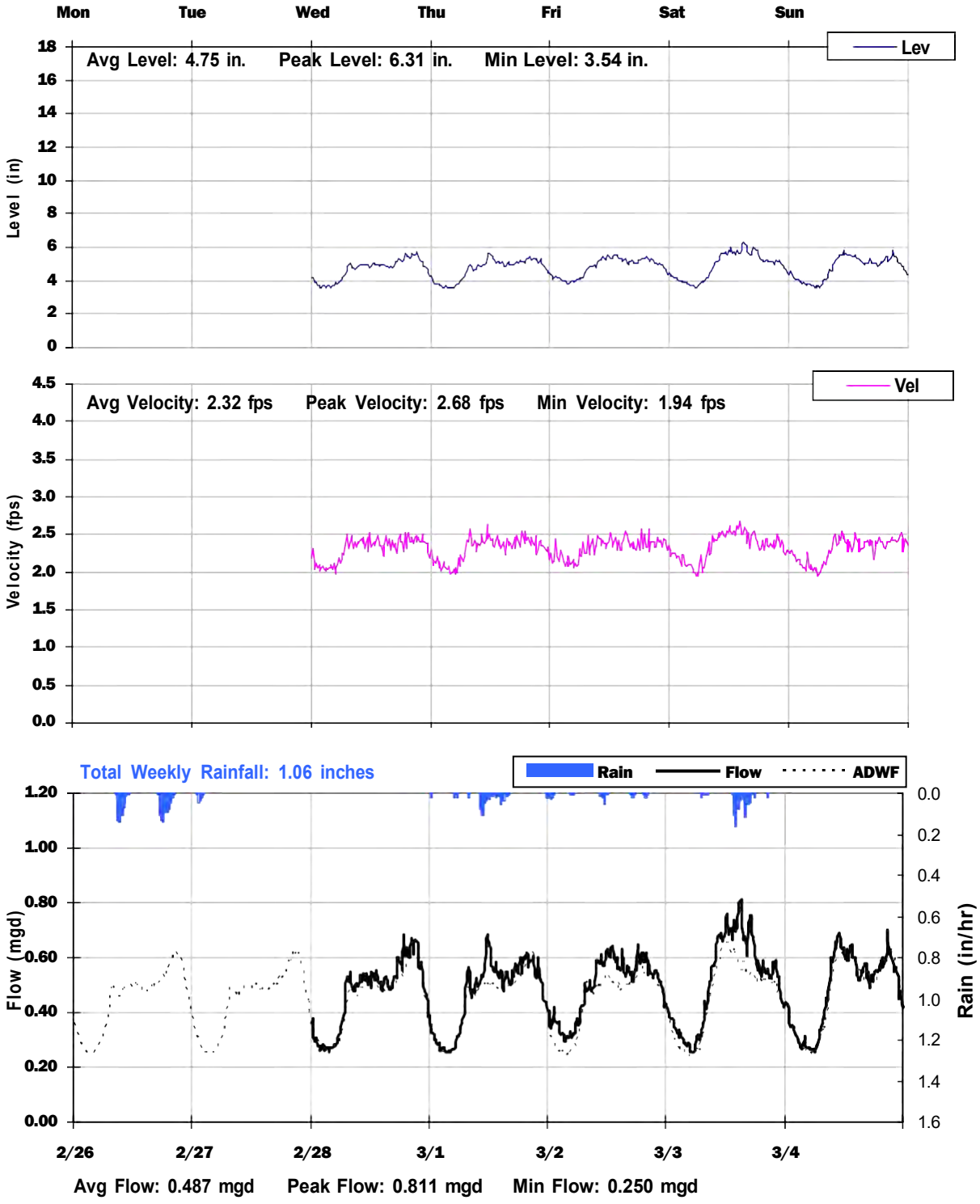


Pipe Diameter:	**18**	***inches***
Peak Measured Level:	**6.94**	***inches***
Peak d/D Ratio:	**0.39**	

TC-08

Weekly Level, Velocity and Flow Hydrographs

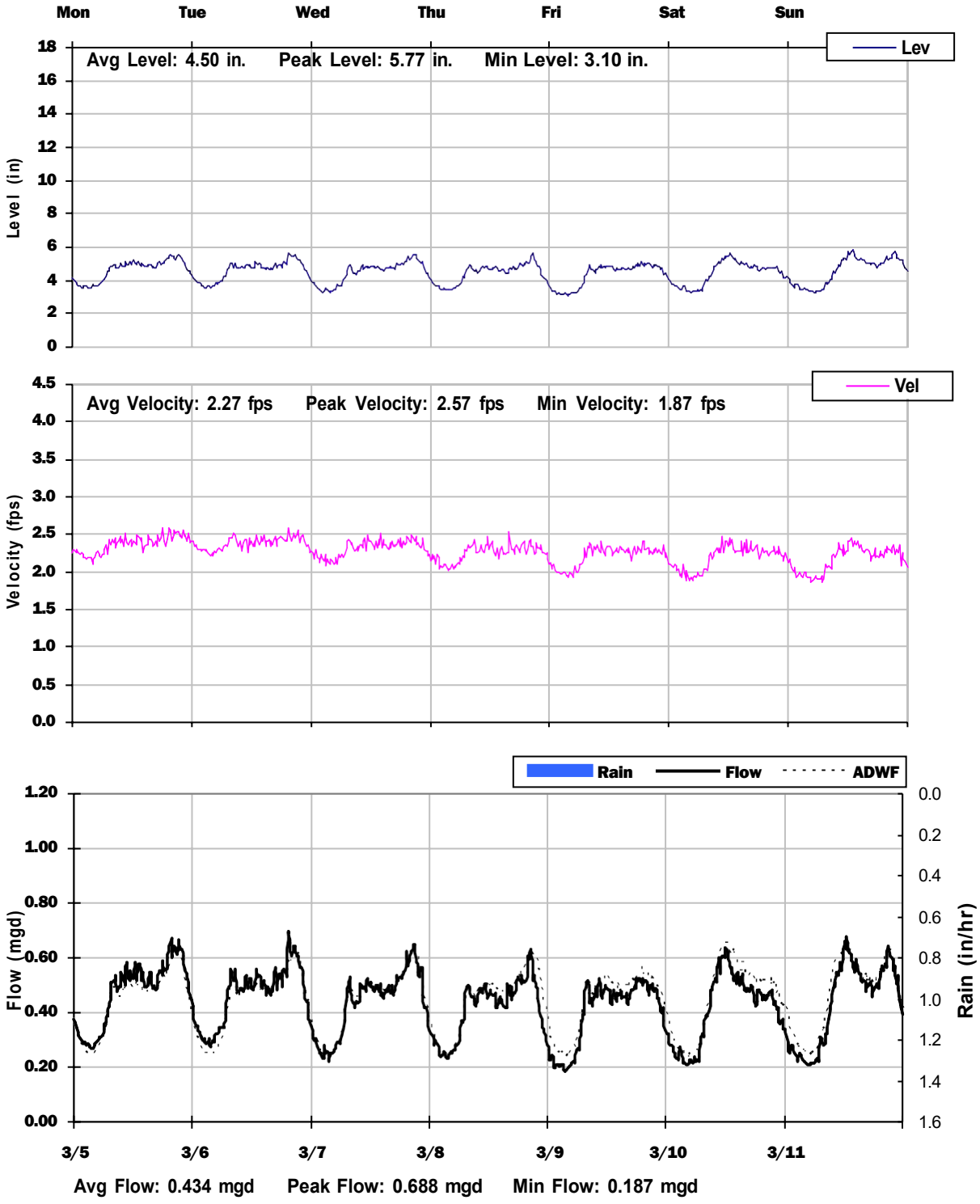
2/26/2018 to 3/5/2018



TC-08

Weekly Level, Velocity and Flow Hydrographs

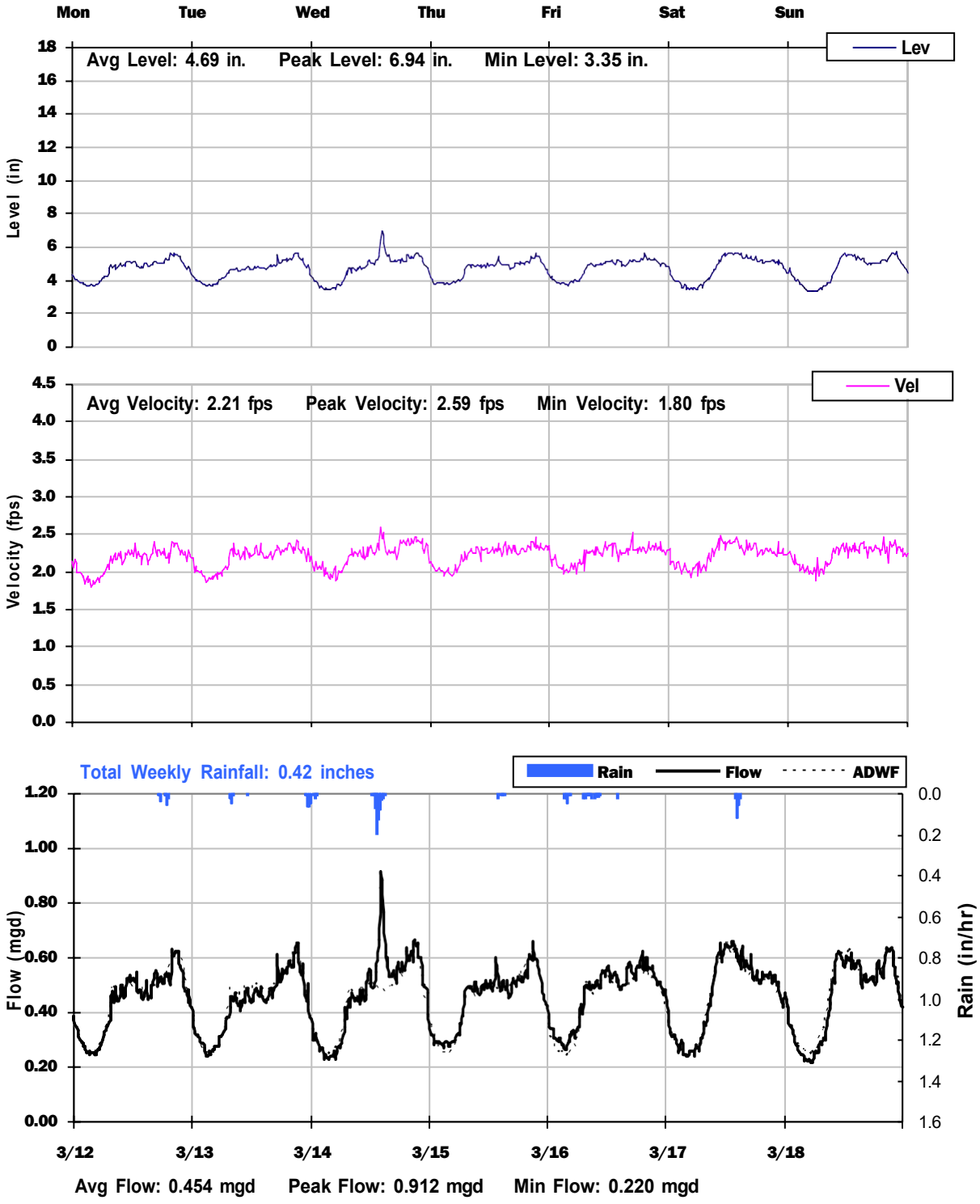
3/5/2018 to 3/12/2018



TC-08

Weekly Level, Velocity and Flow Hydrographs

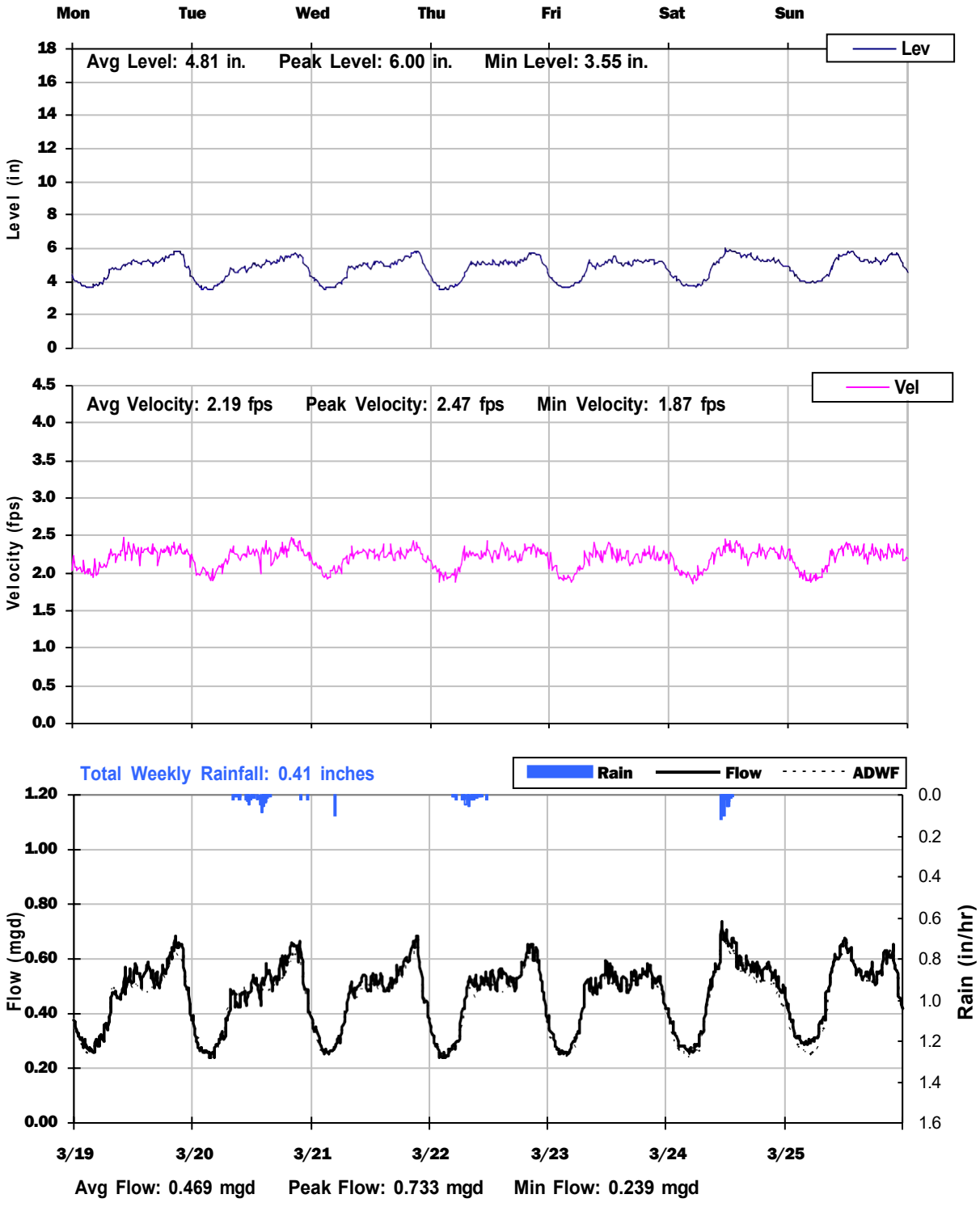
3/12/2018 to 3/19/2018



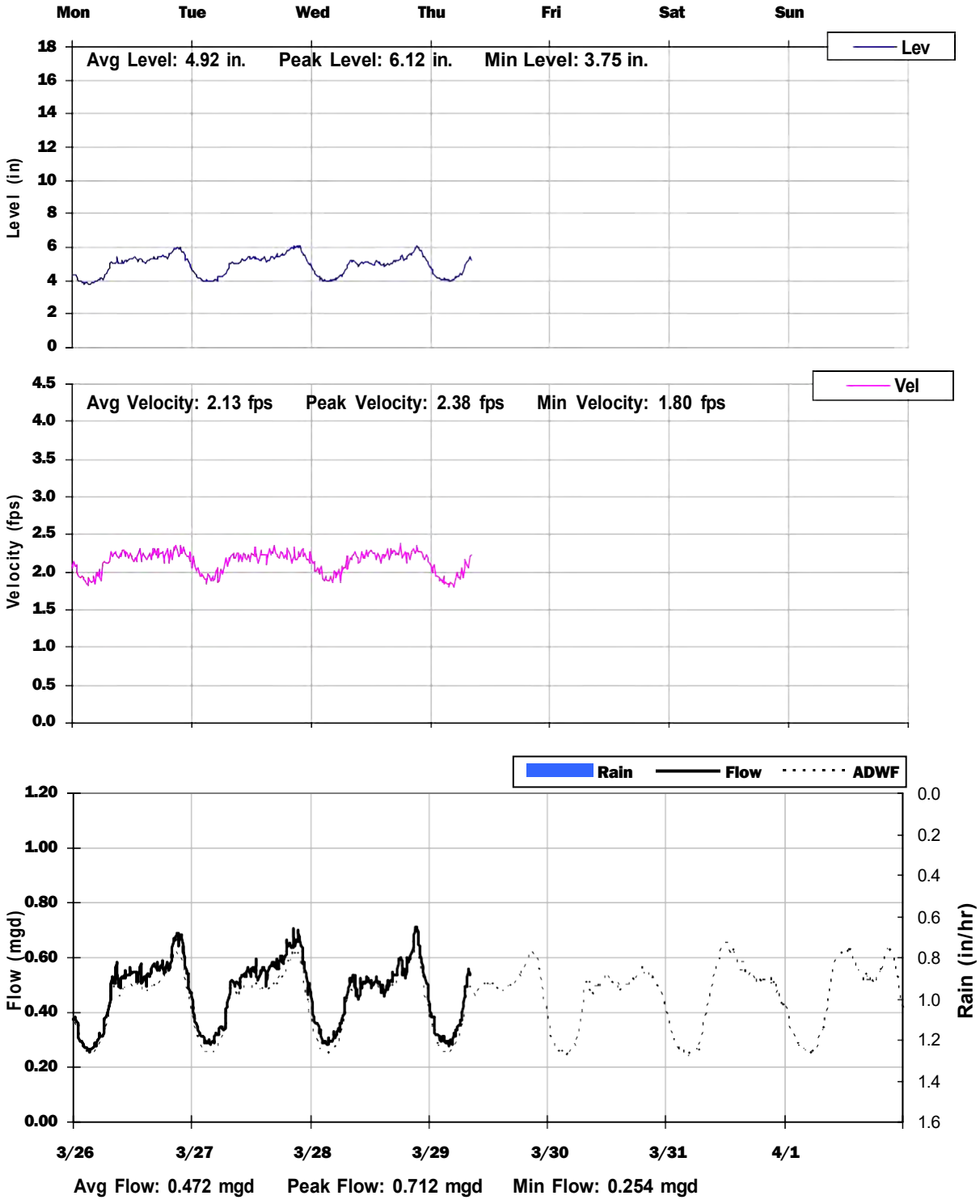
TC-08

Weekly Level, Velocity and Flow Hydrographs

3/19/2018 to 3/26/2018



TC-08
Weekly Level, Velocity and Flow Hydrographs
3/26/2018 to 4/2/2018



TC-08

City of Tracy, California

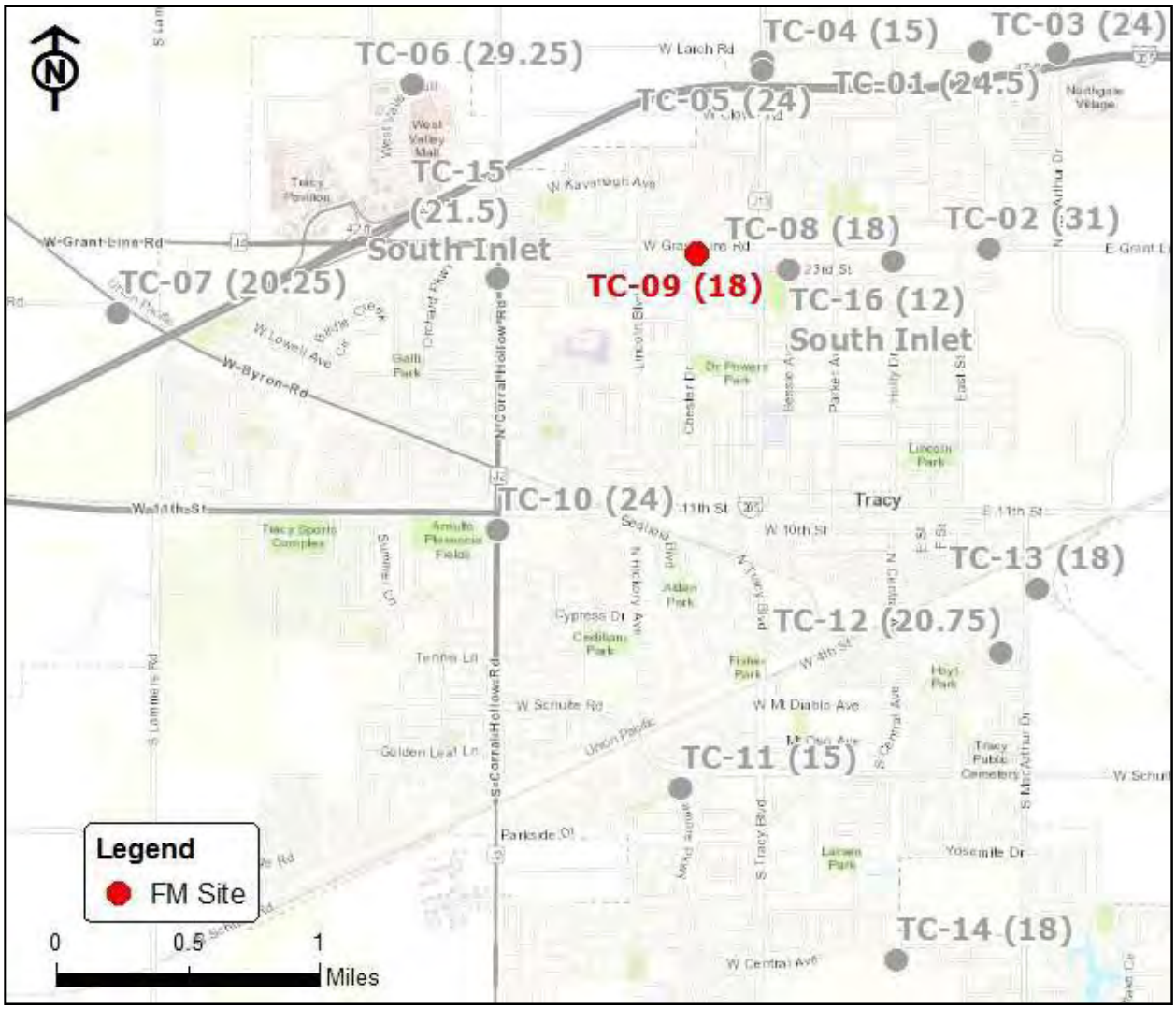
Sanitary Sewer Flow Monitoring

February 26 - April 08, 2020

Monitoring Site: **TC-09**

Location: **Inside of The Village at Summergate Apartments**

Data Summary Report



Vicinity Map: TC-09

TC-09

Site Information

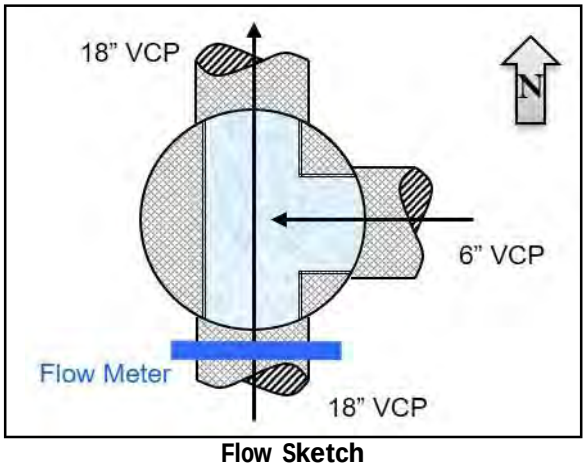
Location:	**Inside of The Village at Summergate Apartments**
City Manhole:	
Coordinates:	**121.4395° W, 37.7537° N**
Rim Elevation (Earth):	**32 feet**
Pipe Diameter:	**18 inches**
ADWF:	**0.338 mgd**
Peak Measured Flow:	**0.585 mgd**



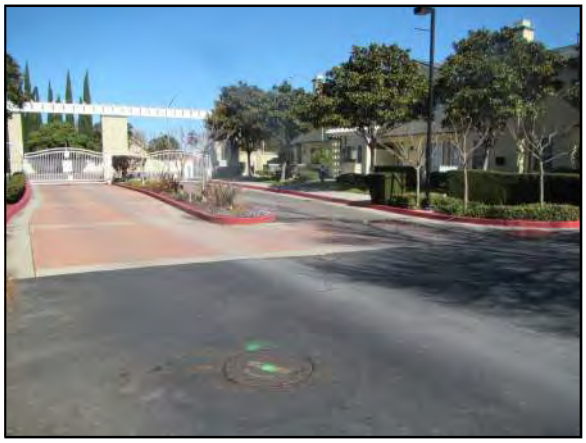
Satellite Map



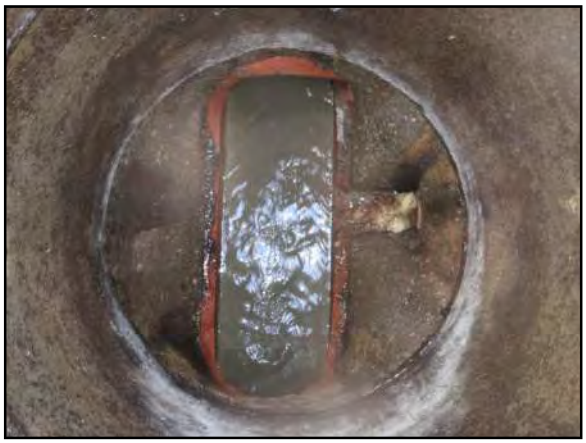
Sanitary Map



Flow Sketch



Street View



Plan View

TC-09

Additional Site Photos

Effluent Pipe



Monitored South Influent Pipe



TC-09

Additional Site Photos

East Lateral

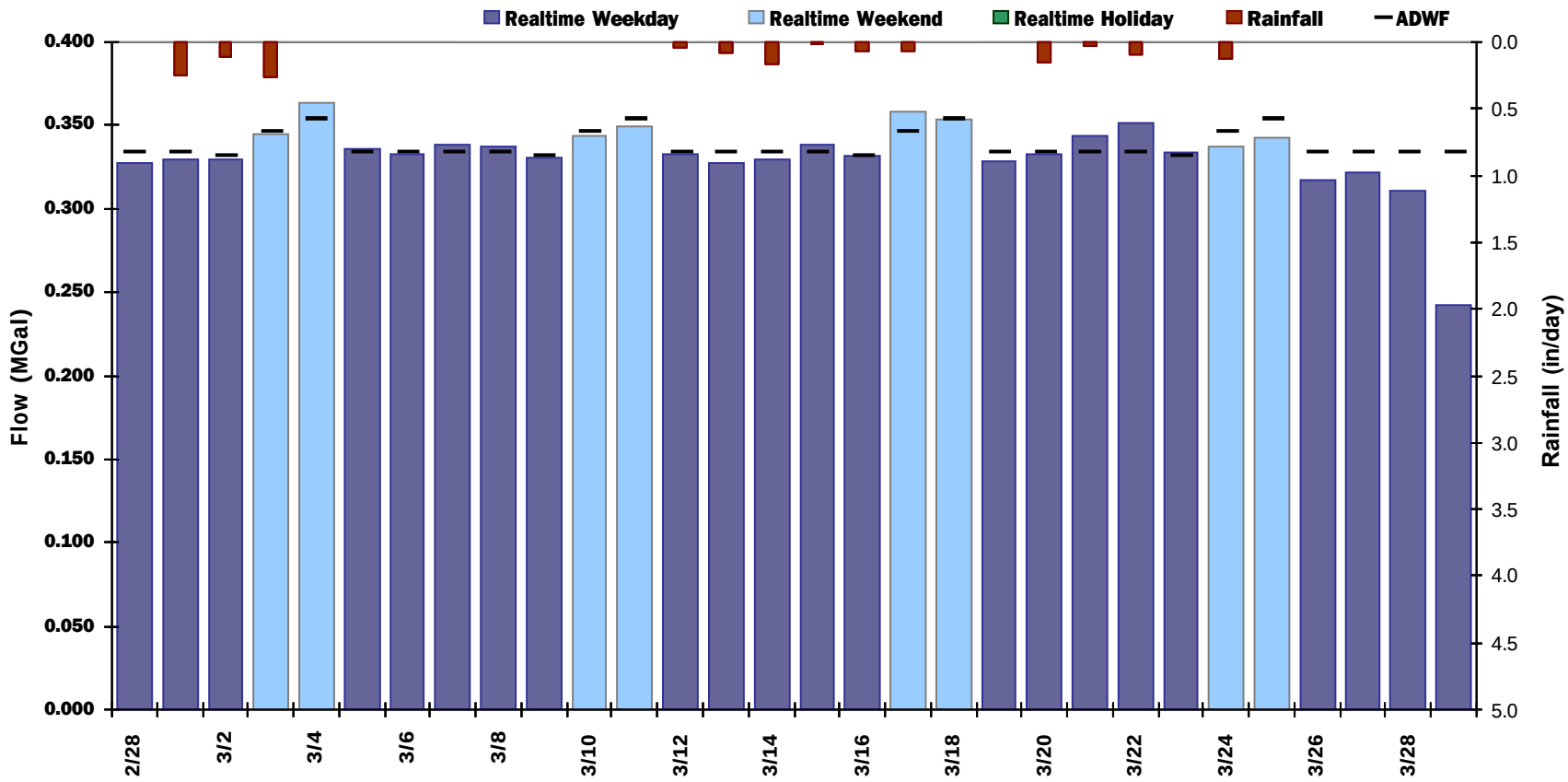


TC-09

Period Flow Summary: Daily Flow Totals

Avg Period Flow: 0.333 MGal **Peak Daily Flow: 0.364 MGal** **Min Daily Flow: 0.242 MGal**

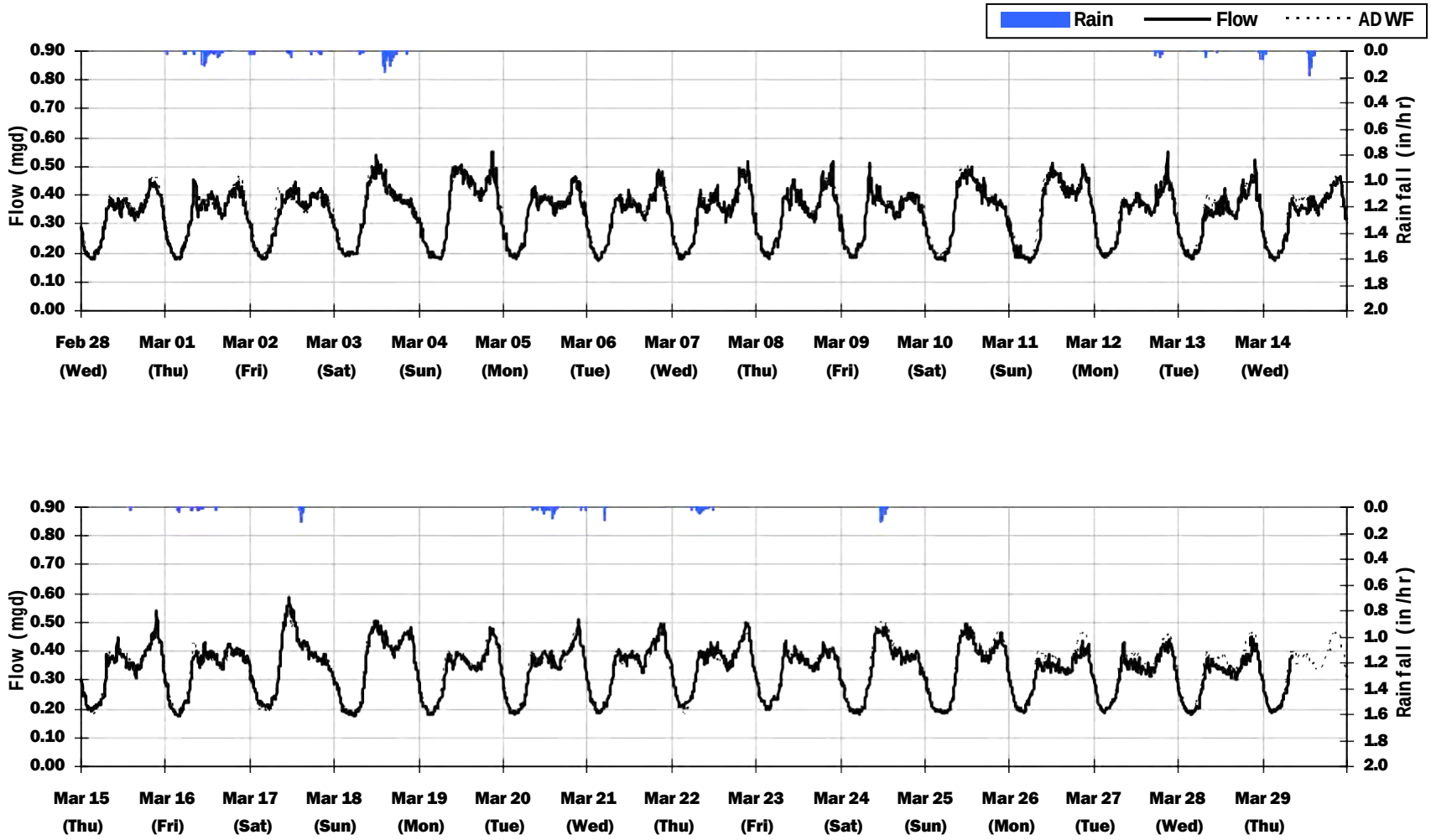
Total Period Rainfall: 1.43 inches



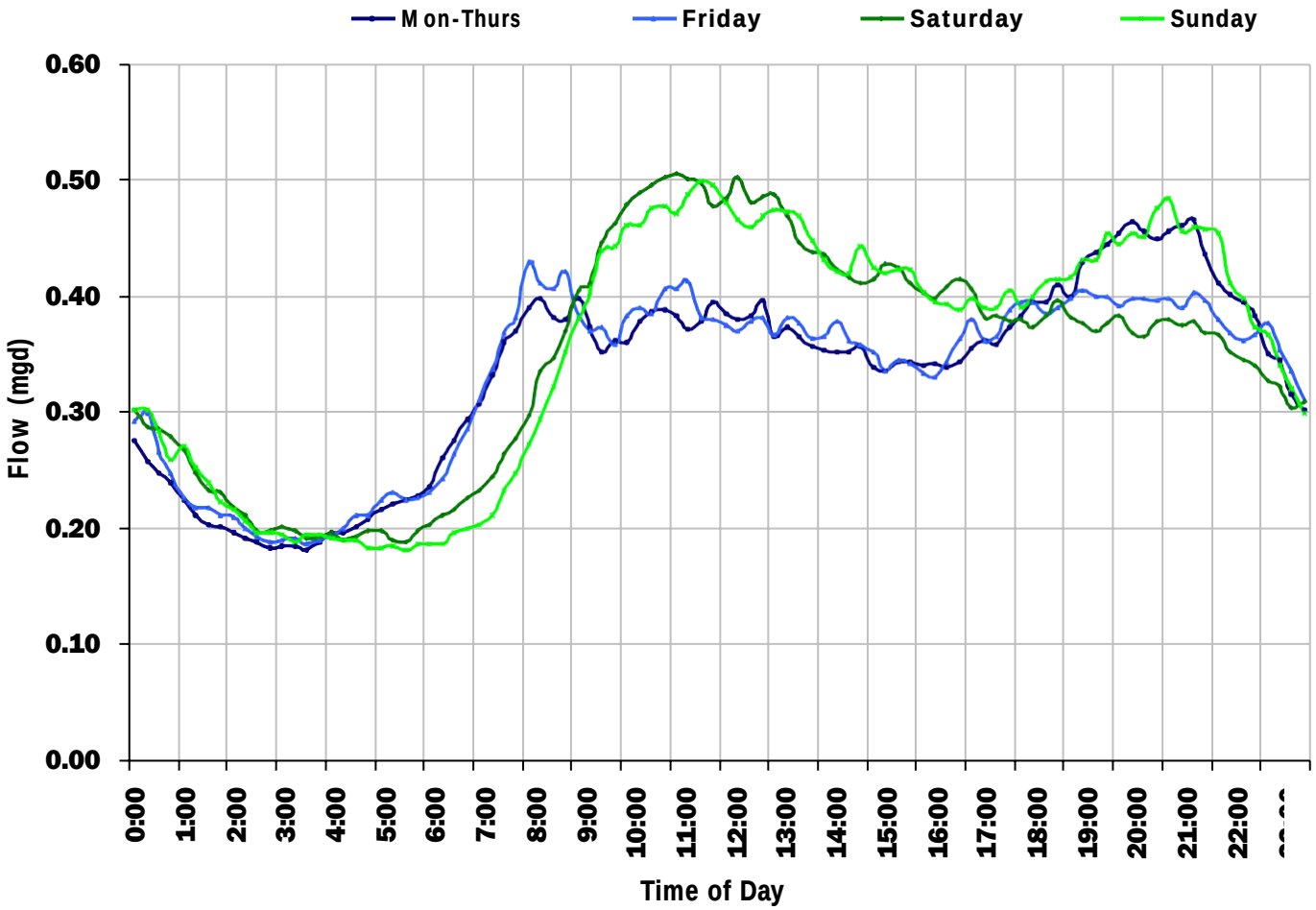
TC-09

Flow Summary: 2/28/2018 to 3/29/2018

Total Period Rainfall: 1.43 inches Avg Flow: 0.335 mgd Peak Flow: 0.585 mgd Min Flow: 0.170 mgd

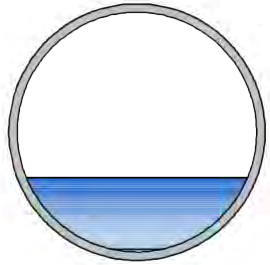


TC-09
Average Dry Weather Flow Hydrographs



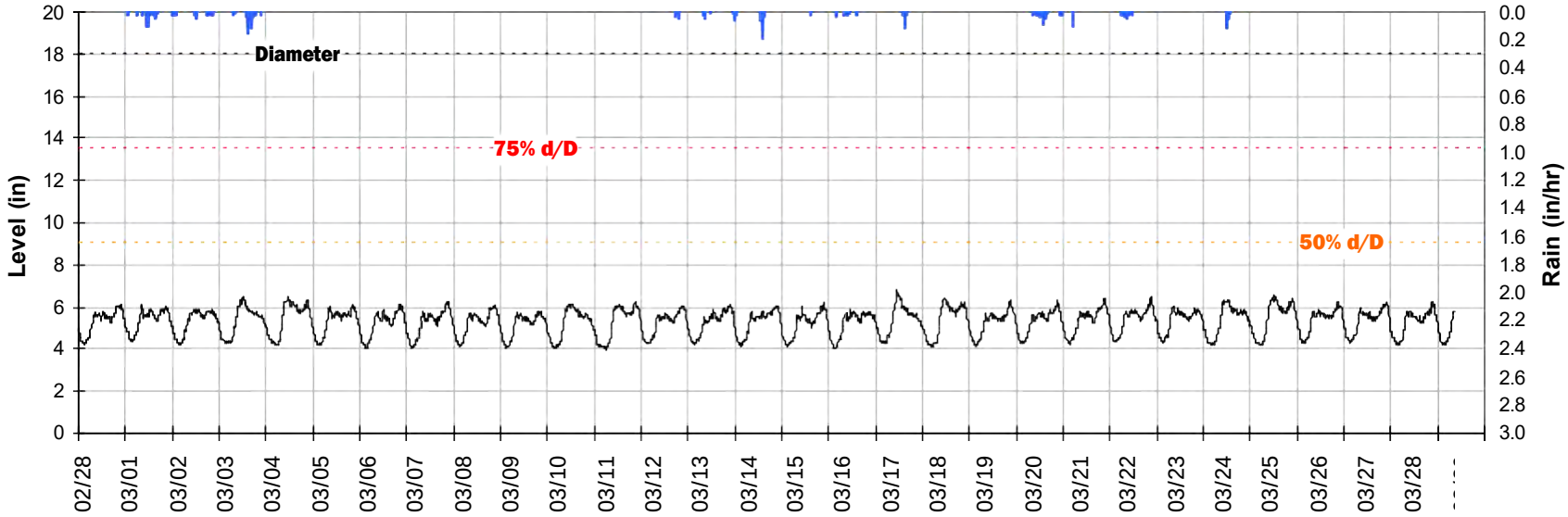
ADWF:

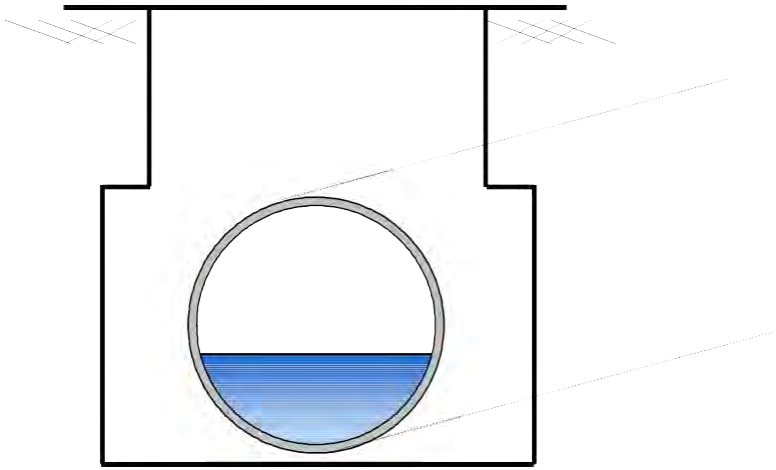
0.338 *mgd*



TC-09
Site Capacity and Surcharge Summary

Realtime Flow Levels with Rainfall Data over Monitoring Period



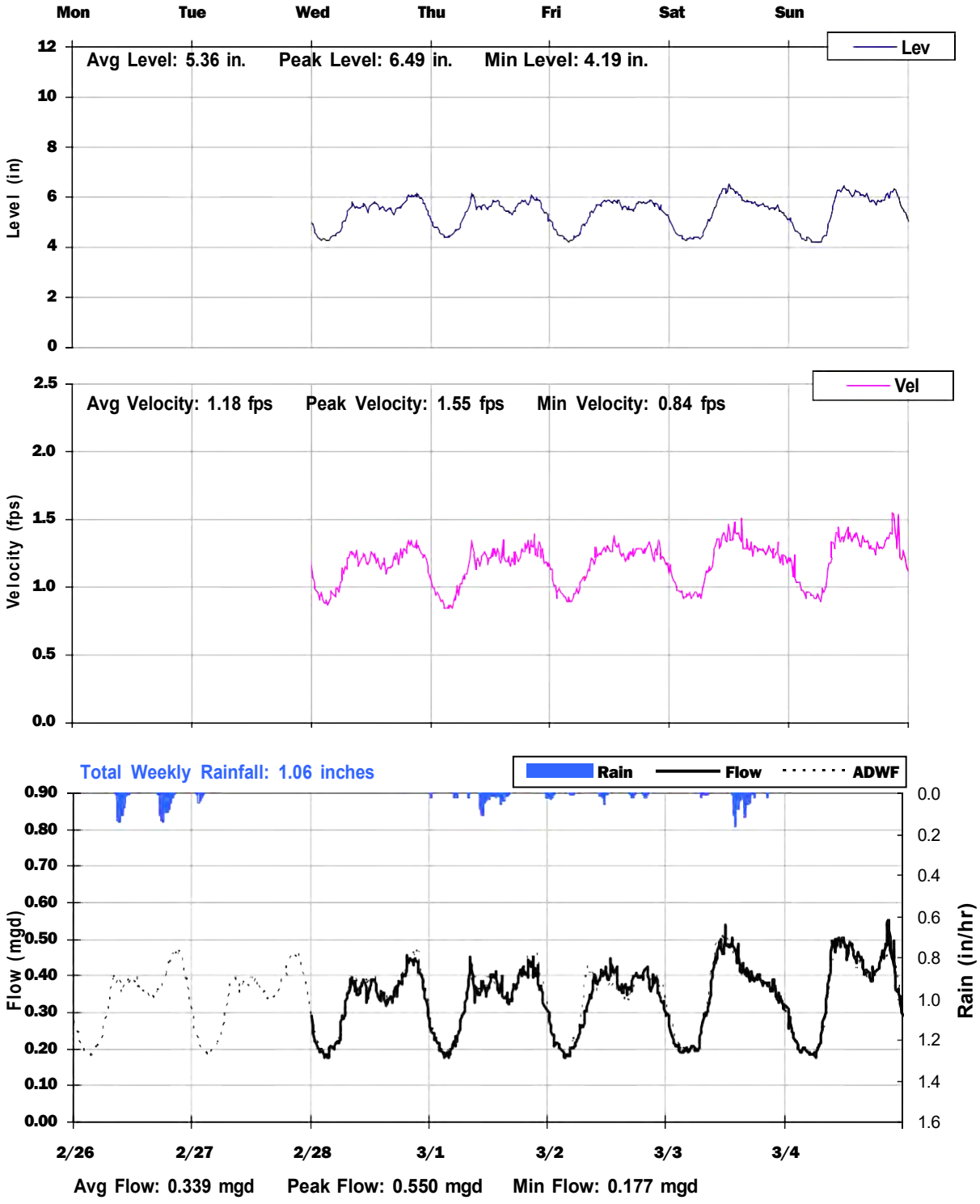


Pipe Diameter:	**18**	***inches***
Peak Measured Level:	**6.8**	***inches***
Peak d/D Ratio:	**0.38**	

TC-09

Weekly Level, Velocity and Flow Hydrographs

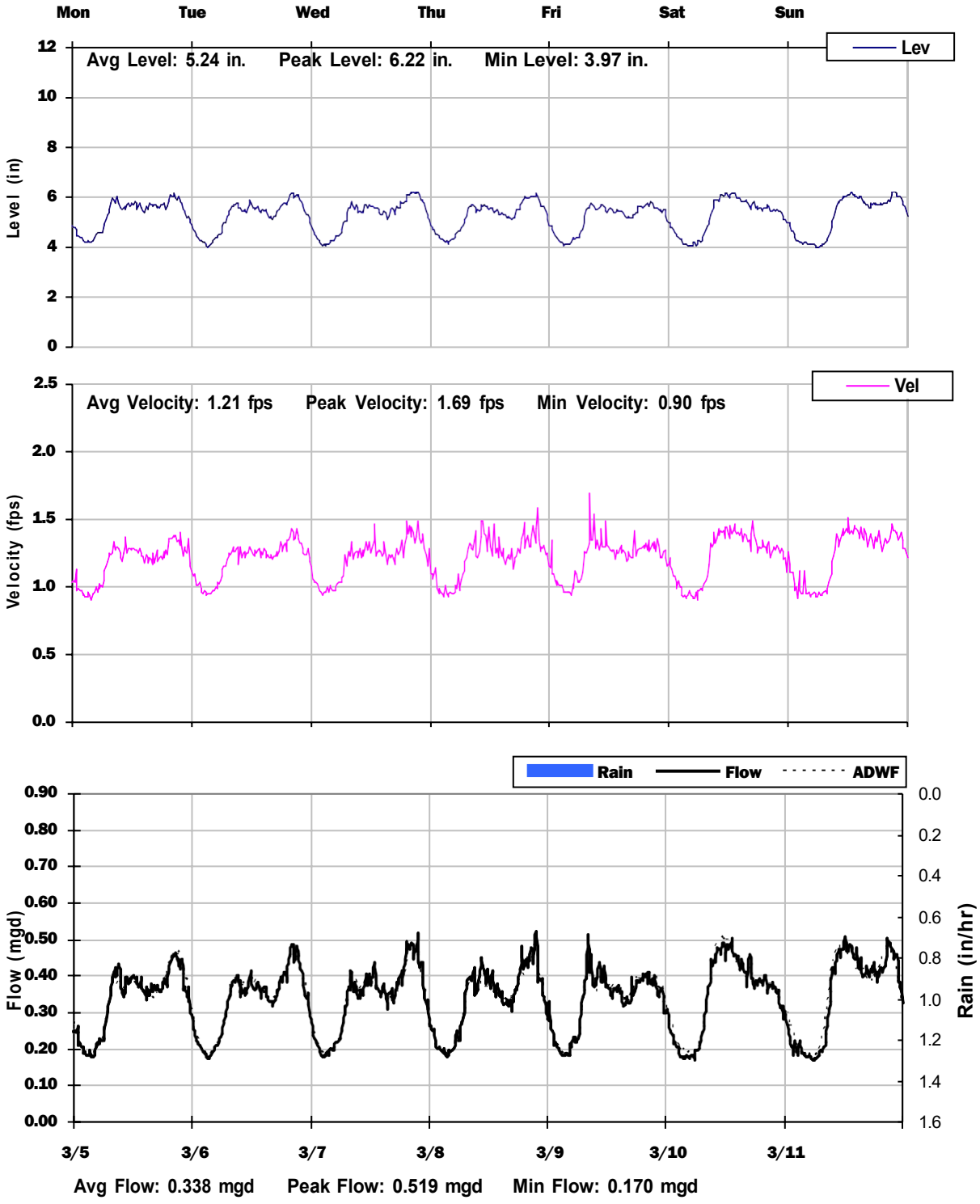
2/26/2018 to 3/5/2018



TC-09

Weekly Level, Velocity and Flow Hydrographs

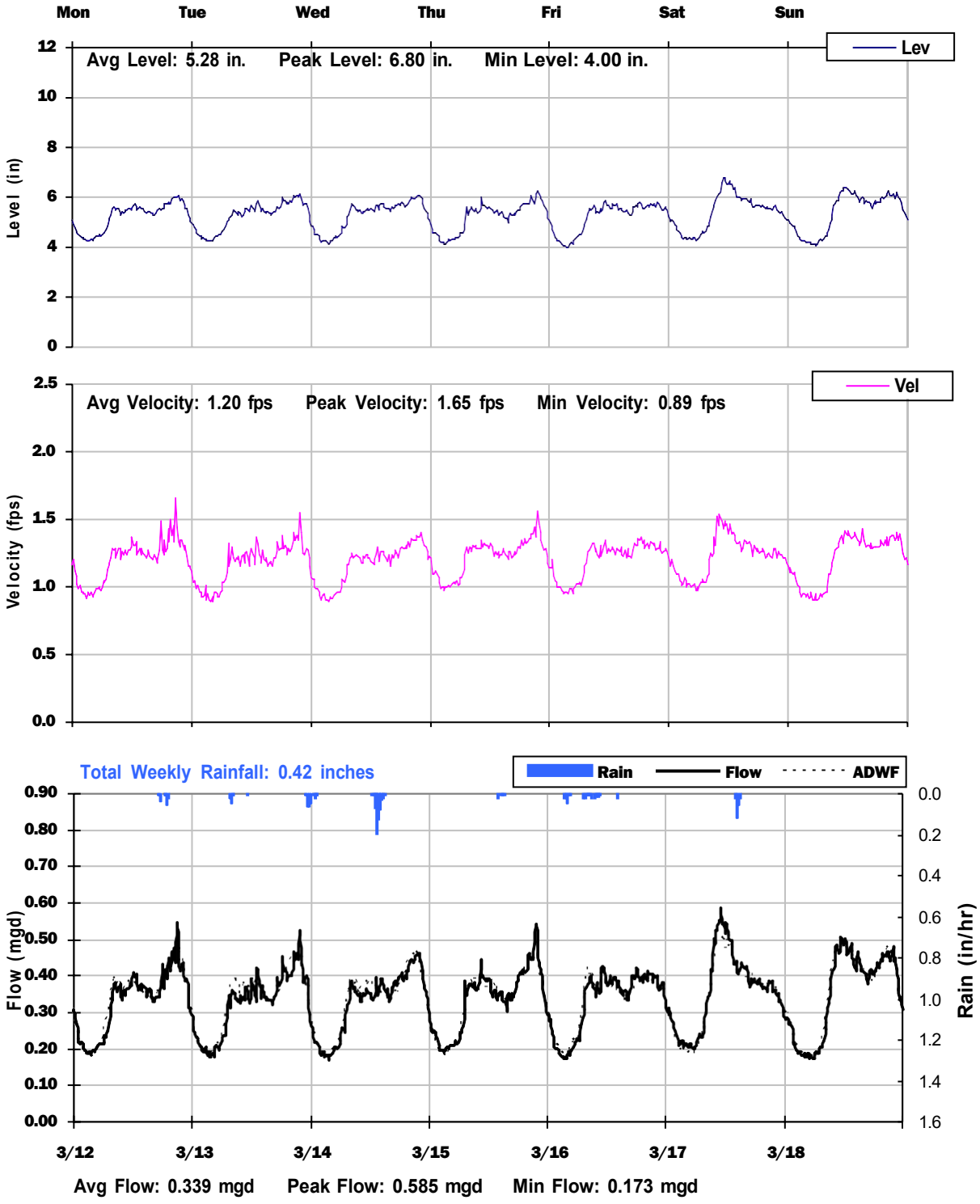
3/5/2018 to 3/12/2018



TC-09

Weekly Level, Velocity and Flow Hydrographs

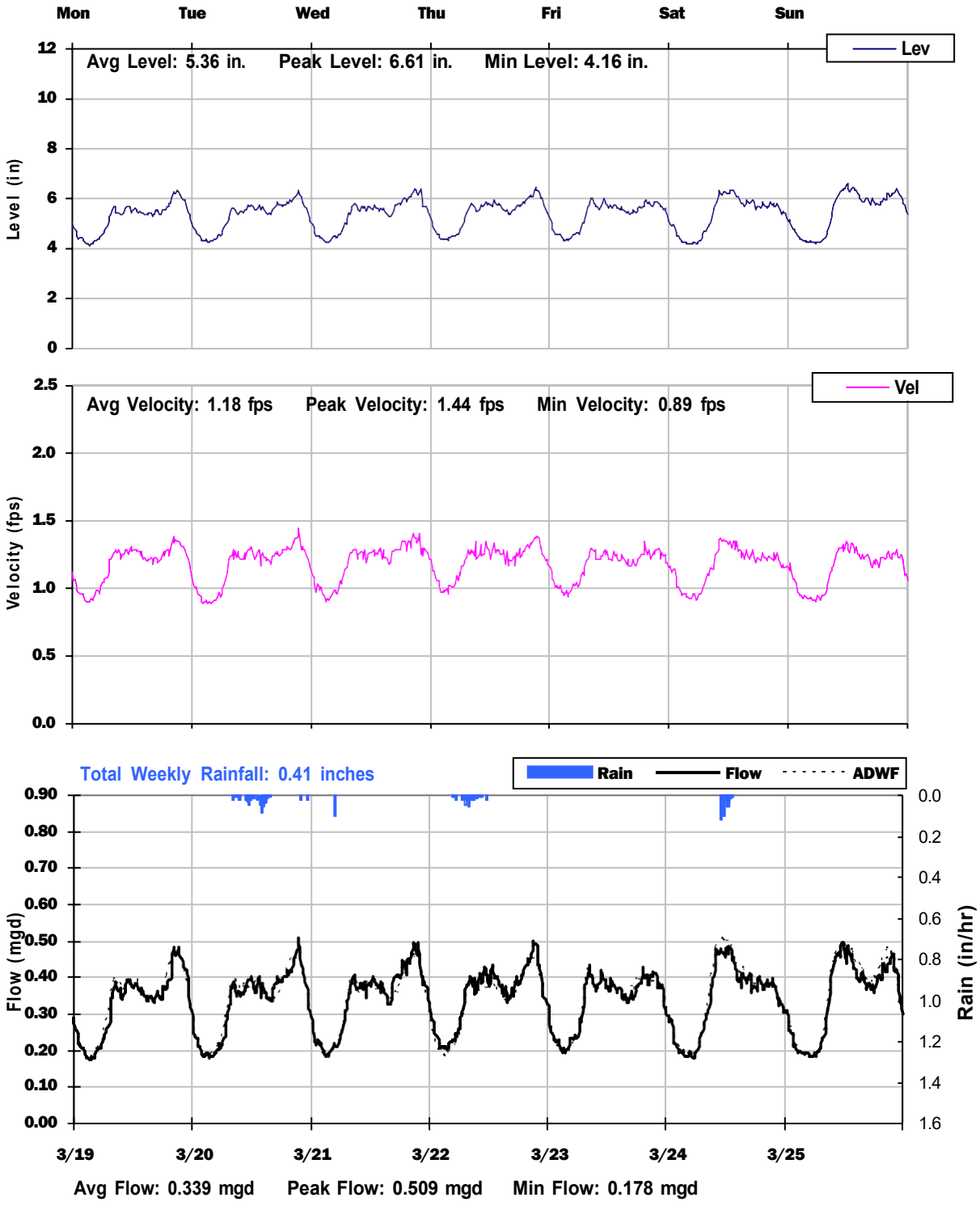
3/12/2018 to 3/19/2018



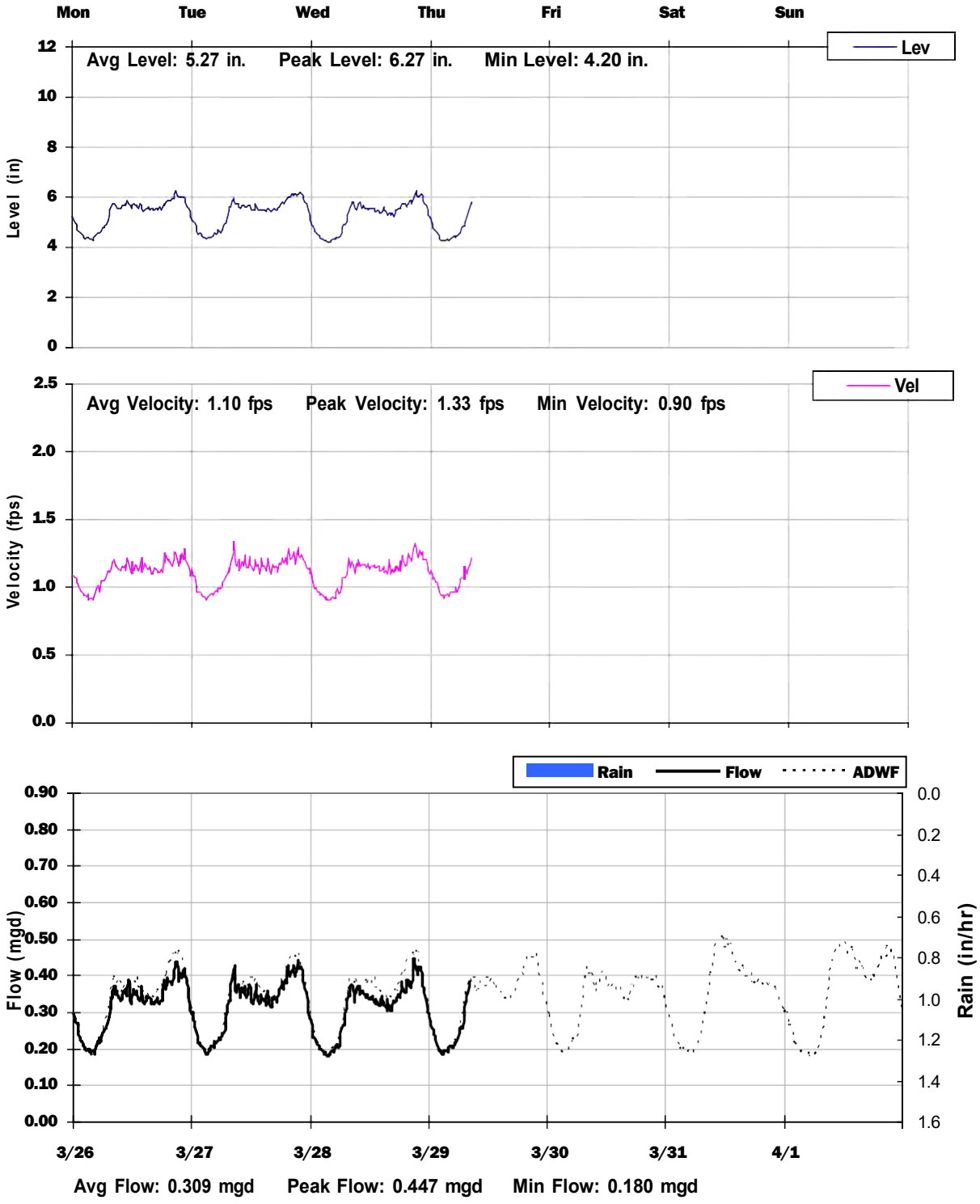
TC-09

Weekly Level, Velocity and Flow Hydrographs

3/19/2018 to 3/26/2018



TC-09
Weekly Level, Velocity and Flow Hydrographs
3/26/2018 to 4/2/2018



TC-09

City of Tracy, California

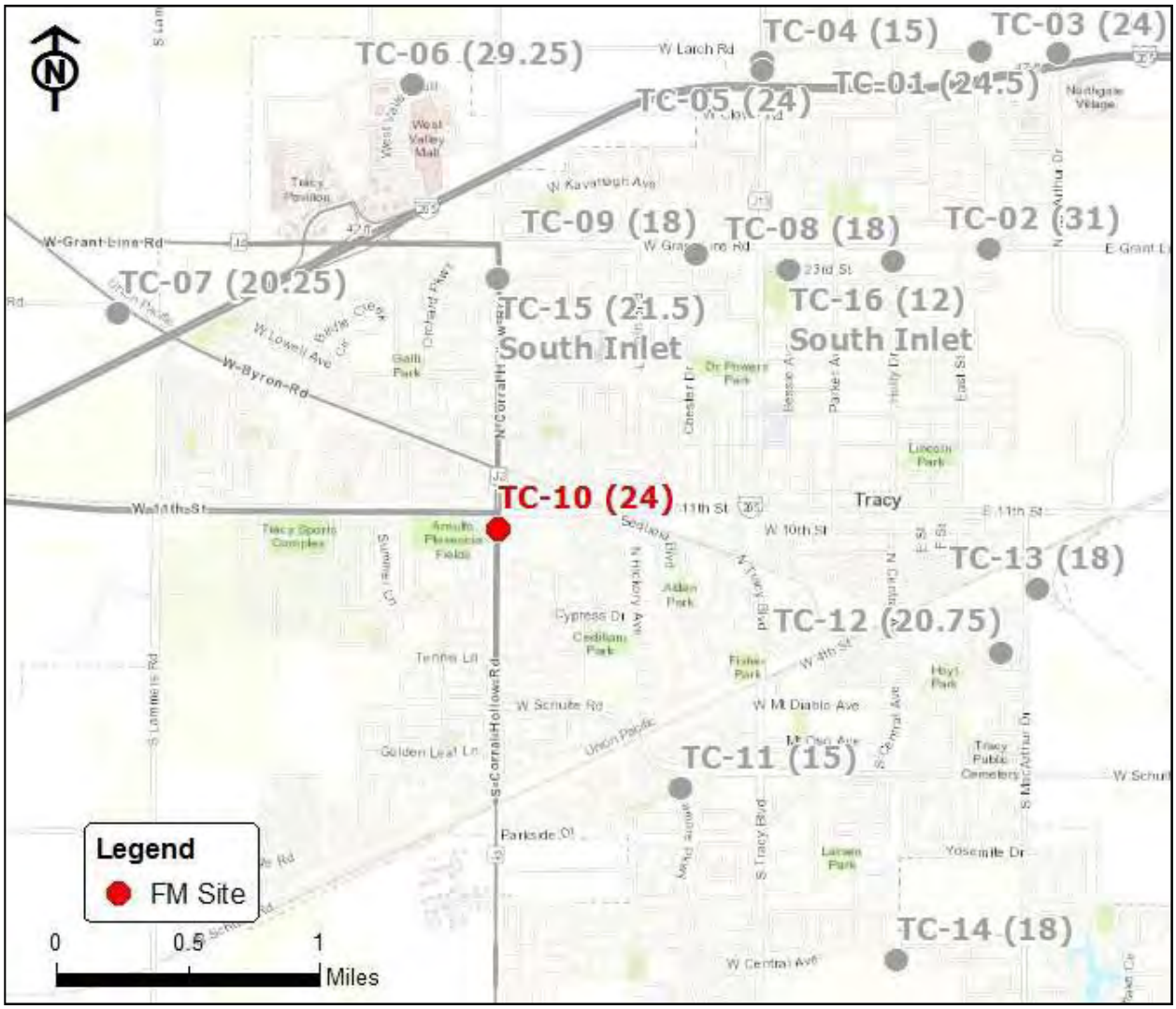
Sanitary Sewer Flow Monitoring

February 26 - April 08, 2020

Monitoring Site: **TC-10**

Location: **Corral Hollow Road, approx 335 feet souht of West 11th Street**

Data Summary Report



Vicinity Map: TC-10

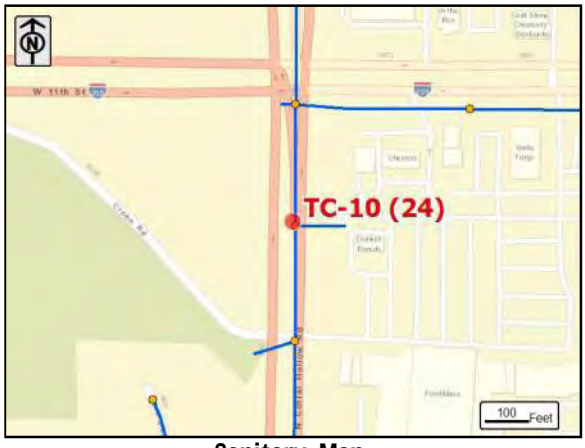
TC-10

Site Information

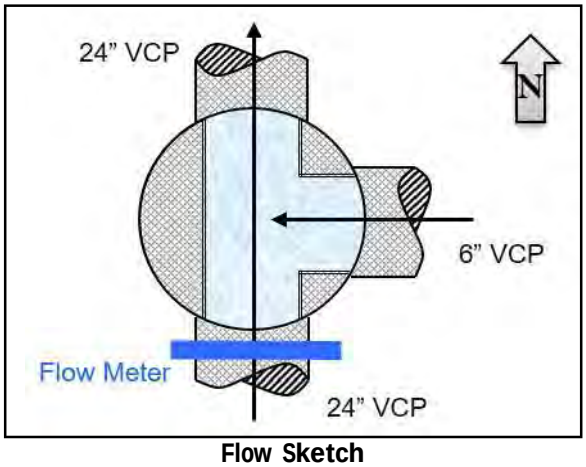
Location:	**Corral Hollow Road, approx 335 feet souht of West 11th Street**
City Manhole:	
Coordinates:	**121.4531° W, 37.7384° N**
Rim Elevation (Earth):	**45 feet**
Pipe Diameter:	**24 inches**
ADWF:	**1.141 mgd**
Peak Measured Flow:	**2.030 mgd**



Satellite Map



Sanitary Map



Flow Sketch



Street View



Plan View

TC-10

Additional Site Photos

Effluent Pipe



Monitored Influent Pipe



TC-10

Additional Site Photos

East Lateral

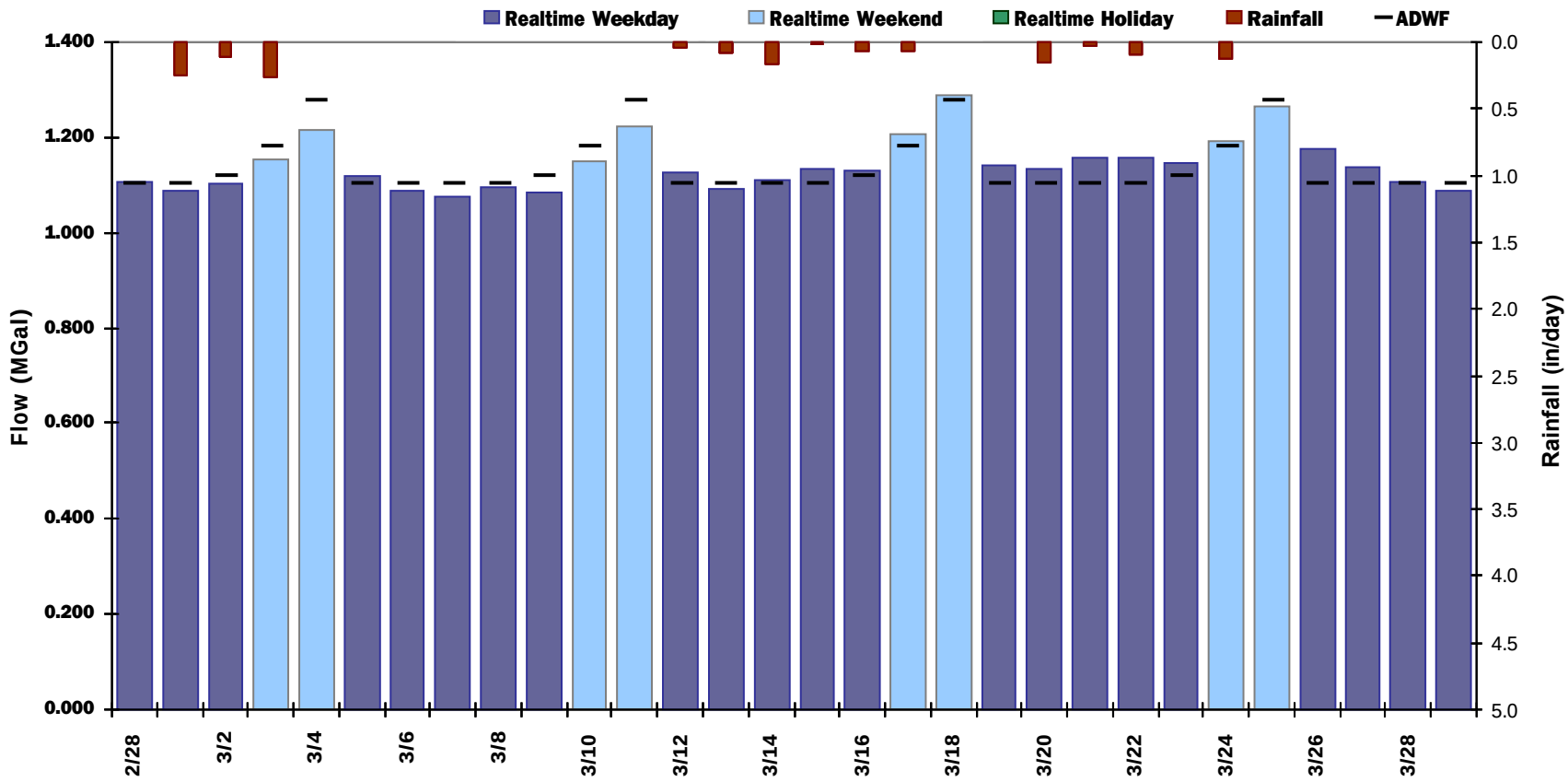


TC-10

Period Flow Summary: Daily Flow Totals

Avg Period Flow: 1.143 MGal **Peak Daily Flow: 1.286 MGal** **Min Daily Flow: 1.075 MGal**

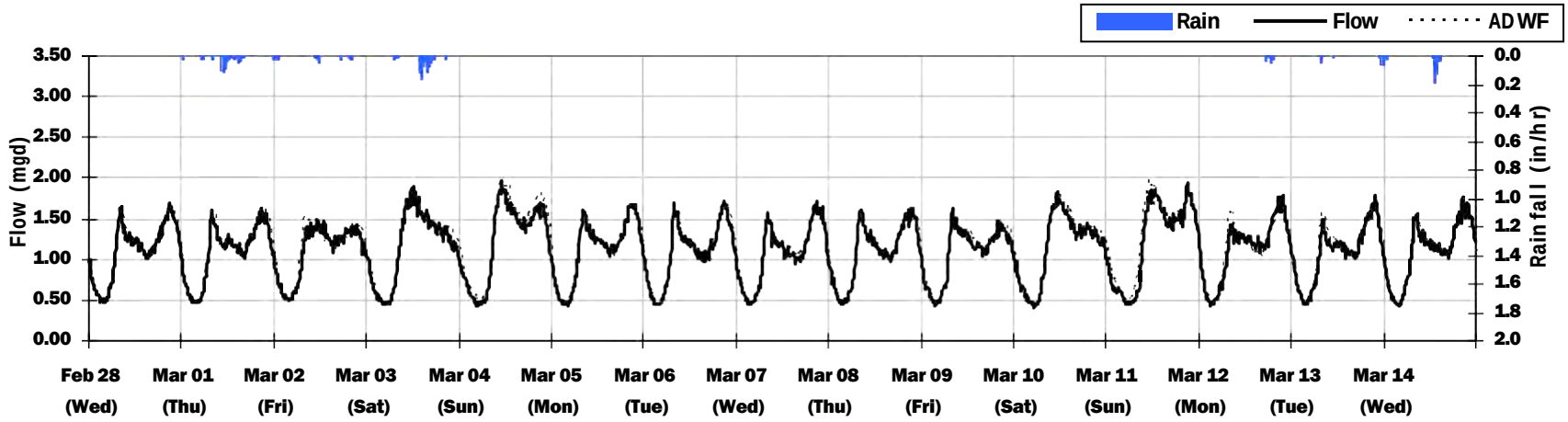
Total Period Rainfall: 1.43 inches

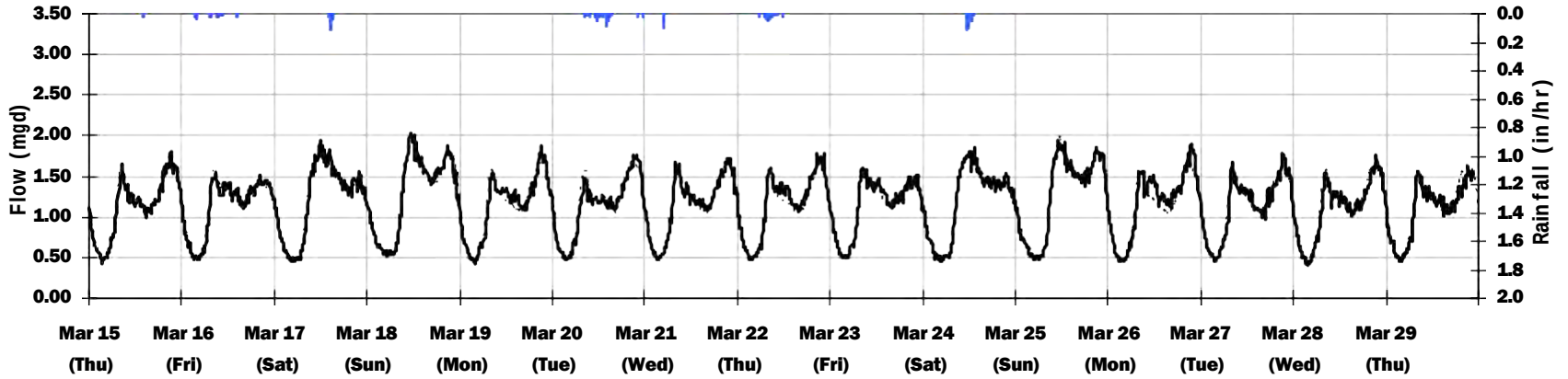


TC-10

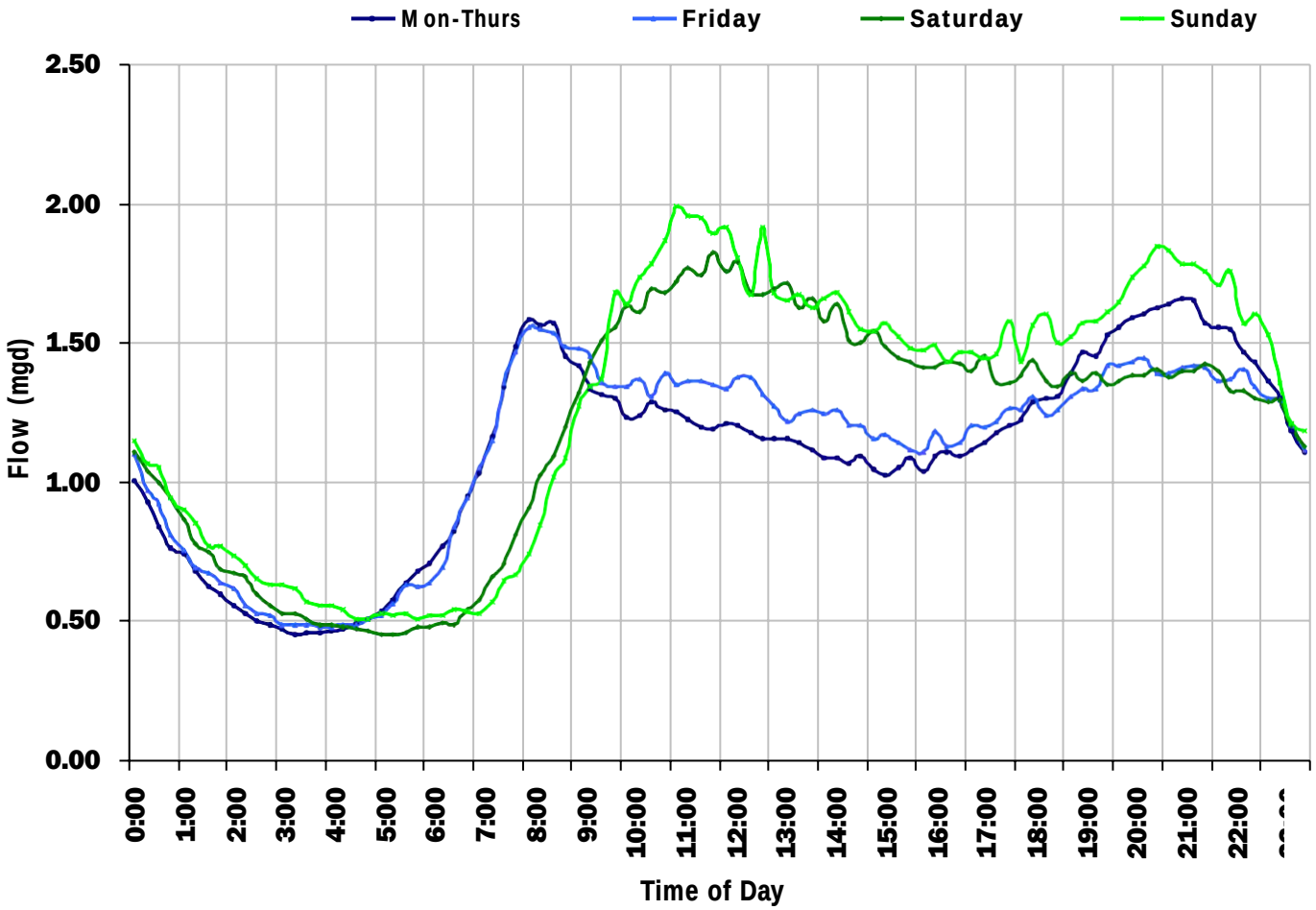
Flow Summary: 2/28/2018 to 3/29/2018

Total Period Rainfall: 1.43 inches Avg Flow: 1.143 mgd Peak Flow: 2.030 mgd Min Flow: 0.414 mgd



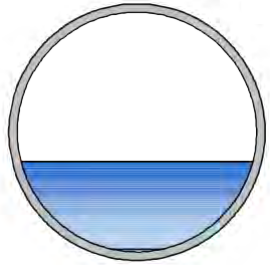


TC-10
Average Dry Weather Flow Hydrographs



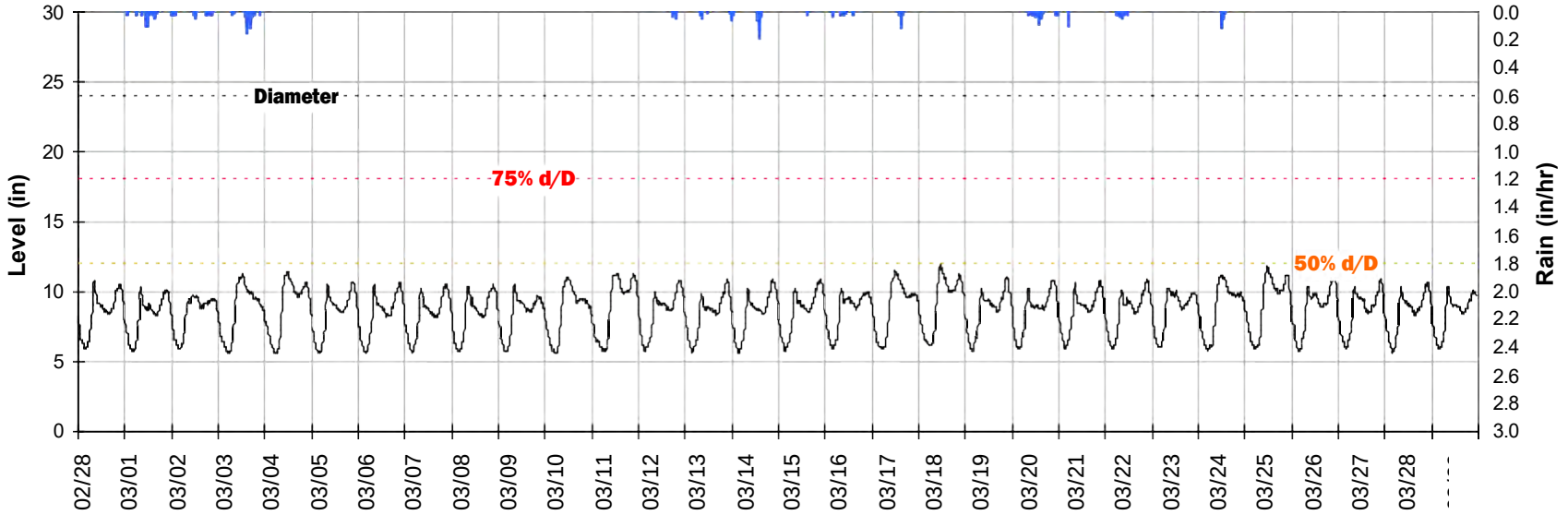
ADWF:

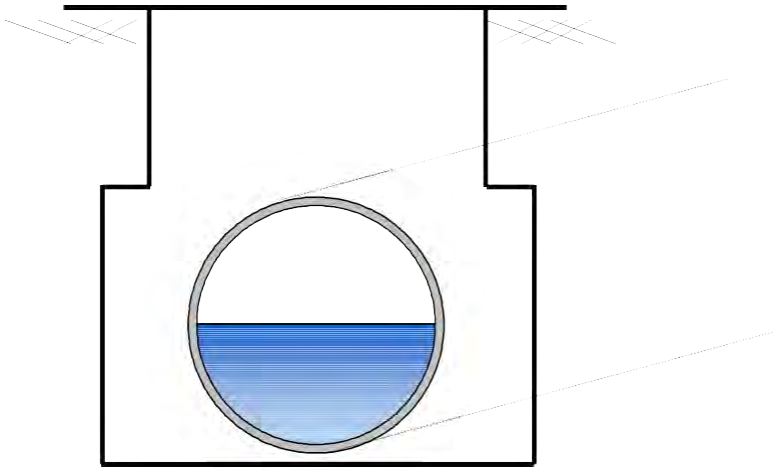
1.141 *mgd*



TC-10
Site Capacity and Surcharge Summary

Realtime Flow Levels with Rainfall Data over Monitoring Period



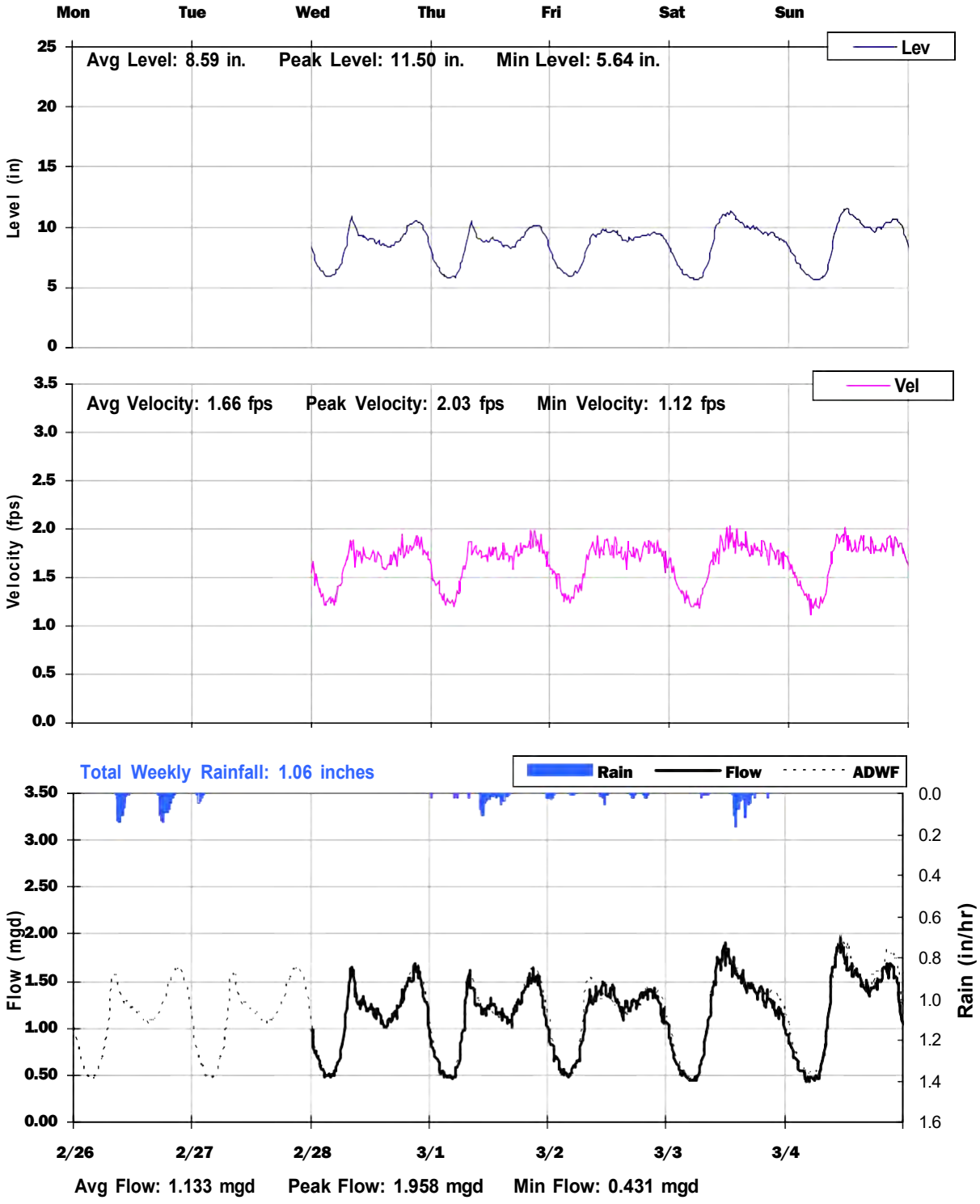


Pipe Diameter:	**24**	***inches***
Peak Measured Level:	**11.9**	***inches***
Peak d/D Ratio:	**0.50**	

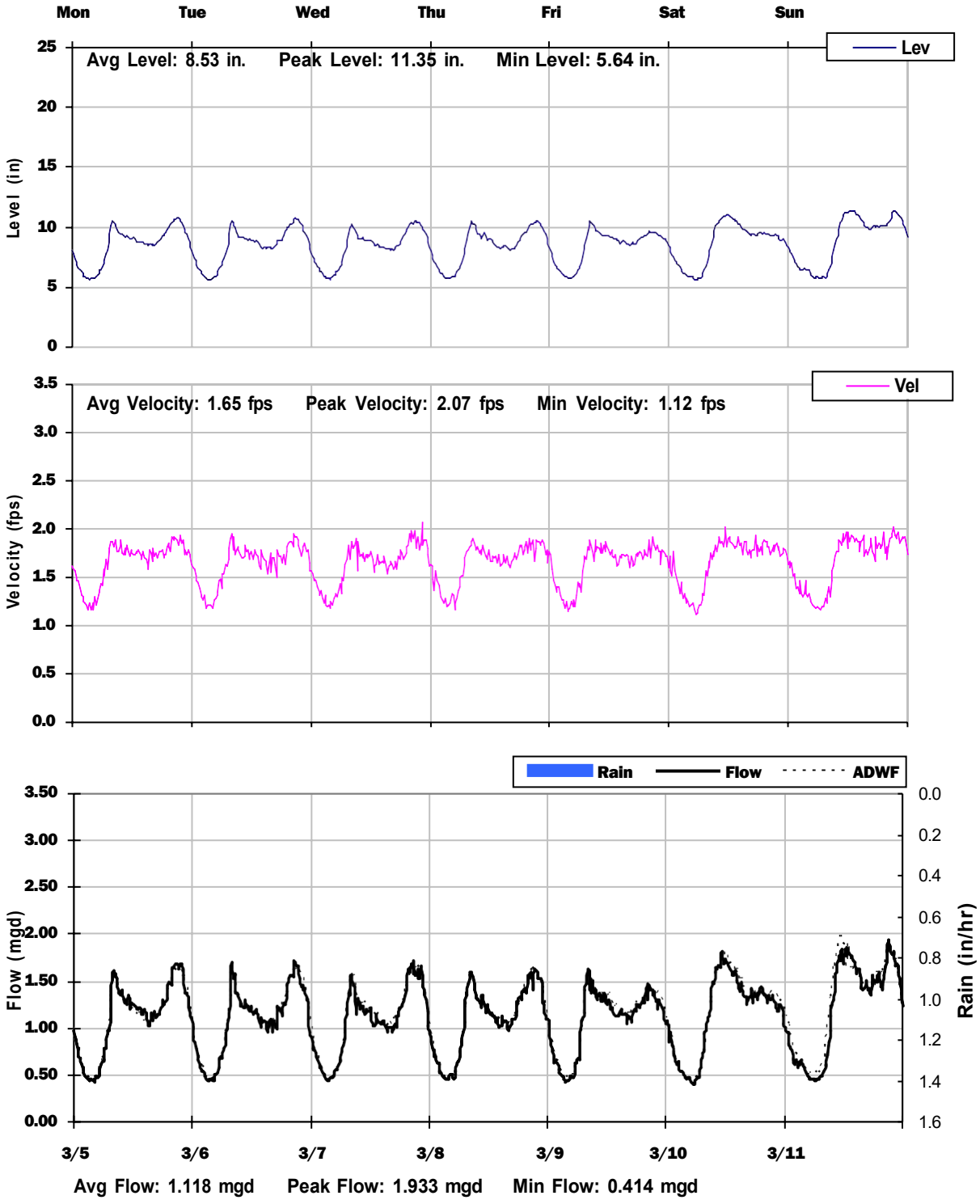
TC-10

Weekly Level, Velocity and Flow Hydrographs

2/26/2018 to 3/5/2018



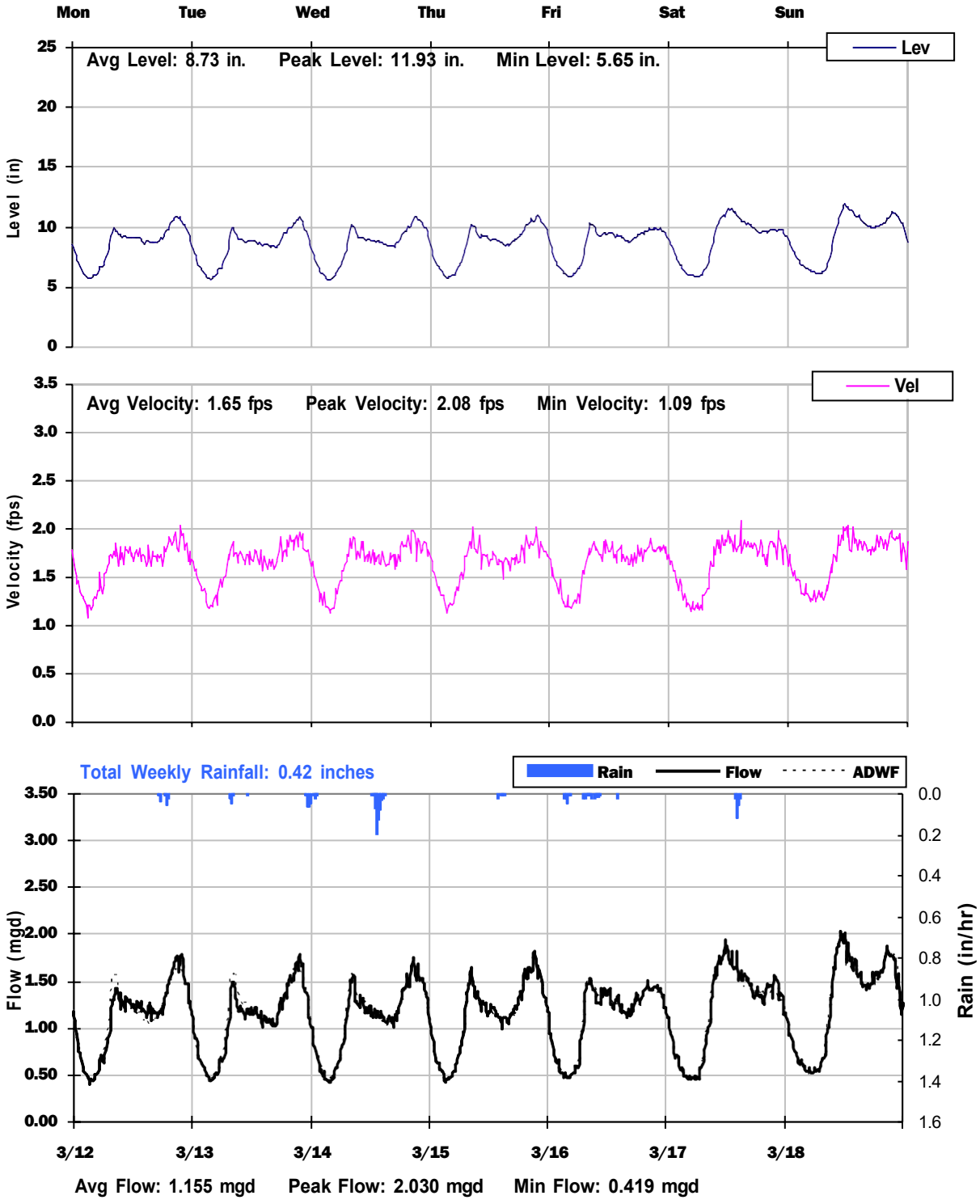
TC-10
Weekly Level, Velocity and Flow Hydrographs
3/5/2018 to 3/12/2018



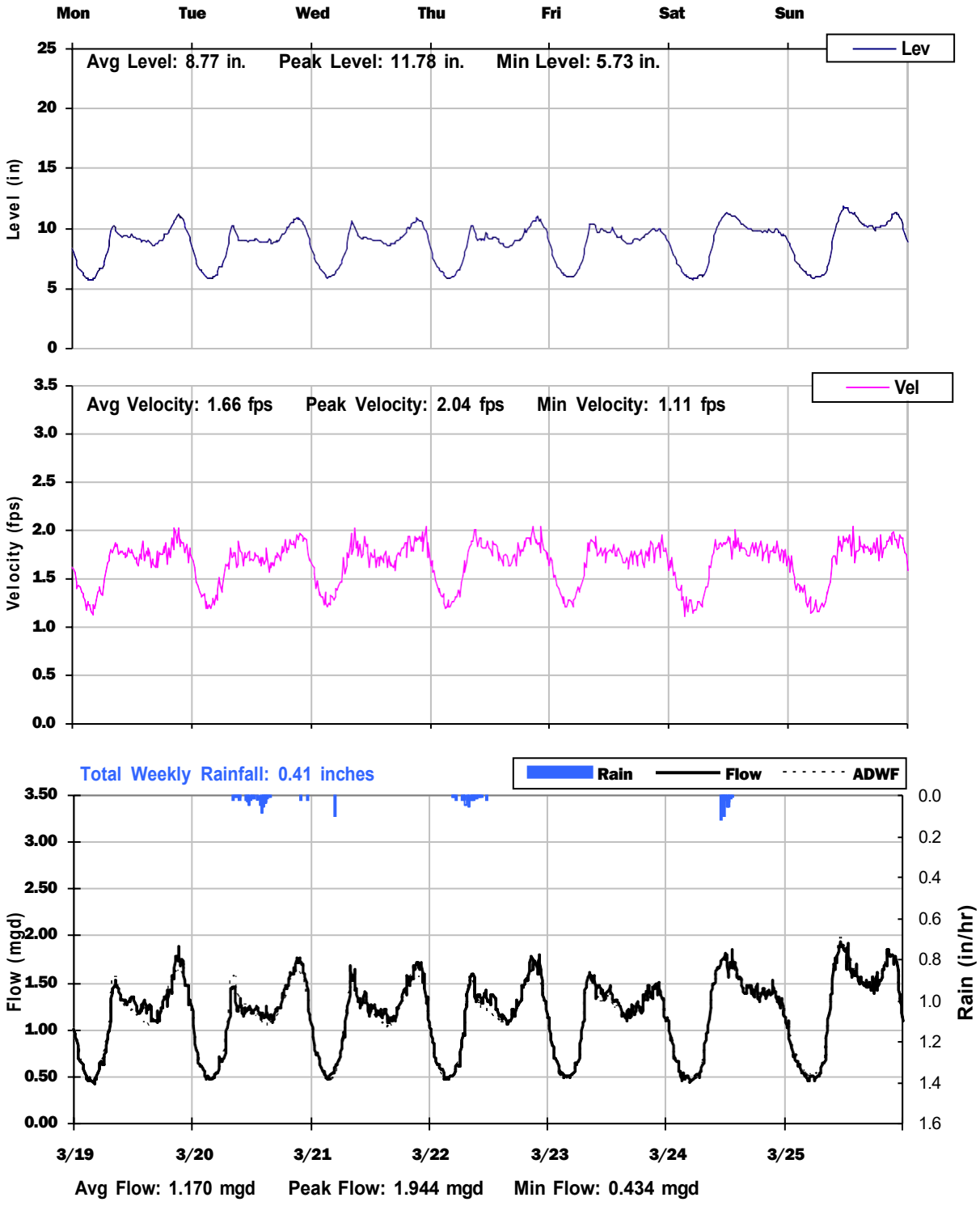
TC-10

Weekly Level, Velocity and Flow Hydrographs

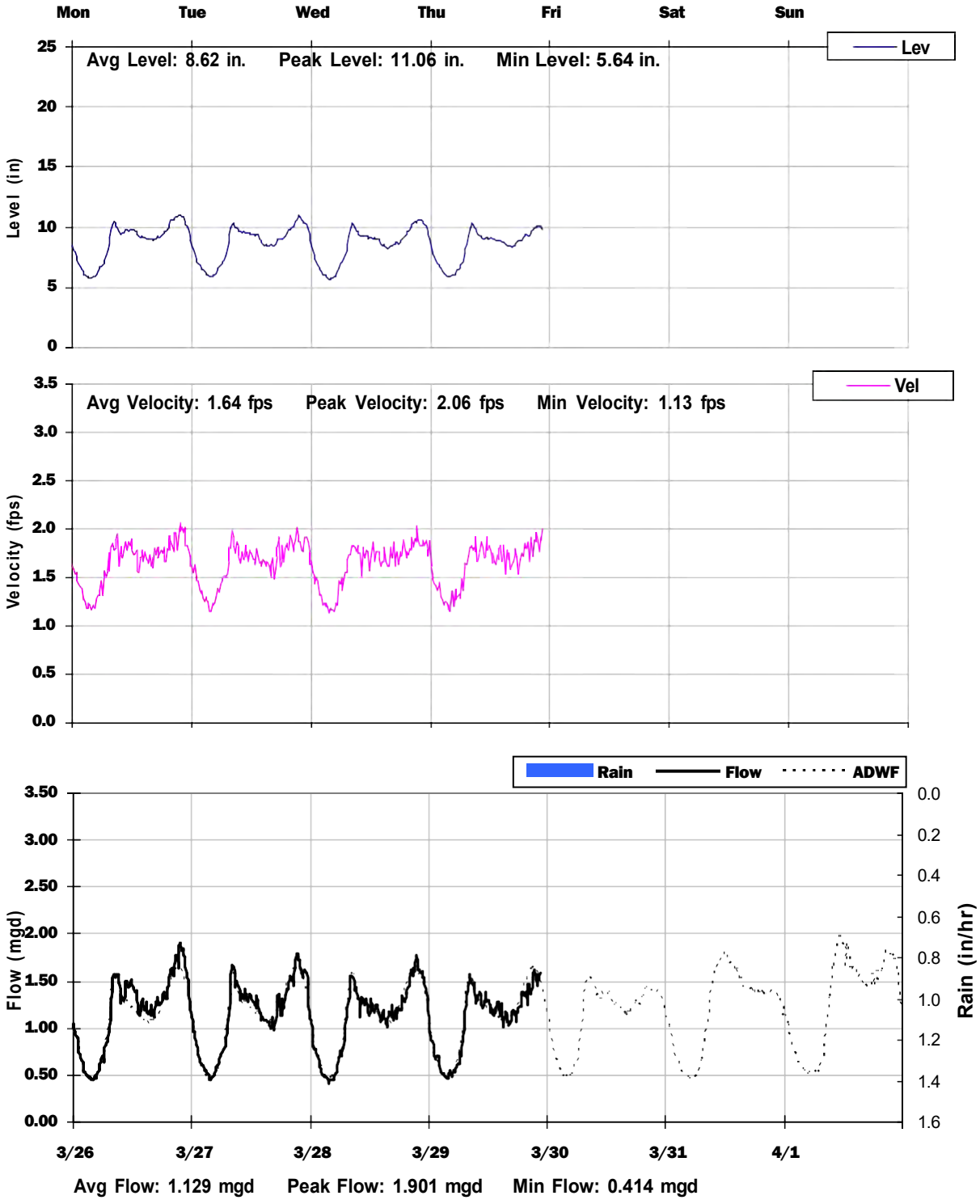
3/12/2018 to 3/19/2018



TC-10
Weekly Level, Velocity and Flow Hydrographs
3/19/2018 to 3/26/2018



TC-10
Weekly Level, Velocity and Flow Hydrographs
3/26/2018 to 4/2/2018



TC-10

City of Tracy, California

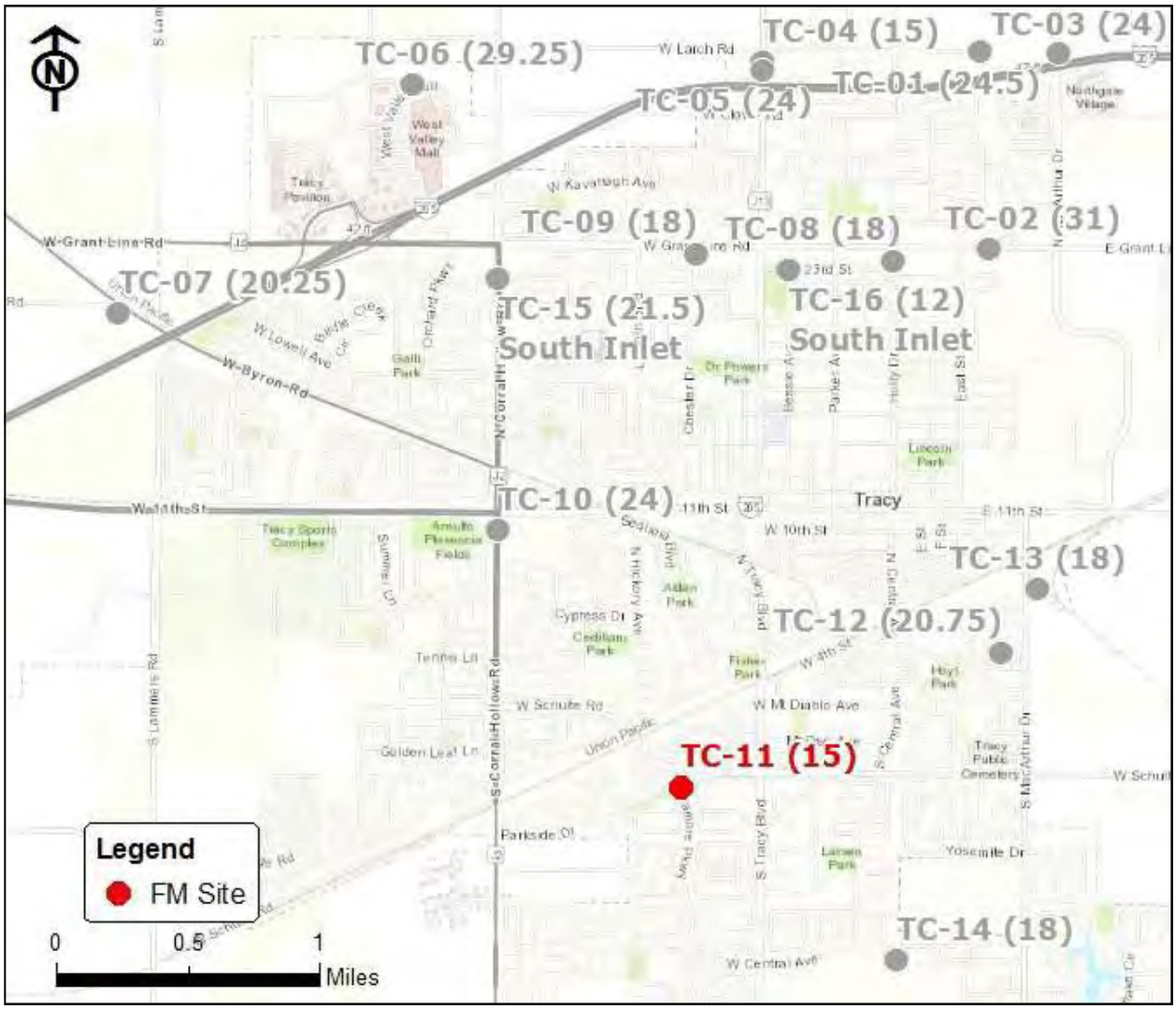
Sanitary Sewer Flow Monitoring

February 26 - April 08, 2020

Monitoring Site: **TC-11**

Location: **Sycamore Pkwy at Sienna Park Drive**

Data Summary Report



Vicinity Map: TC-11

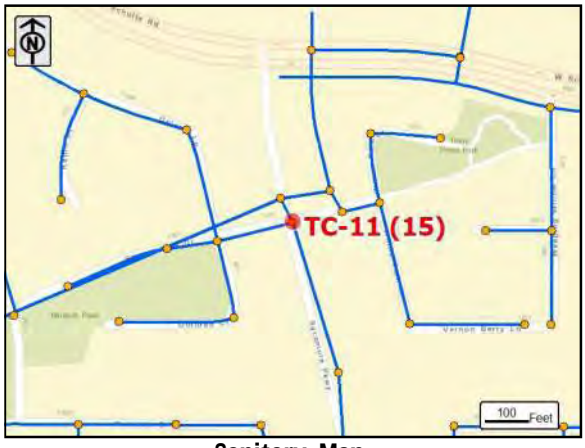
TC-11

Site Information

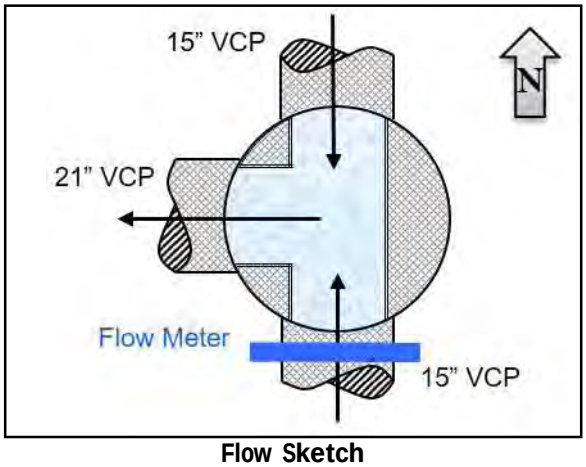
Location:	**Sycamore Pkwy at Sienna Park Drive**
City Manhole:	
Coordinates:	**121.4402° W, 37.7243° N**
Rim Elevation (Earth):	**67 feet**
Pipe Diameter:	**15 inches**
ADWF:	**0.342 mgd**
Peak Measured Flow:	**0.594 mgd**



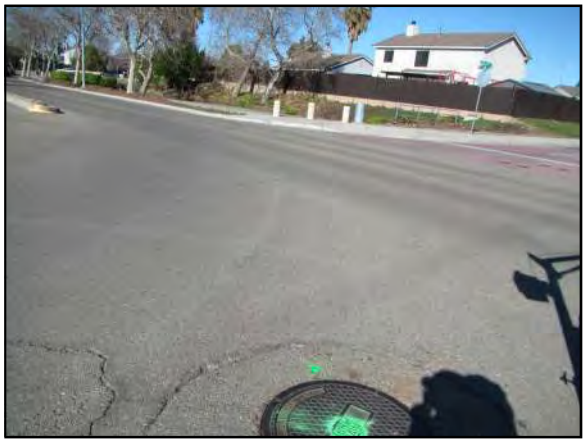
Satellite Map



Sanitary Map



Flow Sketch



Street View



Plan View

TC-11

Additional Site Photos

Effluent Pipe



North Influent Pipe



TC-11

Additional Site Photos

South Influent Pipe

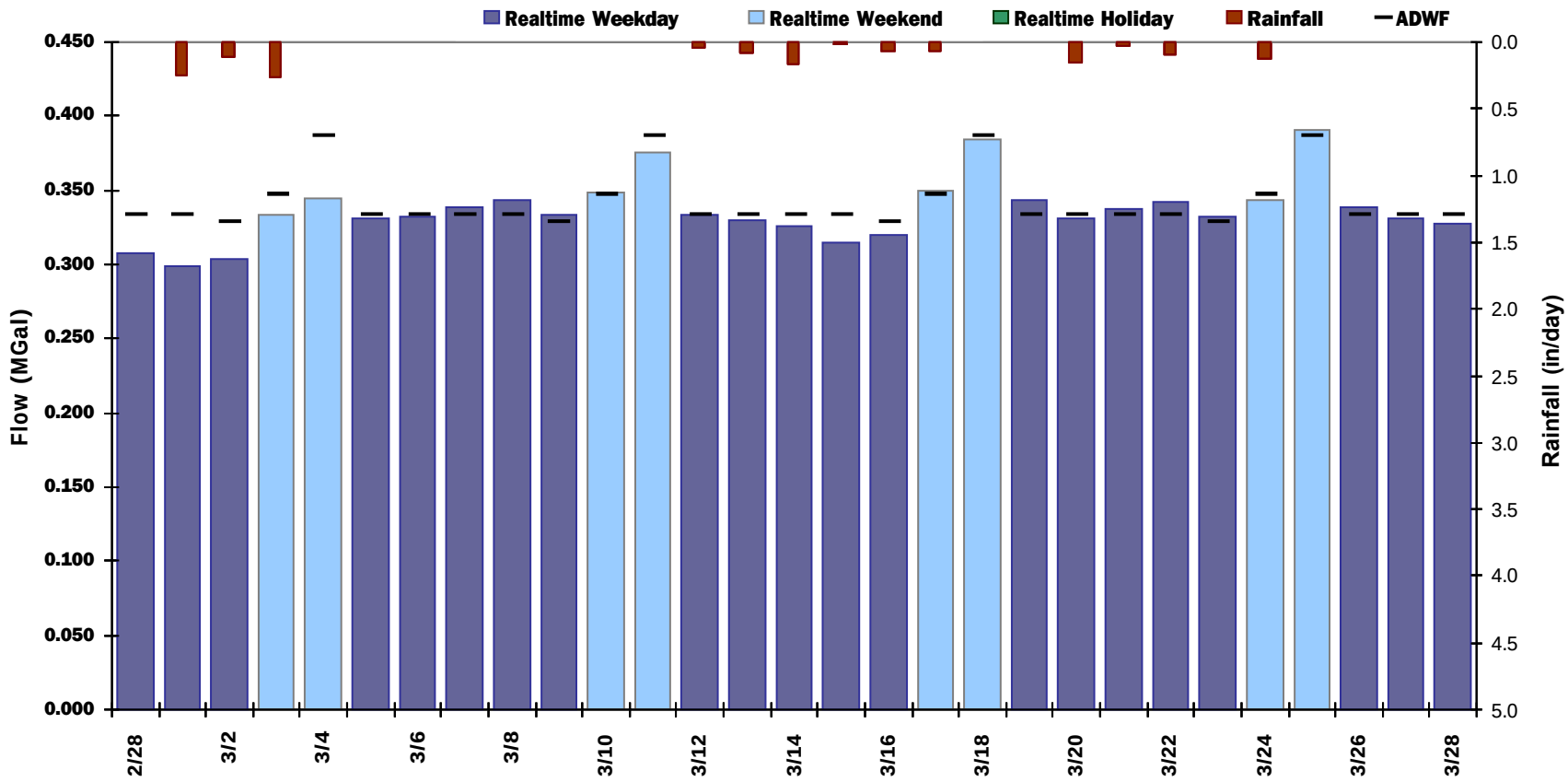


TC-11

Period Flow Summary: Daily Flow Totals

Avg Period Flow: 0.337 MGal **Peak Daily Flow: 0.390 MGal** **Min Daily Flow: 0.299 MGal**

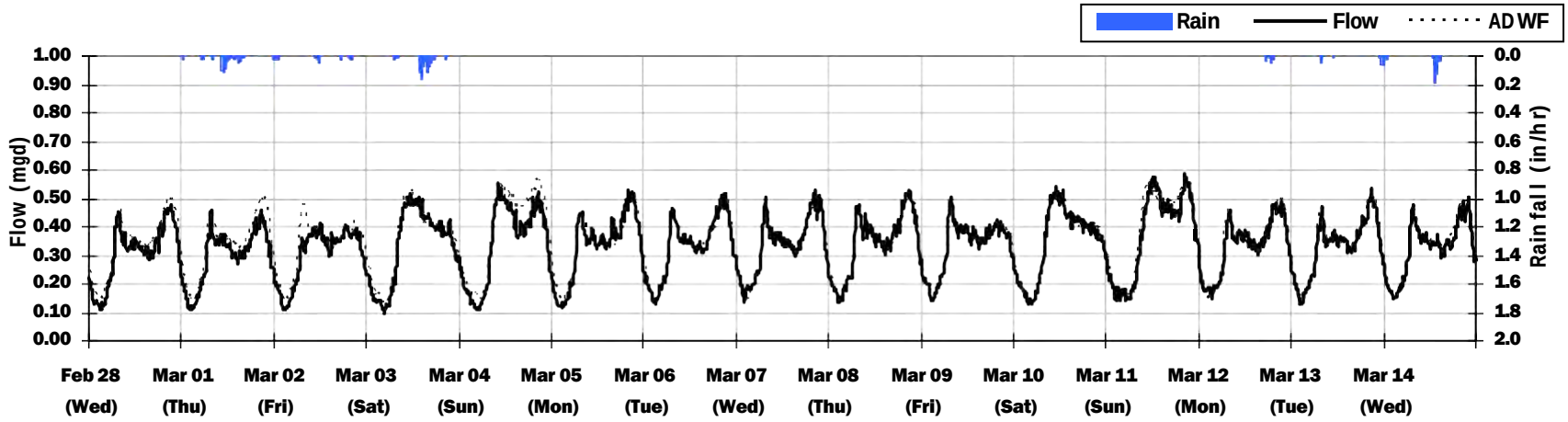
Total Period Rainfall: 1.43 inches

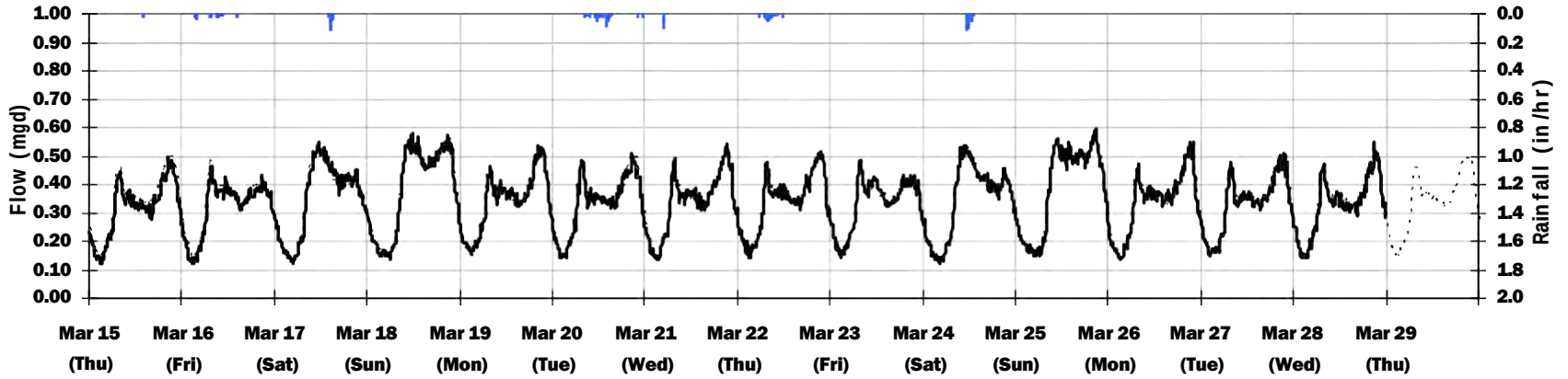


TC-11

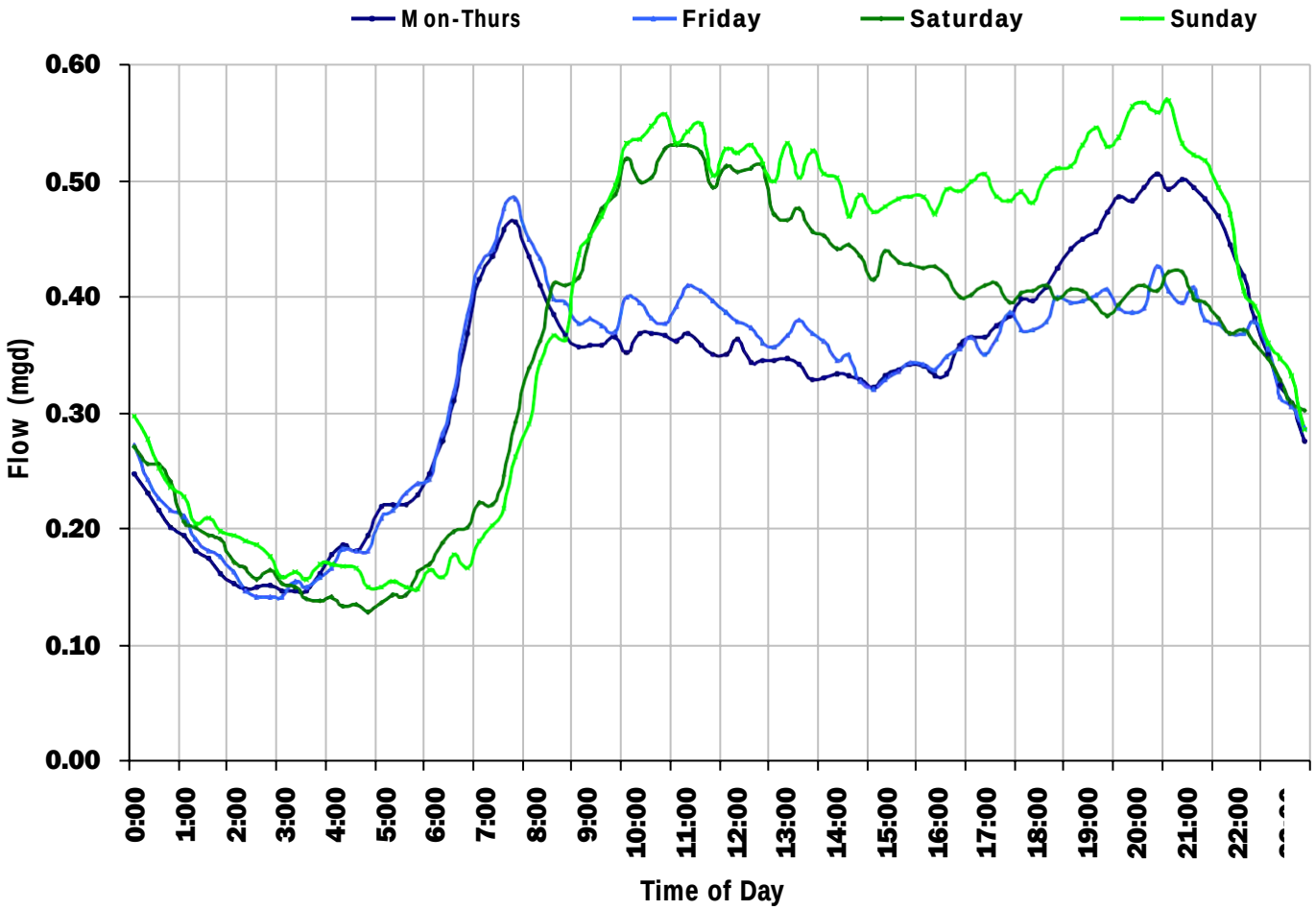
Flow Summary: 2/28/2018 to 3/29/2018

Total Period Rainfall: 1.43 inches Avg Flow: 0.337 mgd Peak Flow: 0.594 mgd Min Flow: 0.099 mgd



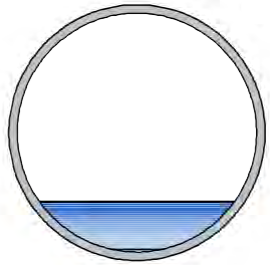


TC-11
Average Dry Weather Flow Hydrographs



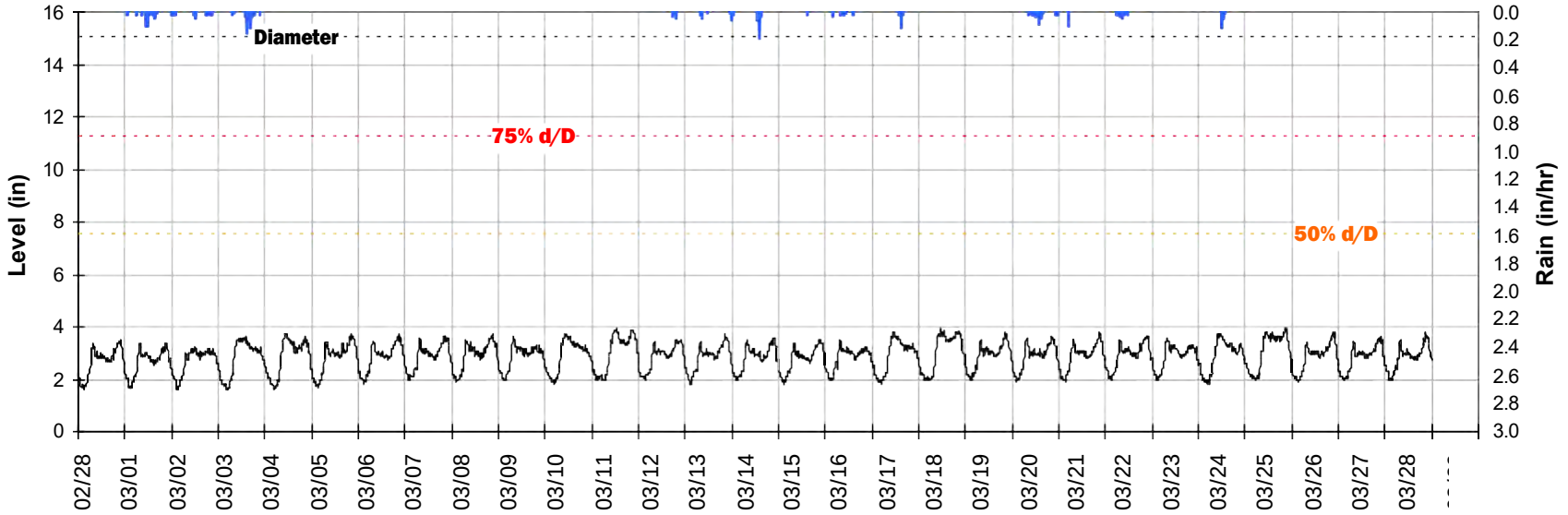
ADWF:

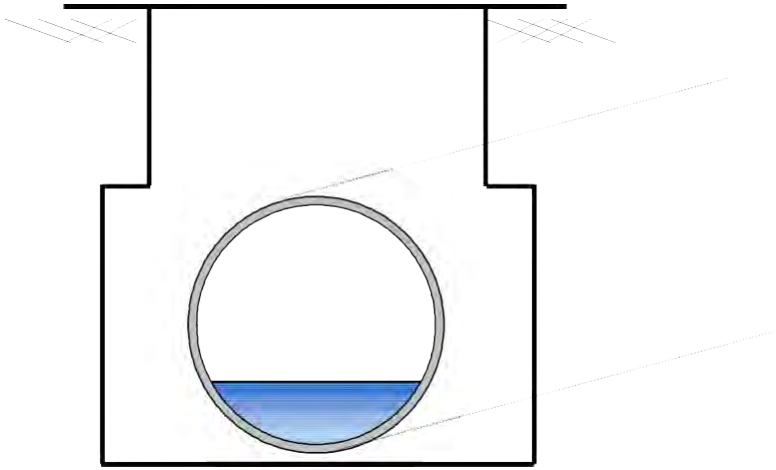
0.342 *mgd*



TC-11
Site Capacity and Surcharge Summary

Realtime Flow Levels with Rainfall Data over Monitoring Period



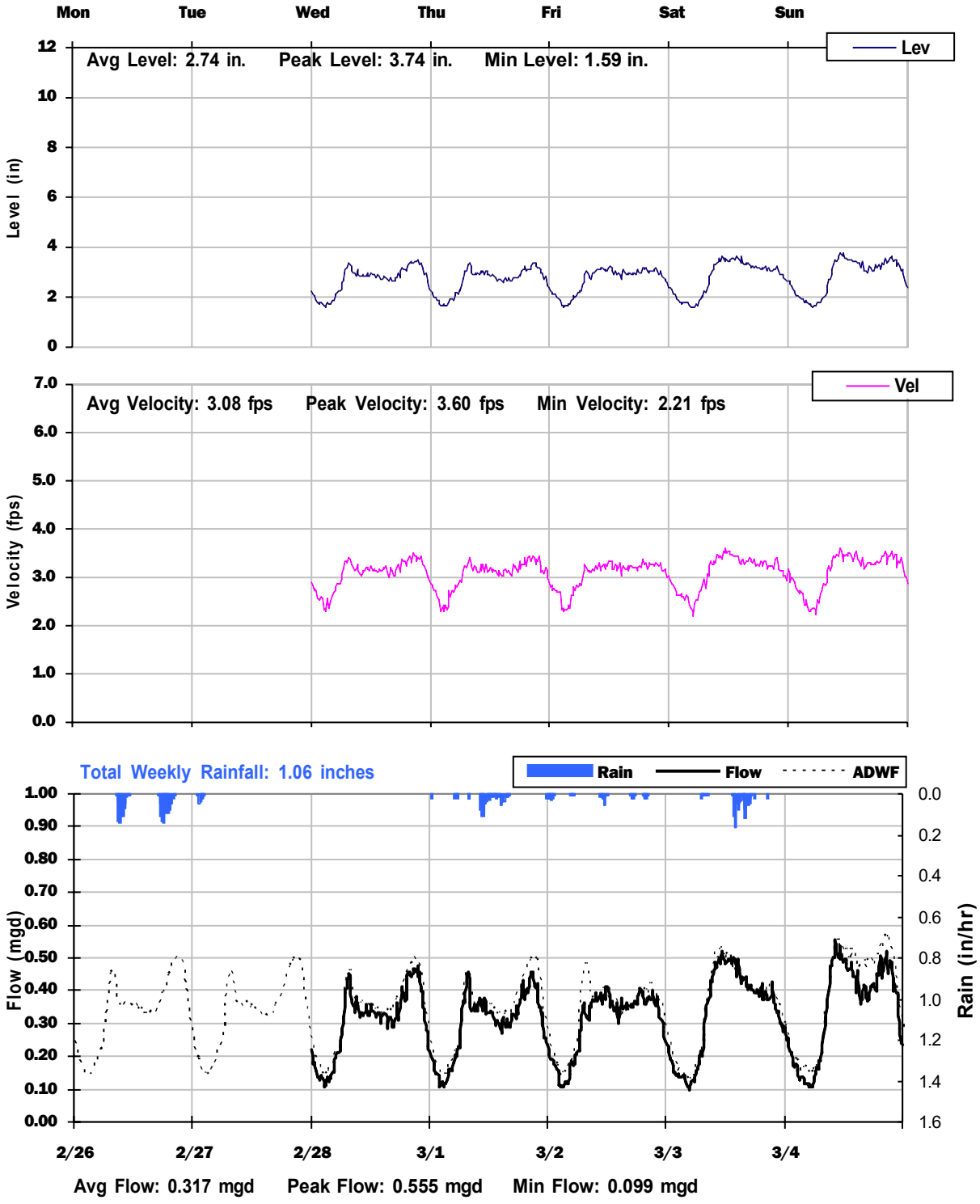


Pipe Diameter:	**15**	***inches***
Peak Measured Level:	**3.95**	***inches***
Peak d/D Ratio:	**0.26**	

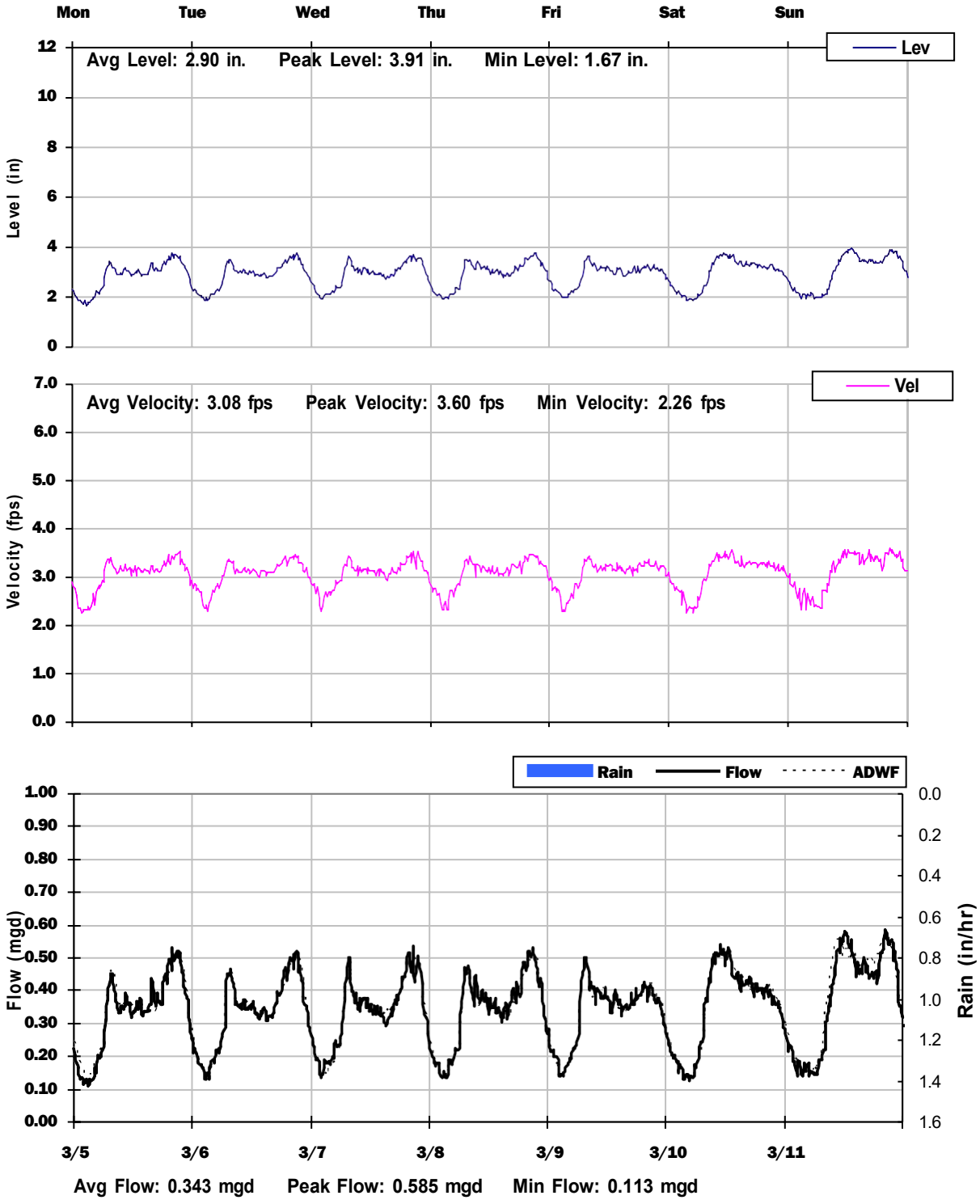
TC-11

Weekly Level, Velocity and Flow Hydrographs

2/26/2018 to 3/5/2018



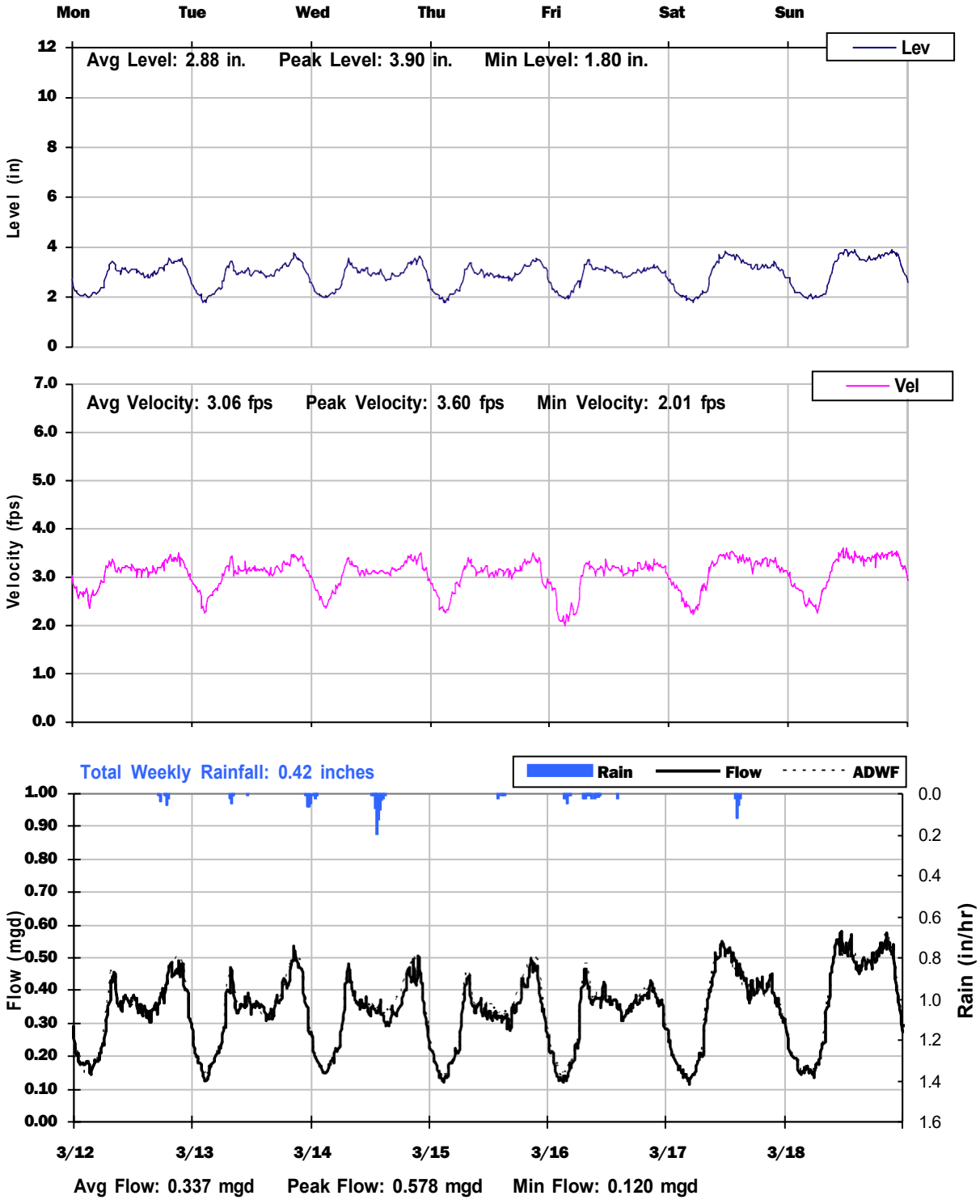
TC-11
Weekly Level, Velocity and Flow Hydrographs
3/5/2018 to 3/12/2018



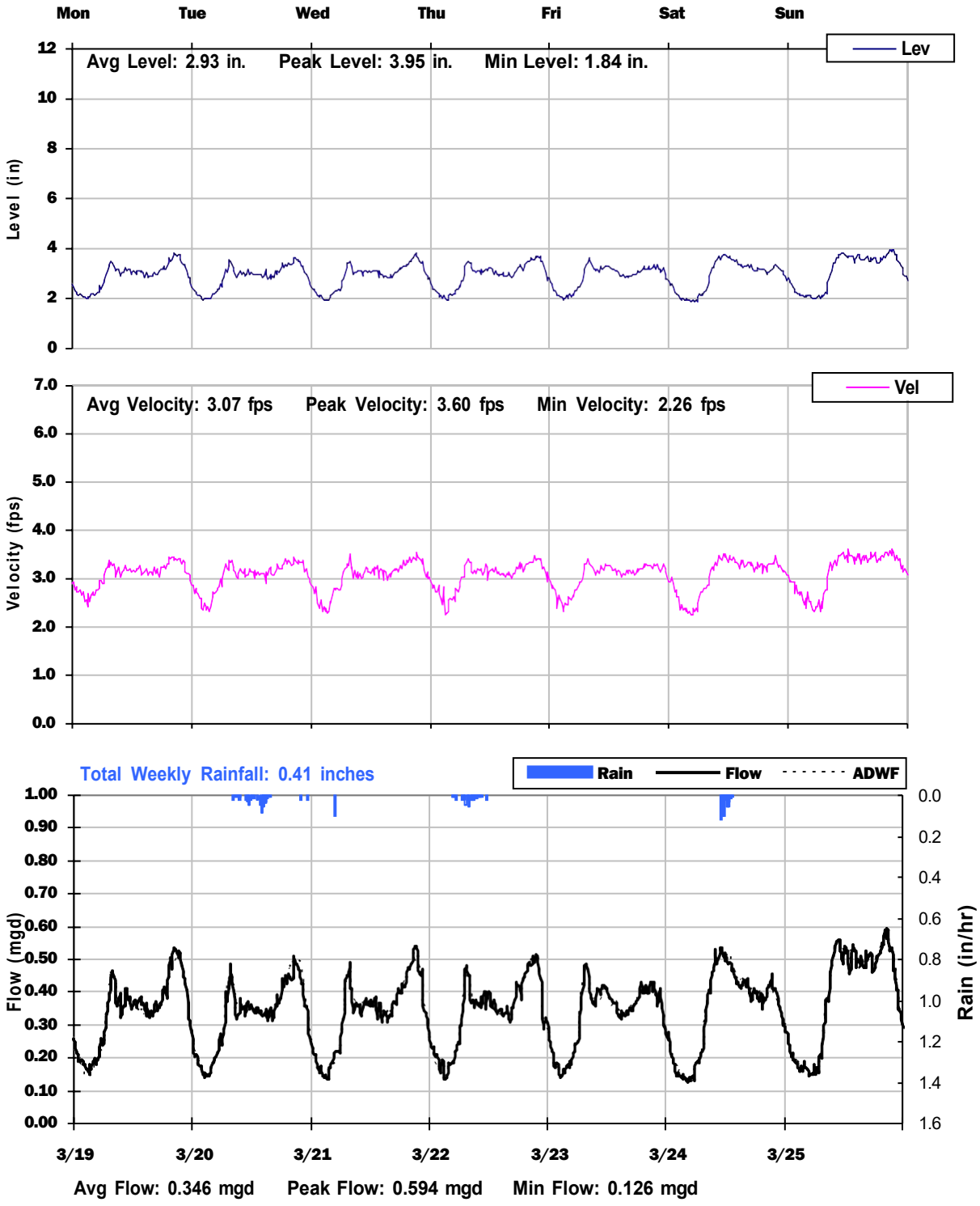
TC-11

Weekly Level, Velocity and Flow Hydrographs

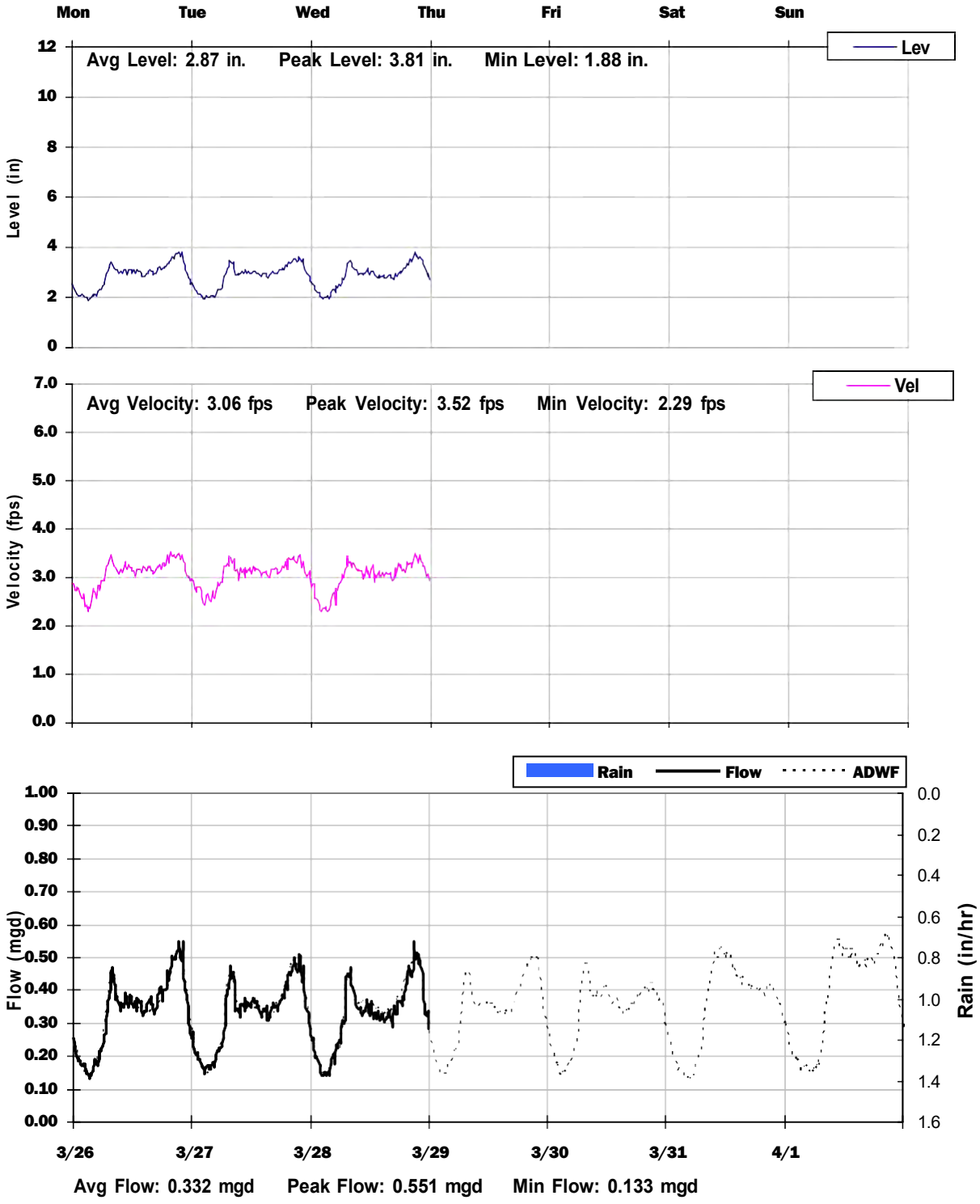
3/12/2018 to 3/19/2018



TC-11
Weekly Level, Velocity and Flow Hydrographs
3/19/2018 to 3/26/2018



TC-11
Weekly Level, Velocity and Flow Hydrographs
3/26/2018 to 4/2/2018



TC-11

City of Tracy, California

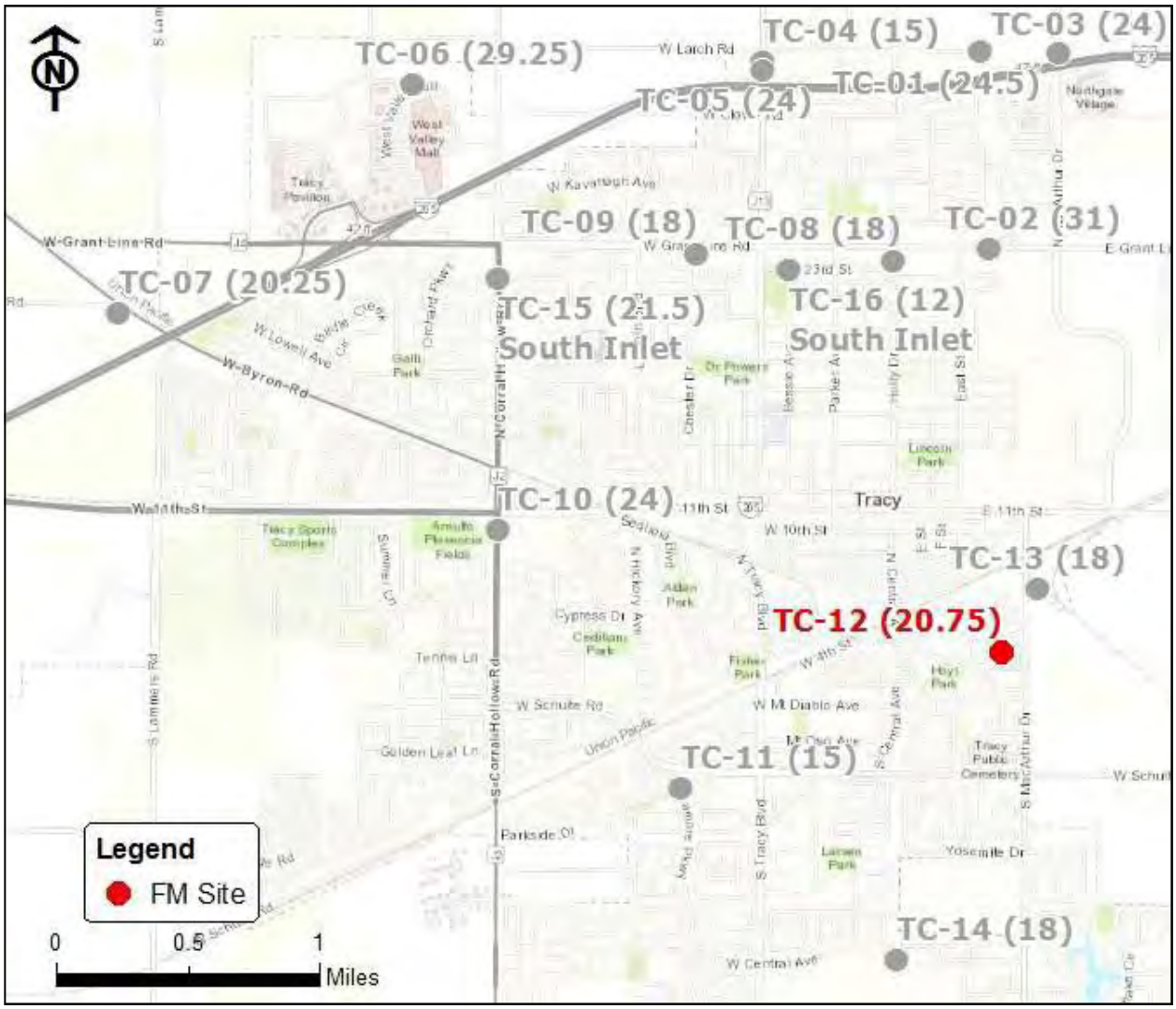
Sanitary Sewer Flow Monitoring

February 26 - April 08, 2020

Monitoring Site: **TC-12**

Location: **483 Leamon Street, just west of Avila Street**

Data Summary Report



Vicinity Map: TC-12

TC-12

Site Information

Location: 483 Leamon Street, just west of Avila Street

City Manhole:

Coordinates: 121.4181° W, 37.7319° N

Rim Elevation (Earth): 61 feet

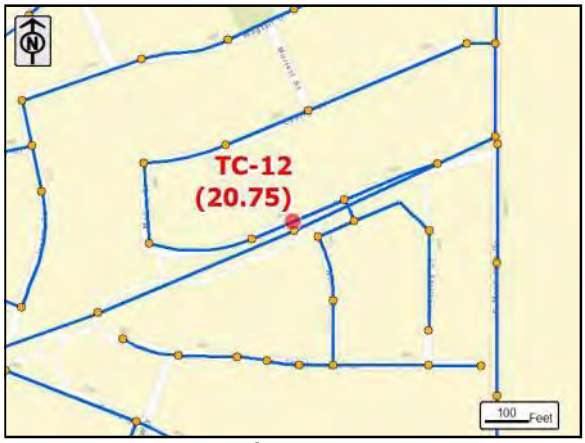
Pipe Diameter: 20.75 inches

ADWF: 1.086 mgd

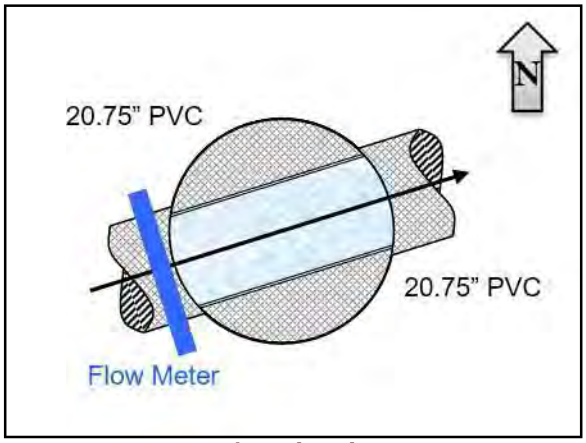
Peak Measured Flow: 1.911 mgd



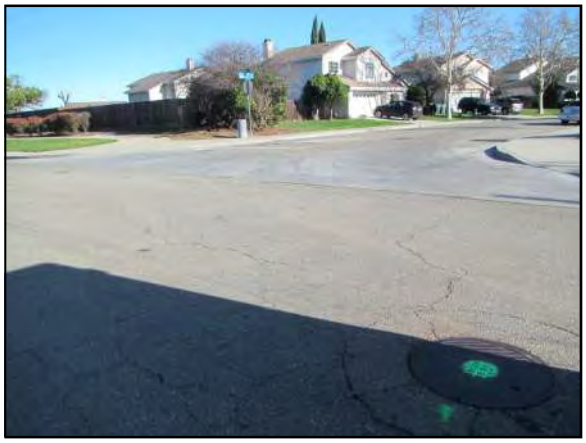
Satellite Map



Sanitary Map



Flow Sketch


Street View


Plan View

TC-12

Additional Site Photos

Effluent Pipe



Monitored Influent Pipe

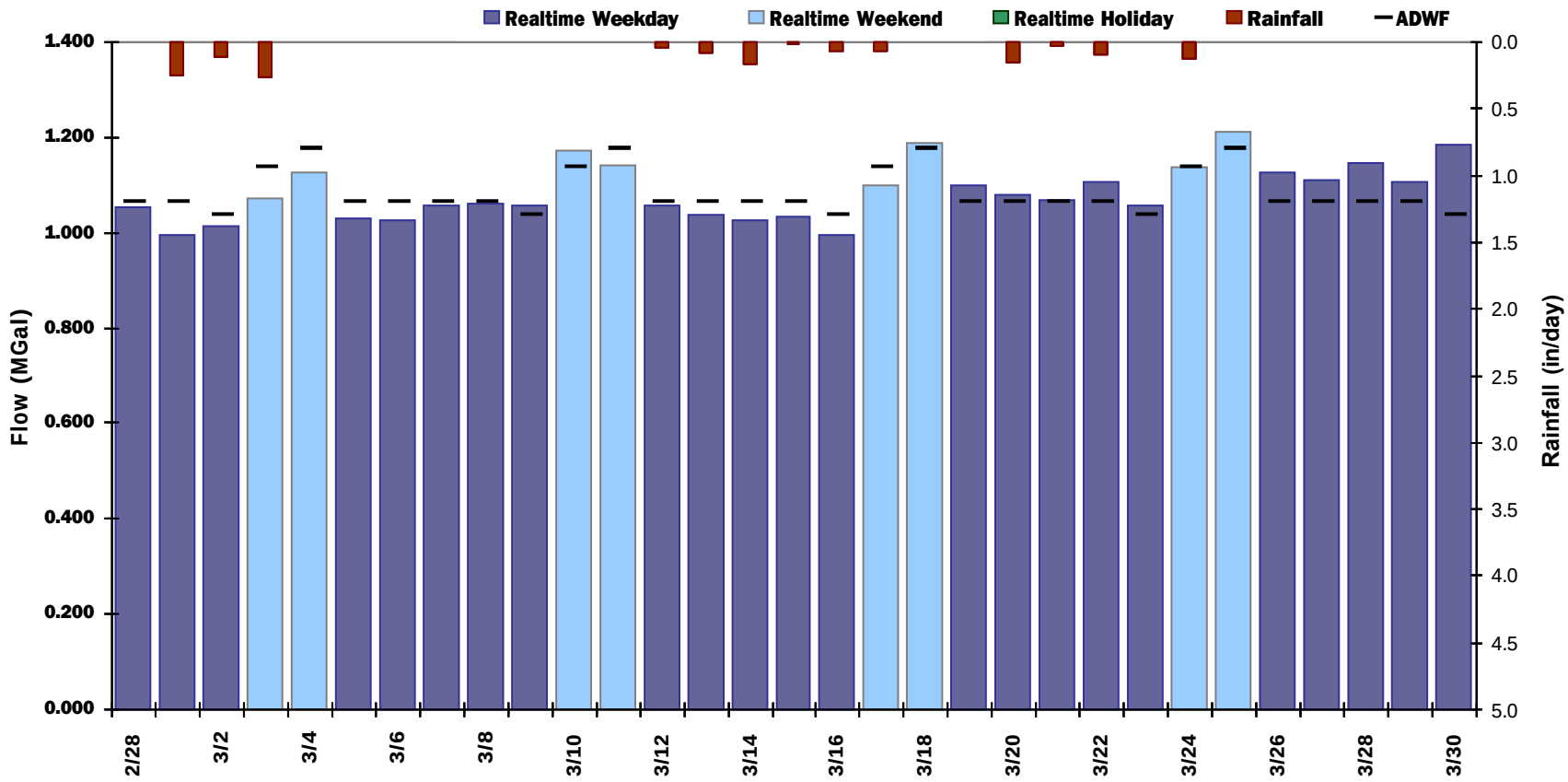


TC-12

Period Flow Summary: Daily Flow Totals

Avg Period Flow: 1.087 MGal **Peak Daily Flow: 1.211 MGal** **Min Daily Flow: 0.996 MGal**

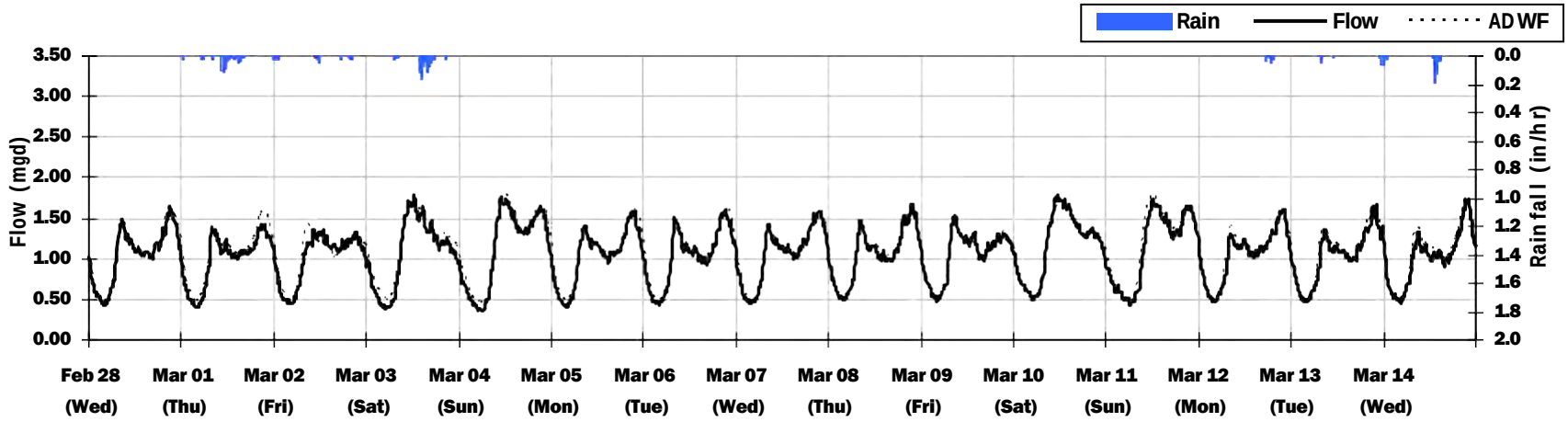
Total Period Rainfall: 1.43 inches

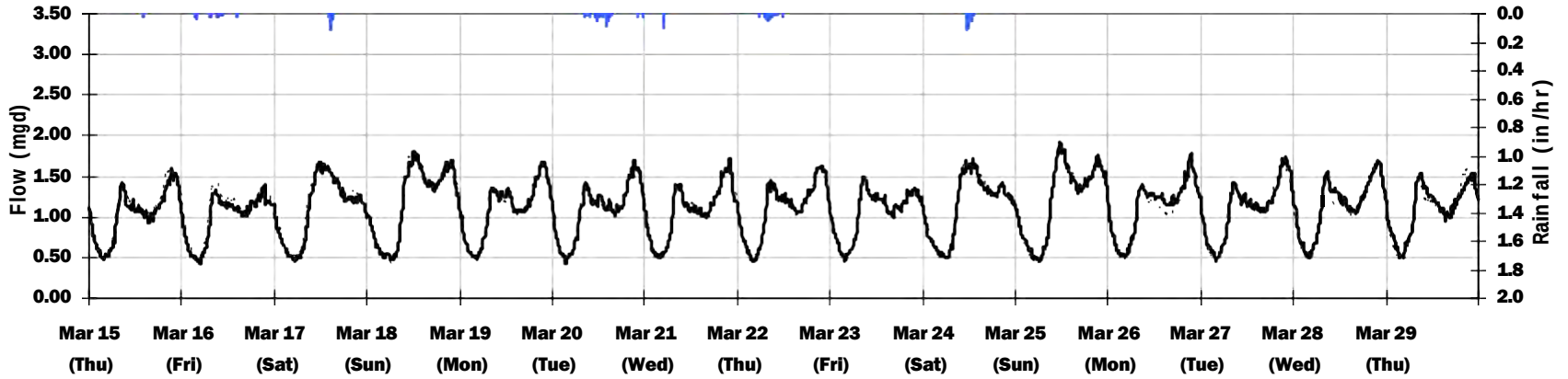


TC-12

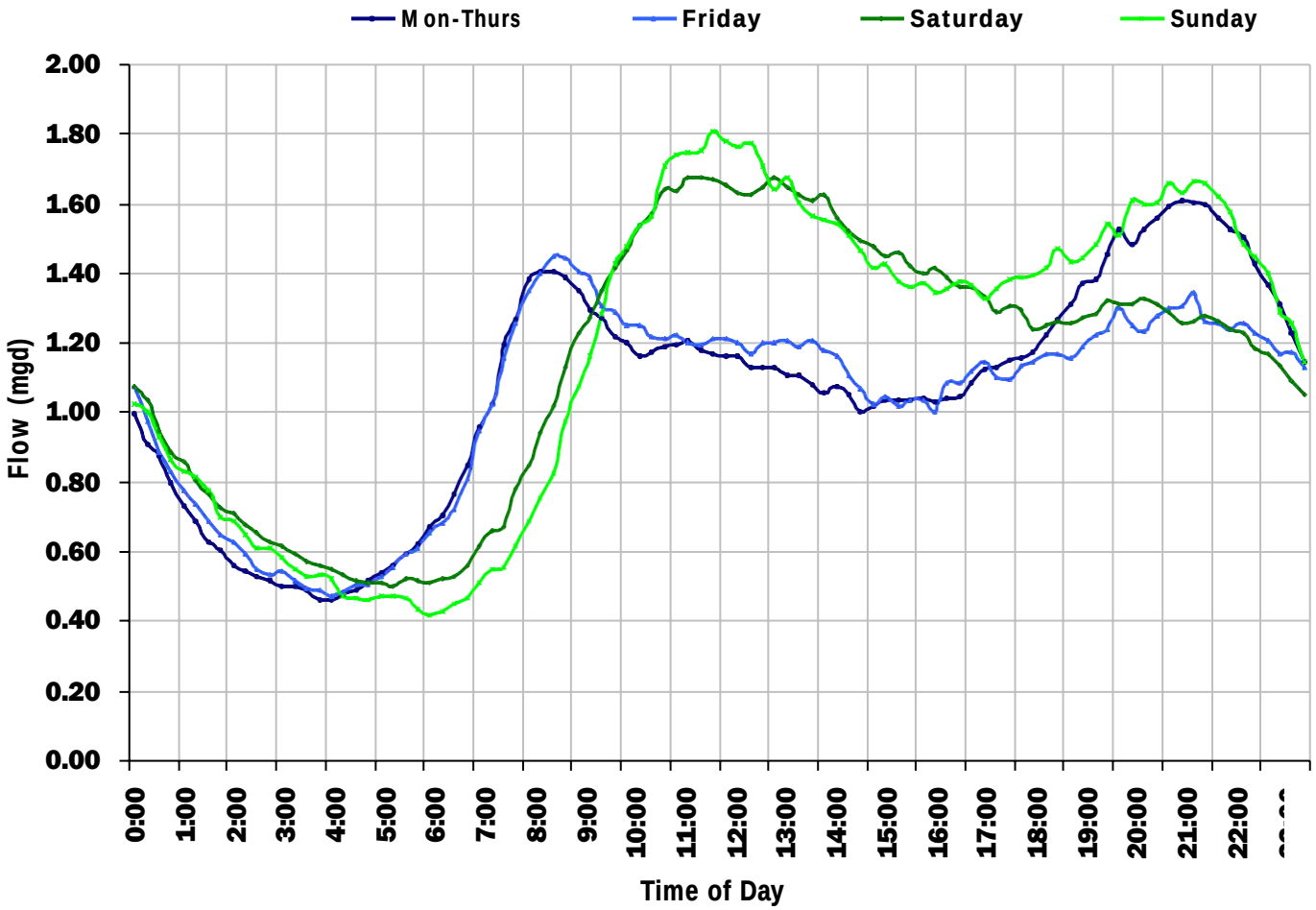
Flow Summary: 2/28/2018 to 3/29/2018

Total Period Rainfall: 1.43 inches Avg Flow: 1.083 mgd Peak Flow: 1.911 mgd Min Flow: 0.358 mgd



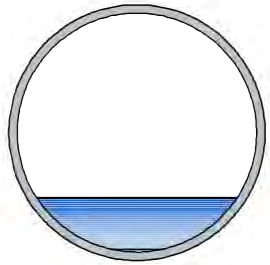


TC-12
Average Dry Weather Flow Hydrographs



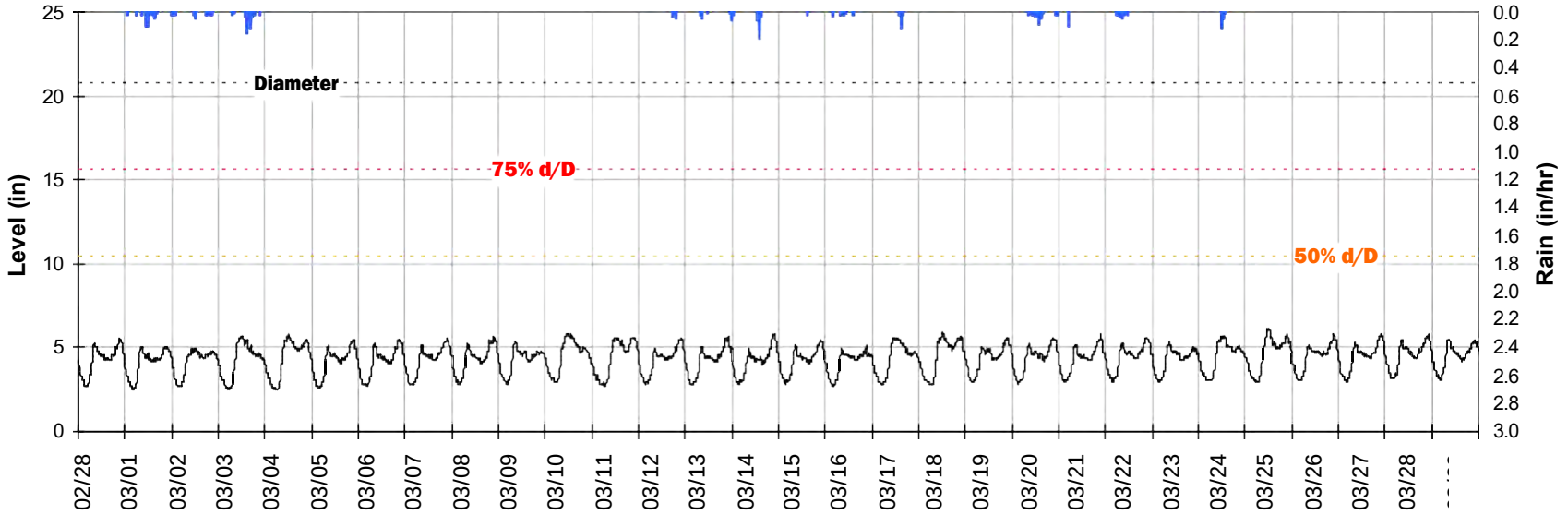
ADWF:

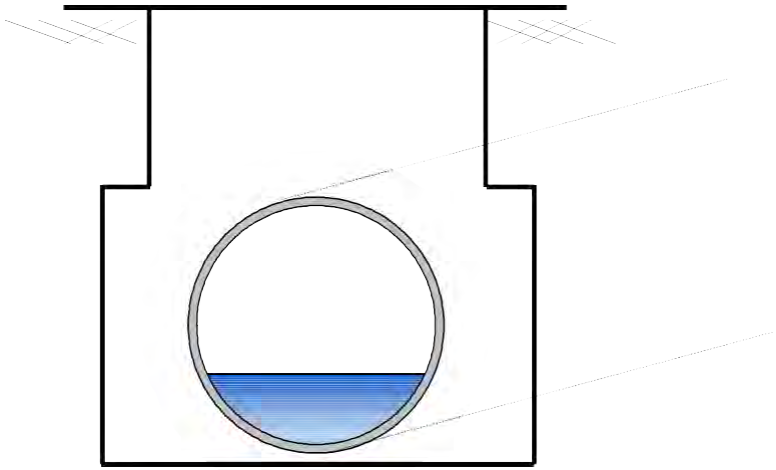
1.086 *mgd*



TC-12
Site Capacity and Surcharge Summary

Realtime Flow Levels with Rainfall Data over Monitoring Period



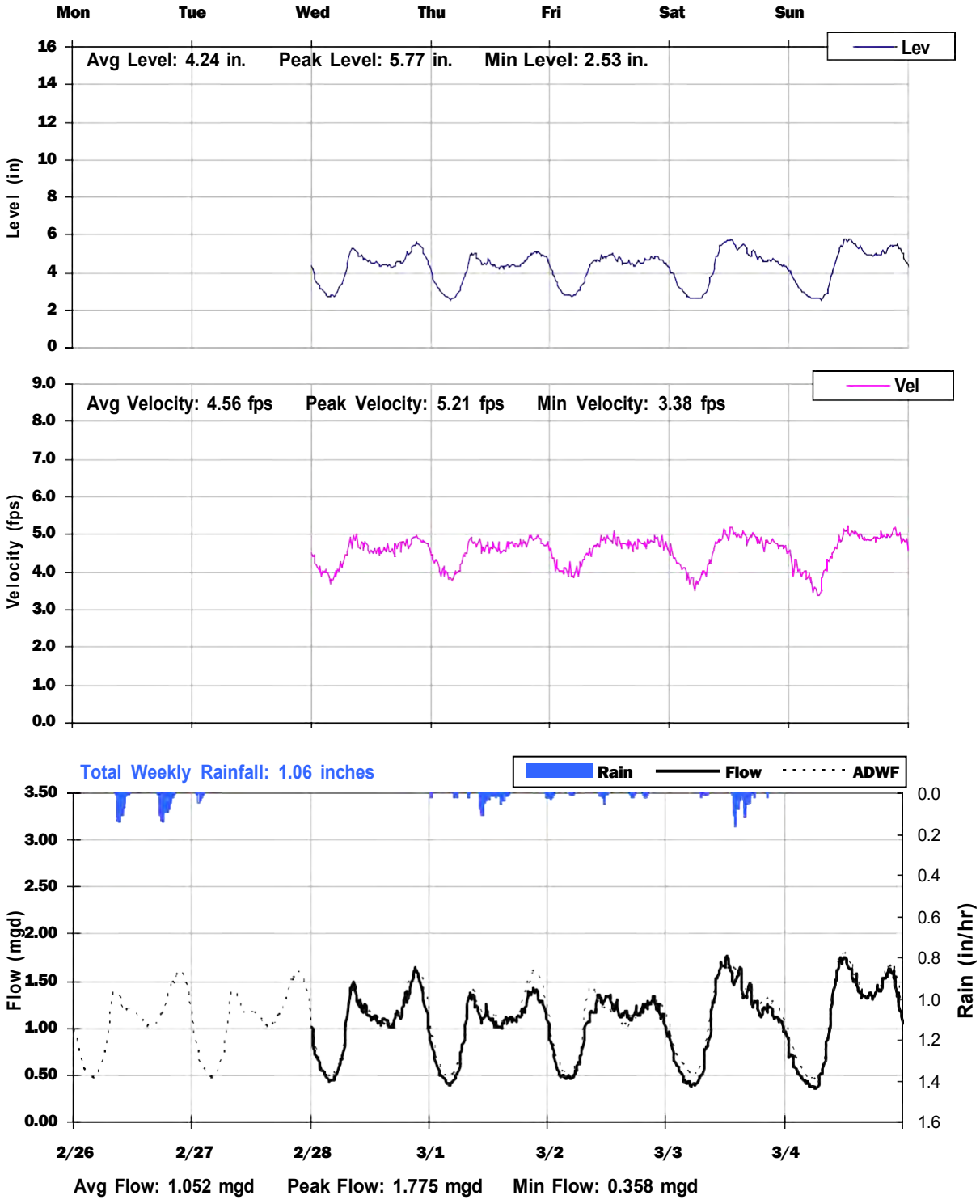


Pipe Diameter:	**20.8**	***inches***
Peak Measured Level:	**6.11**	***inches***
Peak d/D Ratio:	**0.29**	

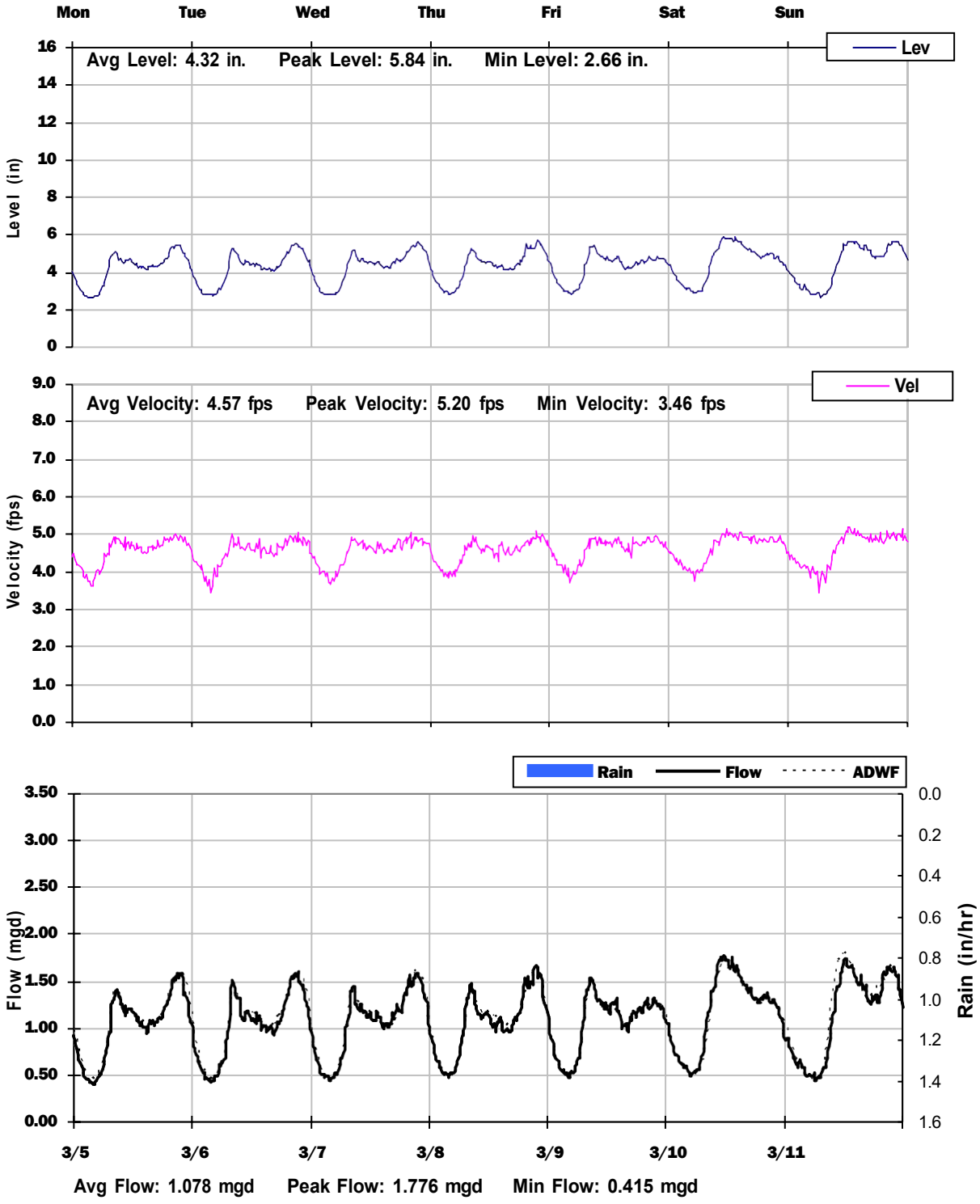
TC-12

Weekly Level, Velocity and Flow Hydrographs

2/26/2018 to 3/5/2018



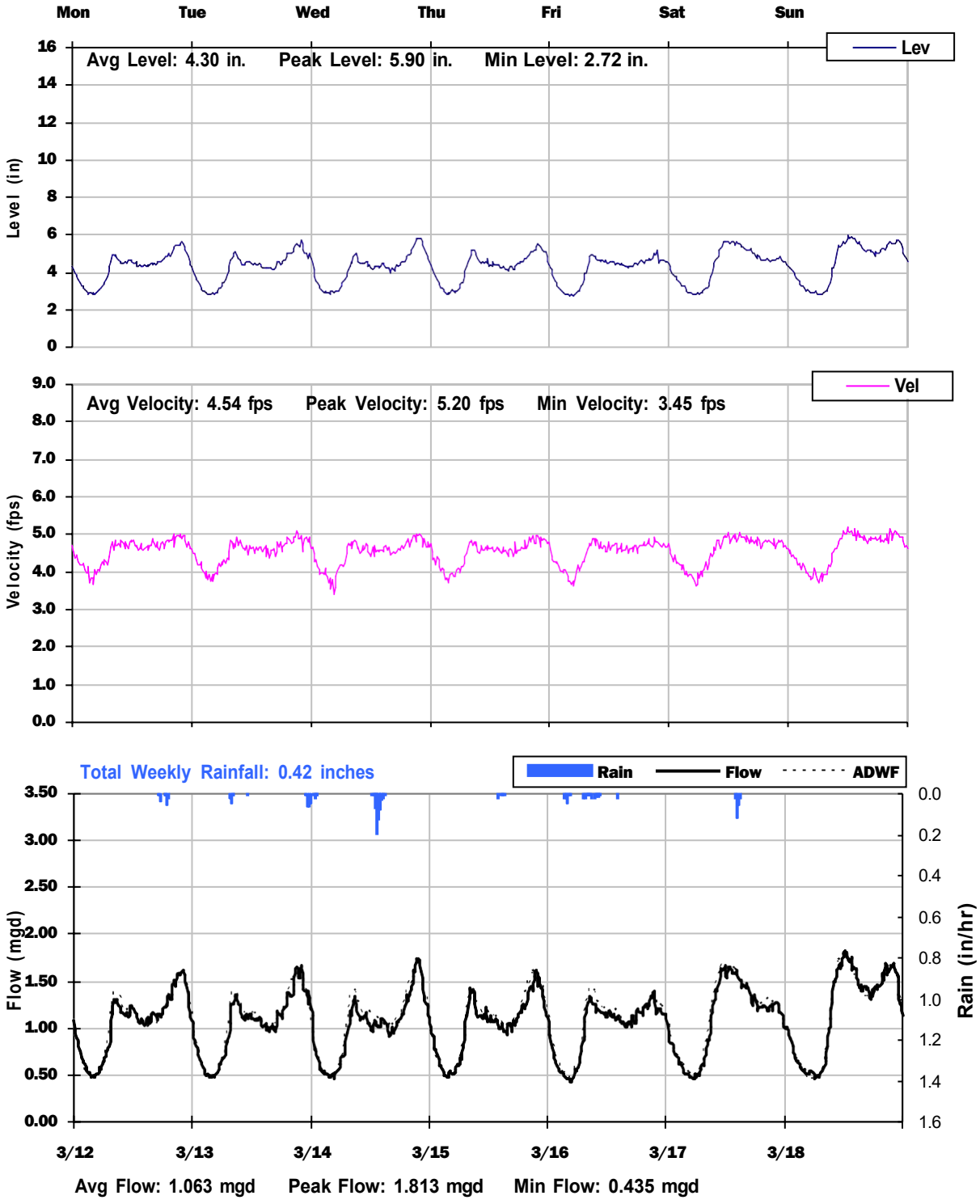
TC-12
Weekly Level, Velocity and Flow Hydrographs
3/5/2018 to 3/12/2018



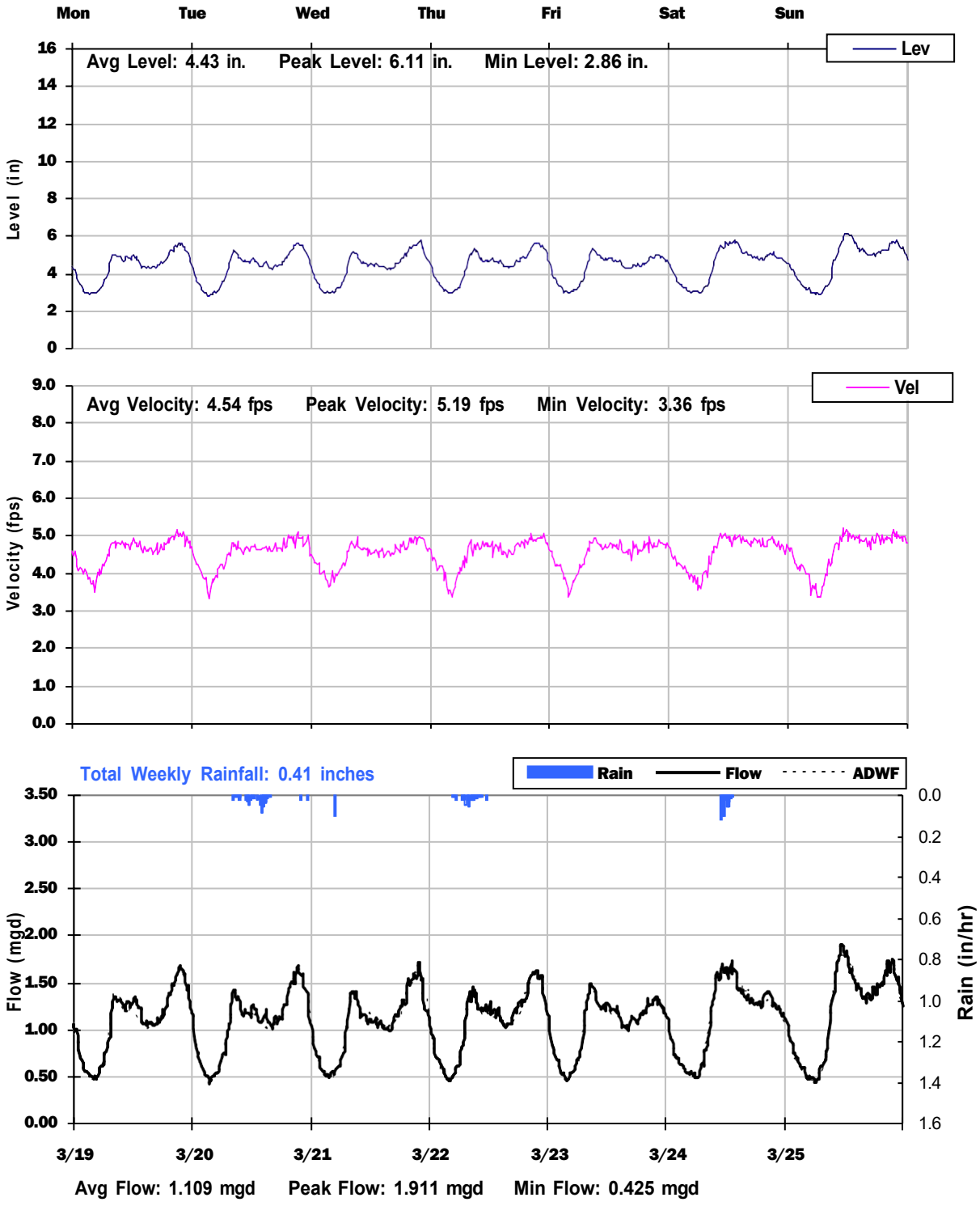
TC-12

Weekly Level, Velocity and Flow Hydrographs

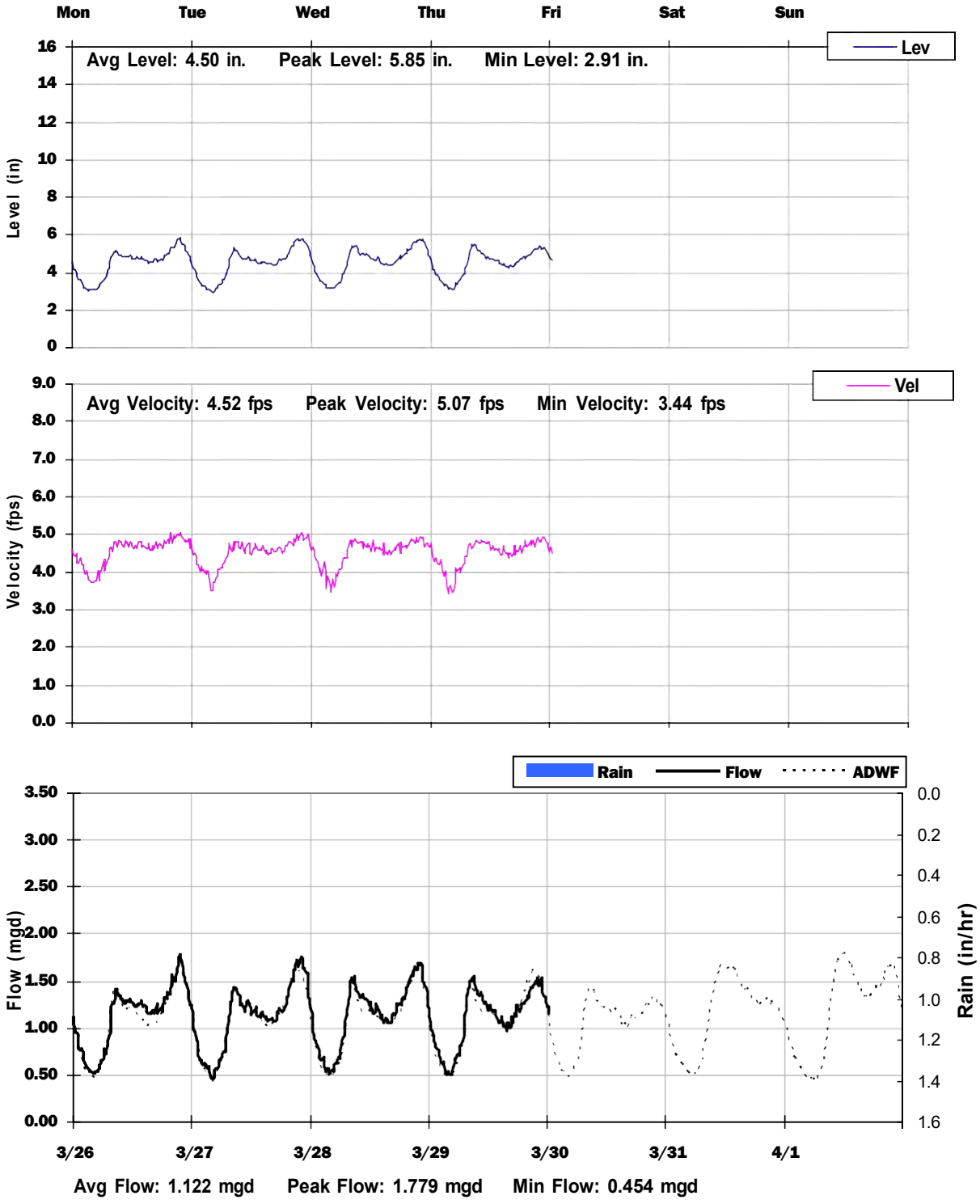
3/12/2018 to 3/19/2018



TC-12
Weekly Level, Velocity and Flow Hydrographs
3/19/2018 to 3/26/2018



TC-12
Weekly Level, Velocity and Flow Hydrographs
3/26/2018 to 4/2/2018



City of Tracy, California

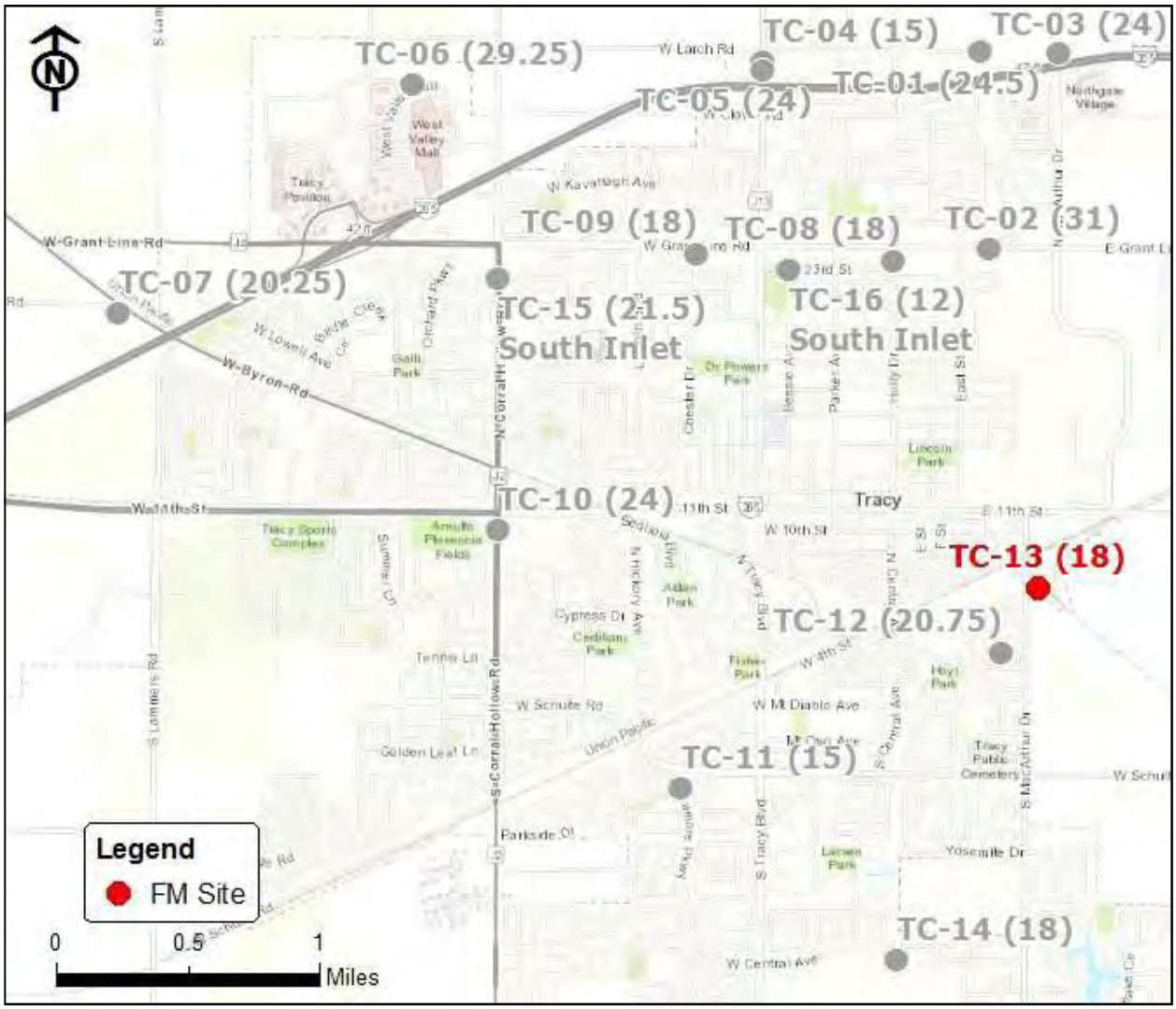
Sanitary Sewer Flow Monitoring

February 26 - April 08, 2020

Monitoring Site: **TC-13**

Location: **On dirt roadway between railroad (north) and Ice House Industrial Park (south), approx 245 feet east of MacArthur Drive**

Data Summary Report



Vicinity Map: TC-13

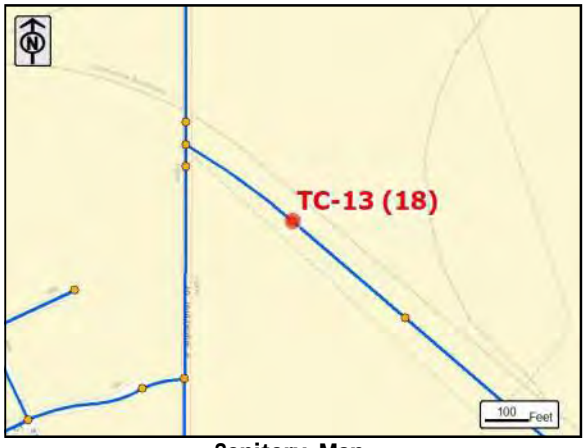
TC-13

Site Information

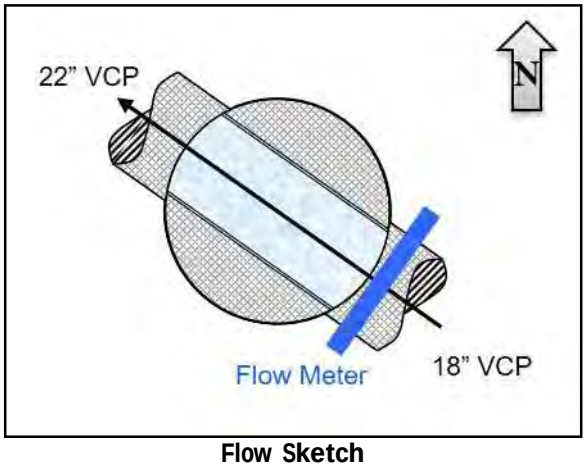
Location:	**On dirt roadway between railroad (north) and Ice House Industrial Park (south), approx 245 feet east of MacArthur**
City Manhole:	
Coordinates:	**121.4157° W, 37.7355° N**
Rim Elevation (Earth):	**57 feet**
Pipe Diameter:	**18 inches**
ADWF:	**0.191 mgd**
Peak Measured Flow:	**0.456 mgd**



Satellite Map



Sanitary Map



Flow Sketch



Street View



Plan View

TC-13

Additional Site Photos

Effluent Pipe



Monitored Influent Pipe

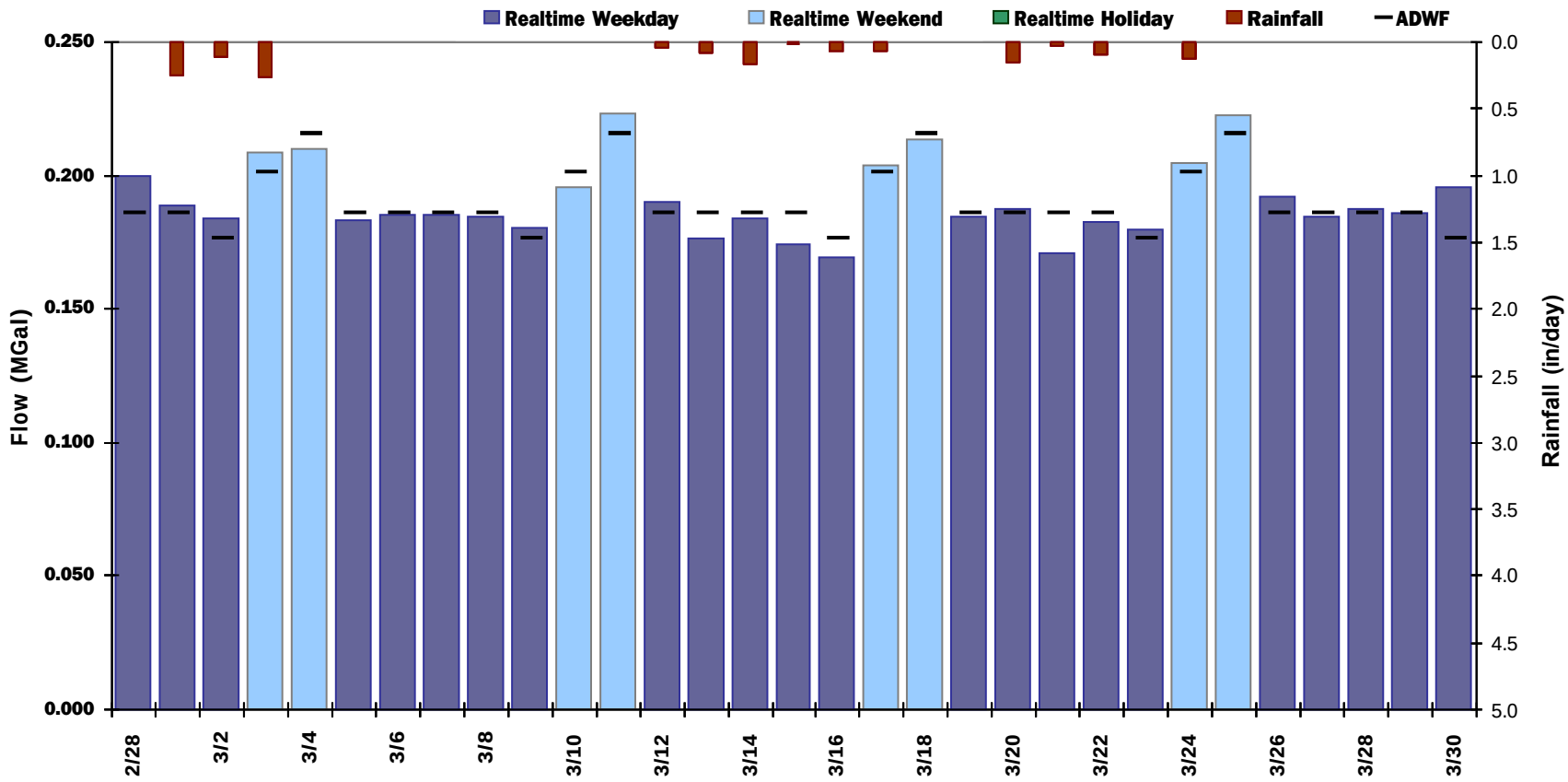


TC-13

Period Flow Summary: Daily Flow Totals

Avg Period Flow: 0.191 MGal **Peak Daily Flow: 0.223 MGal** **Min Daily Flow: 0.169 MGal**

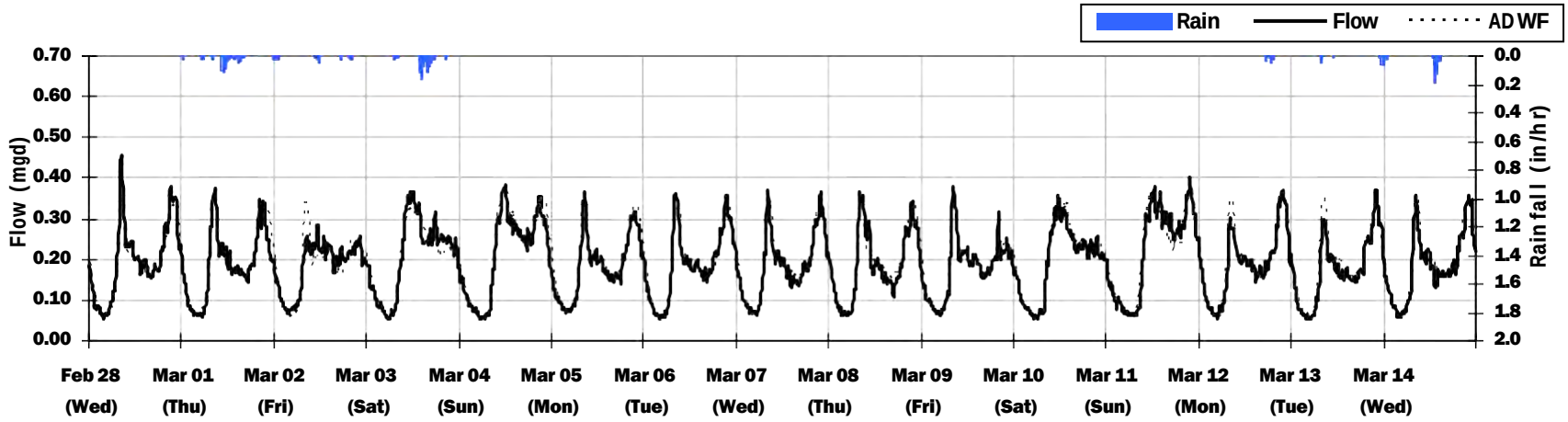
Total Period Rainfall: 1.43 inches

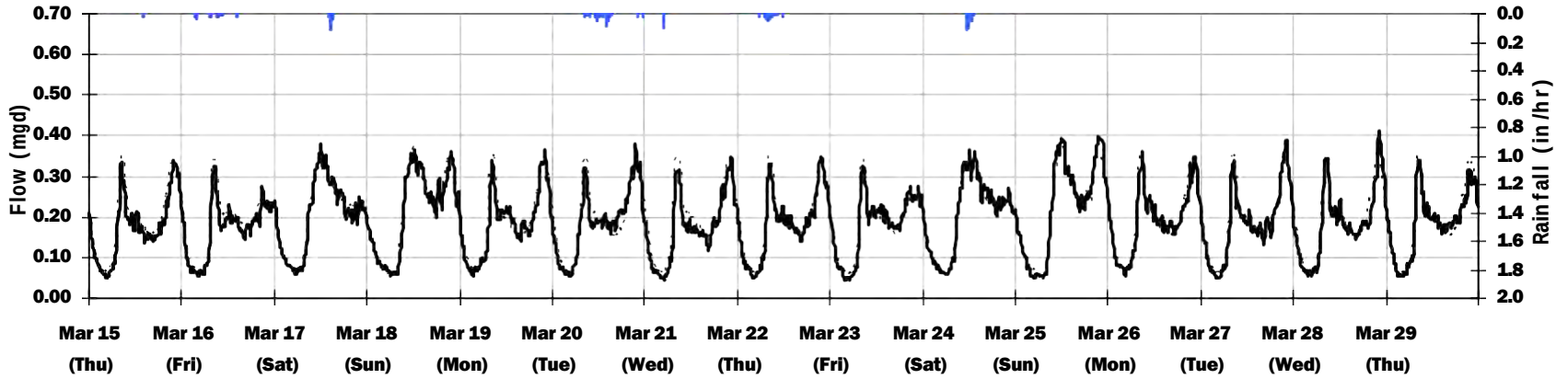


TC-13

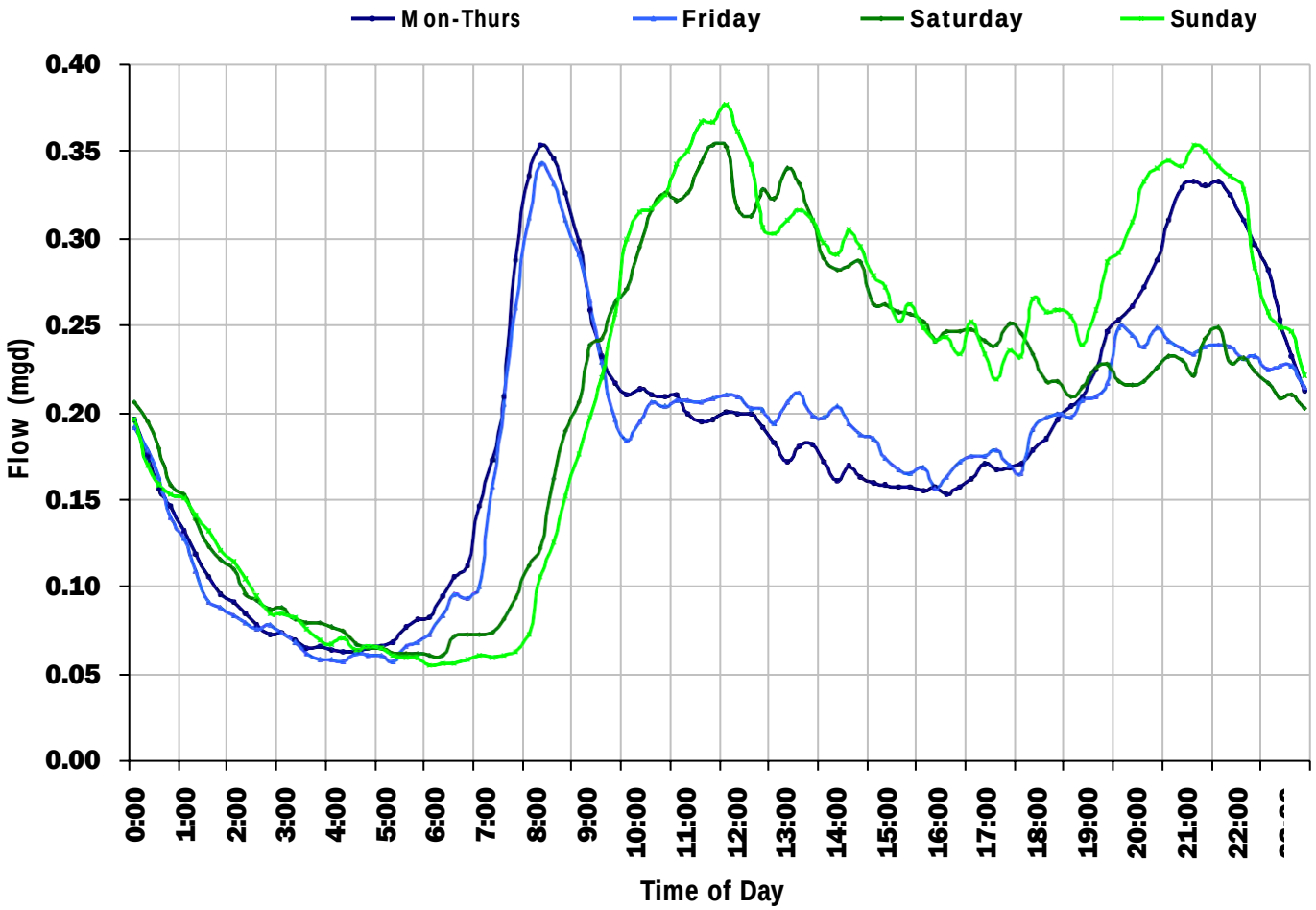
Flow Summary: 2/28/2018 to 3/29/2018

Total Period Rainfall: 1.43 inches Avg Flow: 0.191 mgd Peak Flow: 0.456 mgd Min Flow: 0.044 mgd



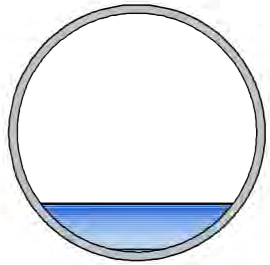


TC-13
Average Dry Weather Flow Hydrographs



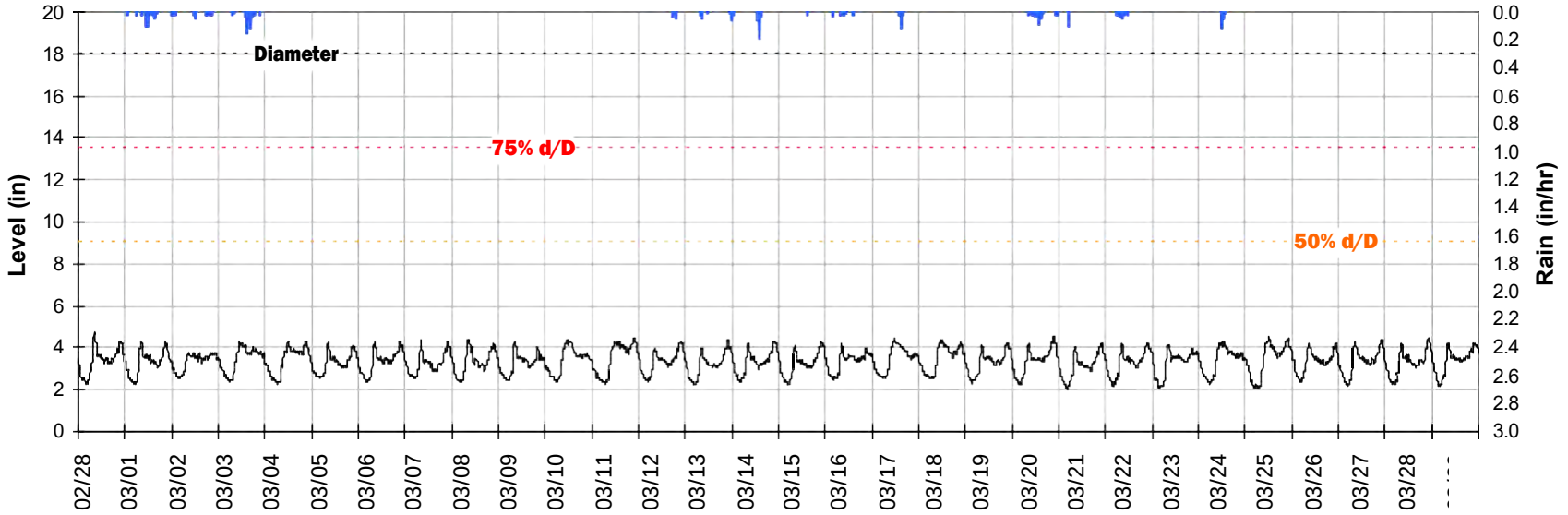
ADWF:

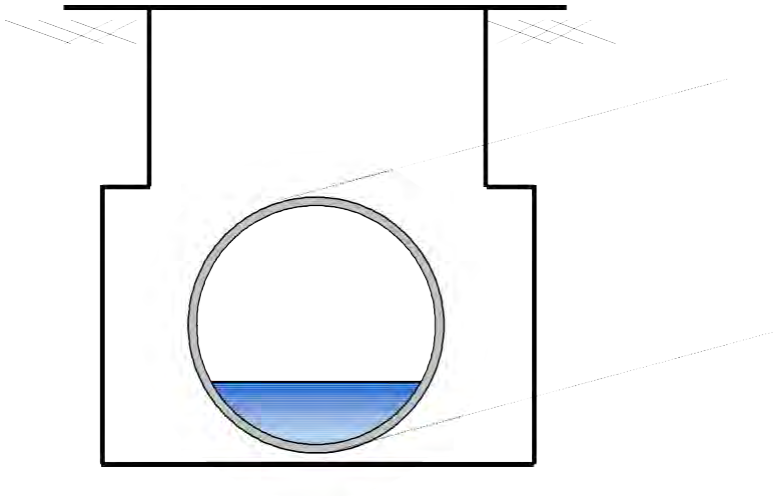
0.191 *mgd*



TC-13
Site Capacity and Surcharge Summary

Realtime Flow Levels with Rainfall Data over Monitoring Period



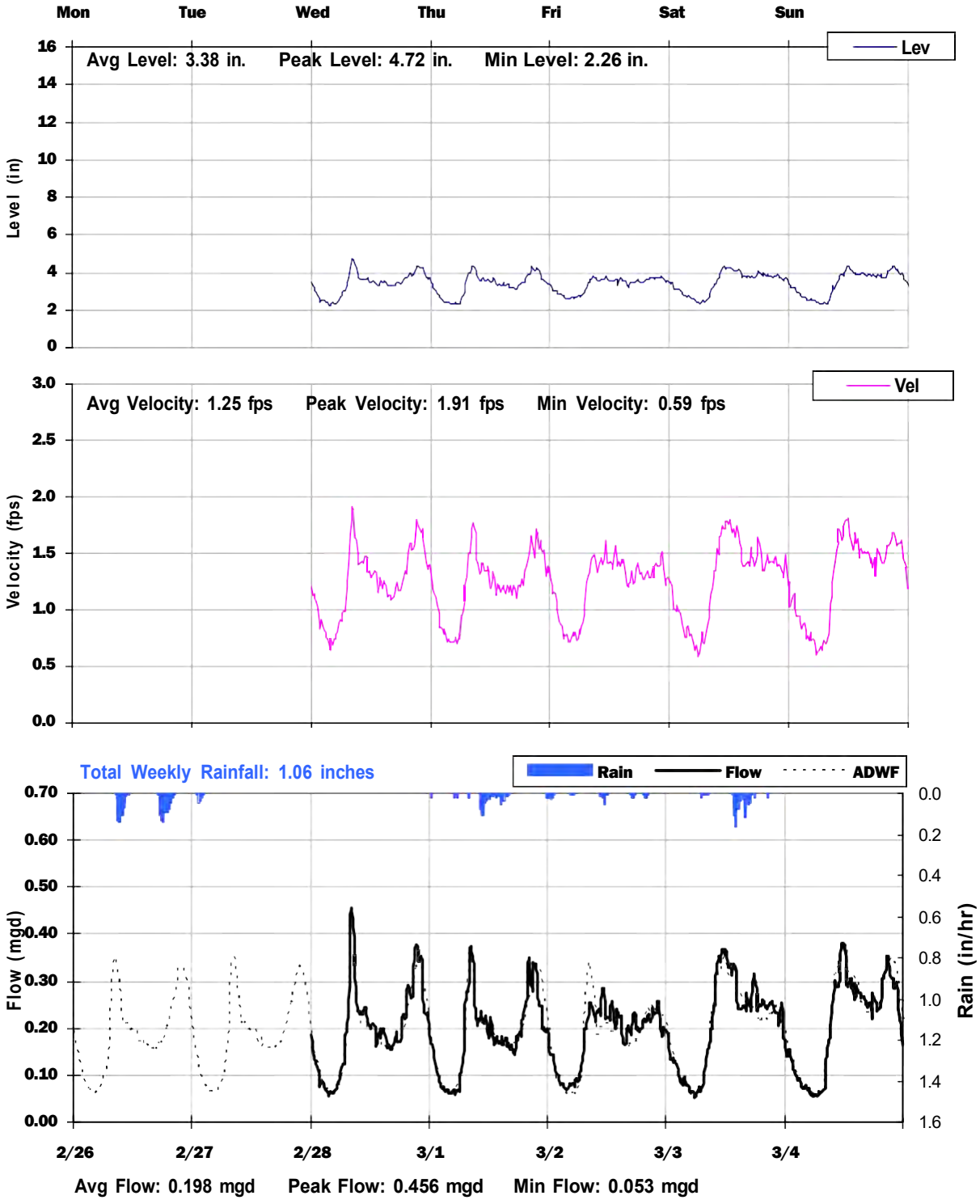


Pipe Diameter:	**18**	***inches***
Peak Measured Level:	**4.72**	***inches***
Peak d/D Ratio:	**0.26**	

TC-13

Weekly Level, Velocity and Flow Hydrographs

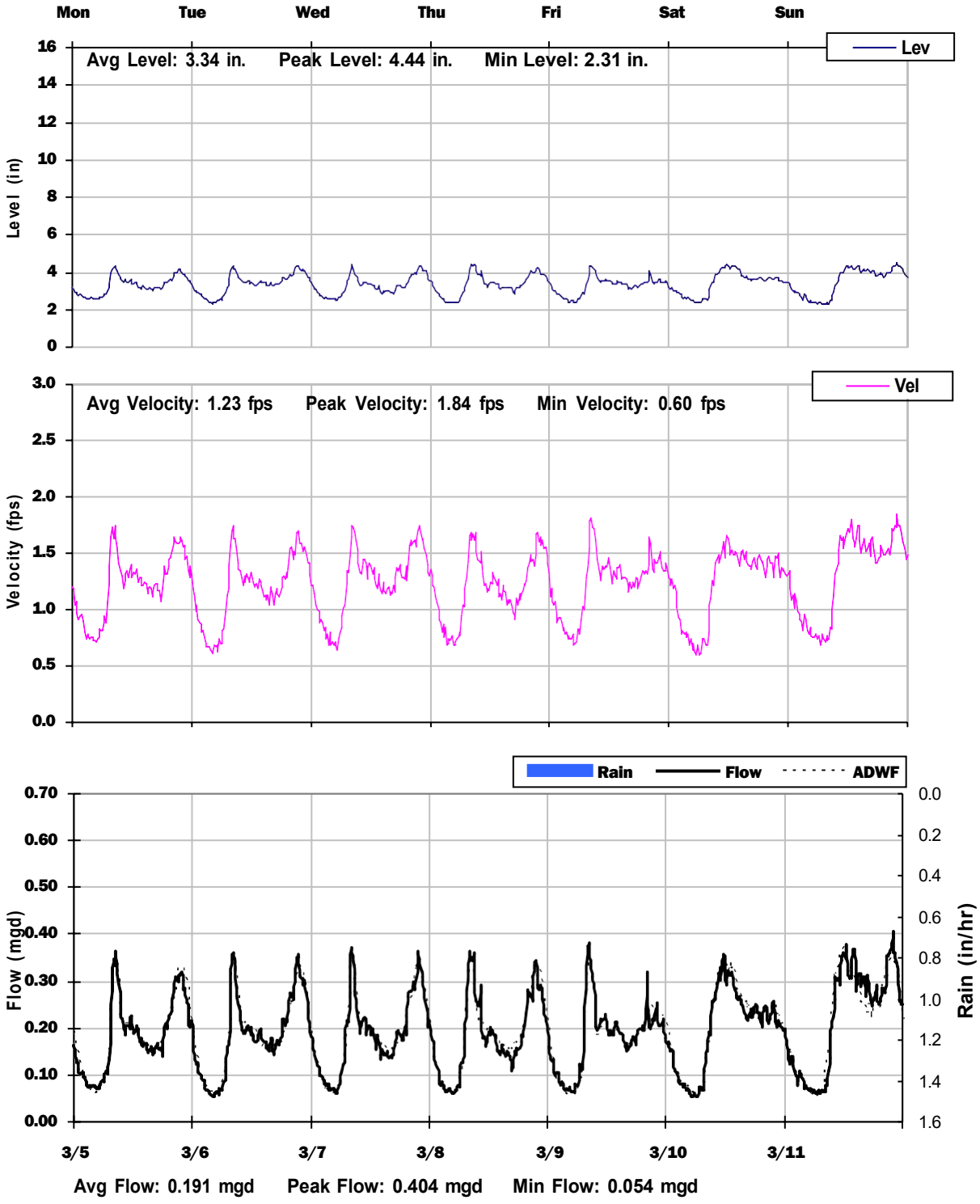
2/26/2018 to 3/5/2018



TC-13

Weekly Level, Velocity and Flow Hydrographs

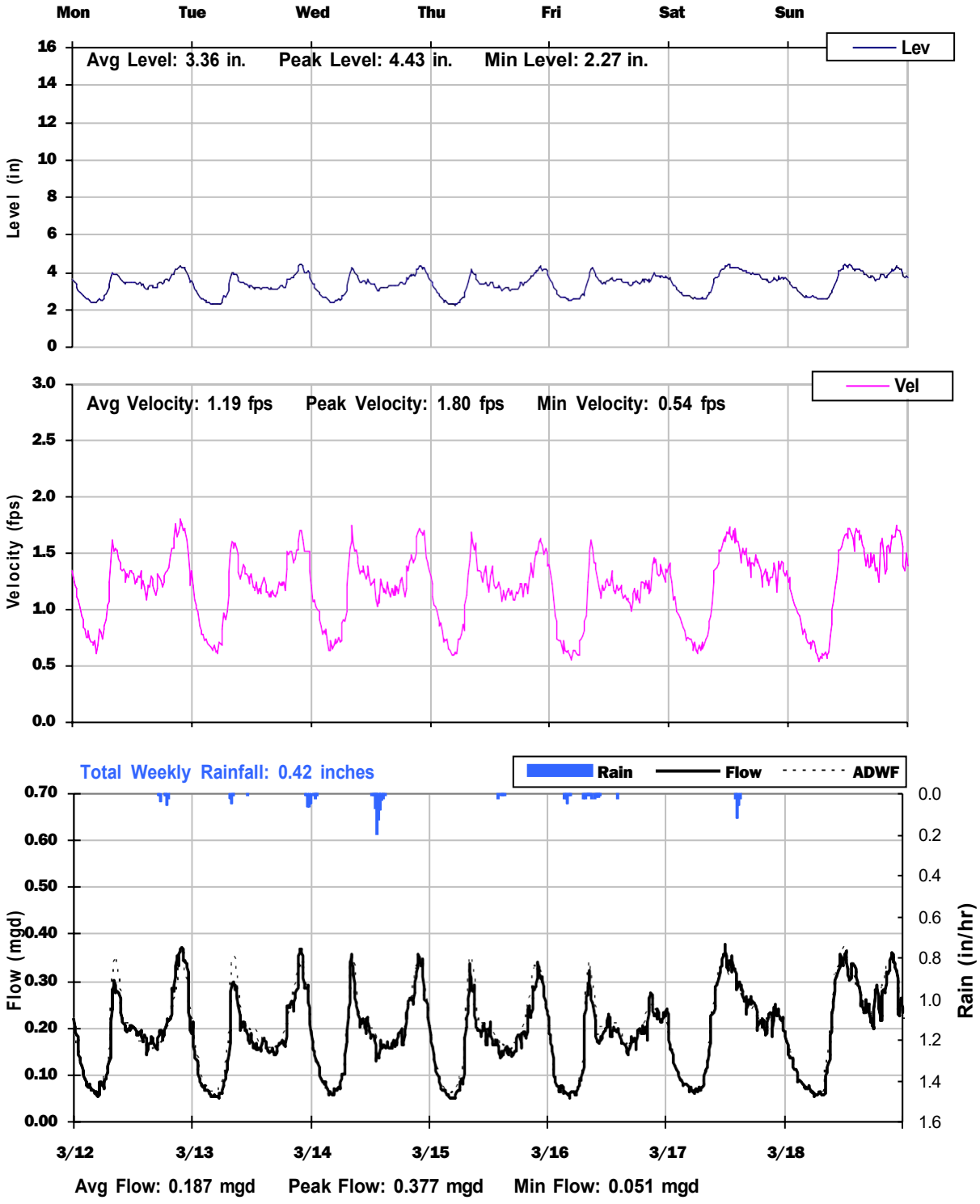
3/5/2018 to 3/12/2018



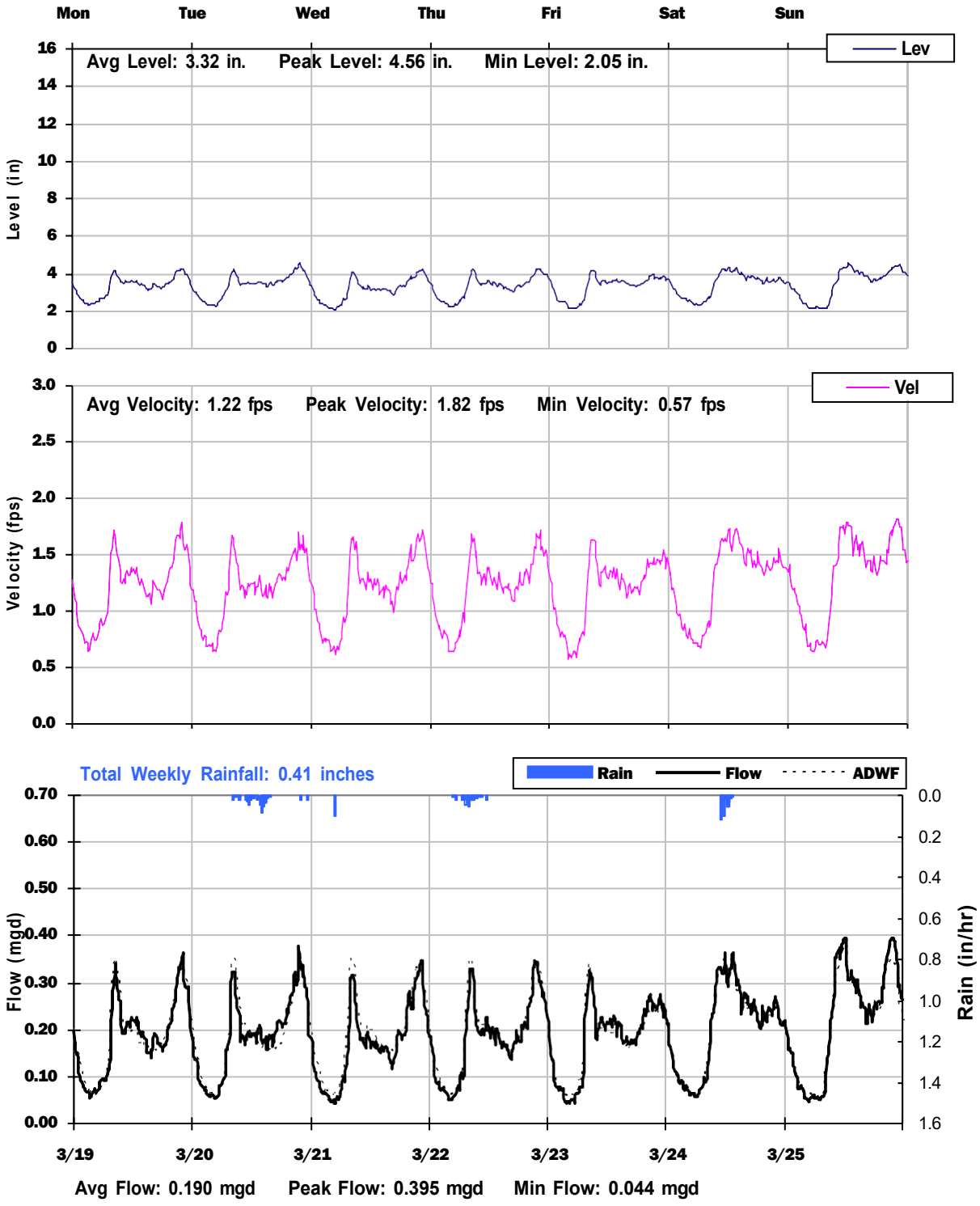
TC-13

Weekly Level, Velocity and Flow Hydrographs

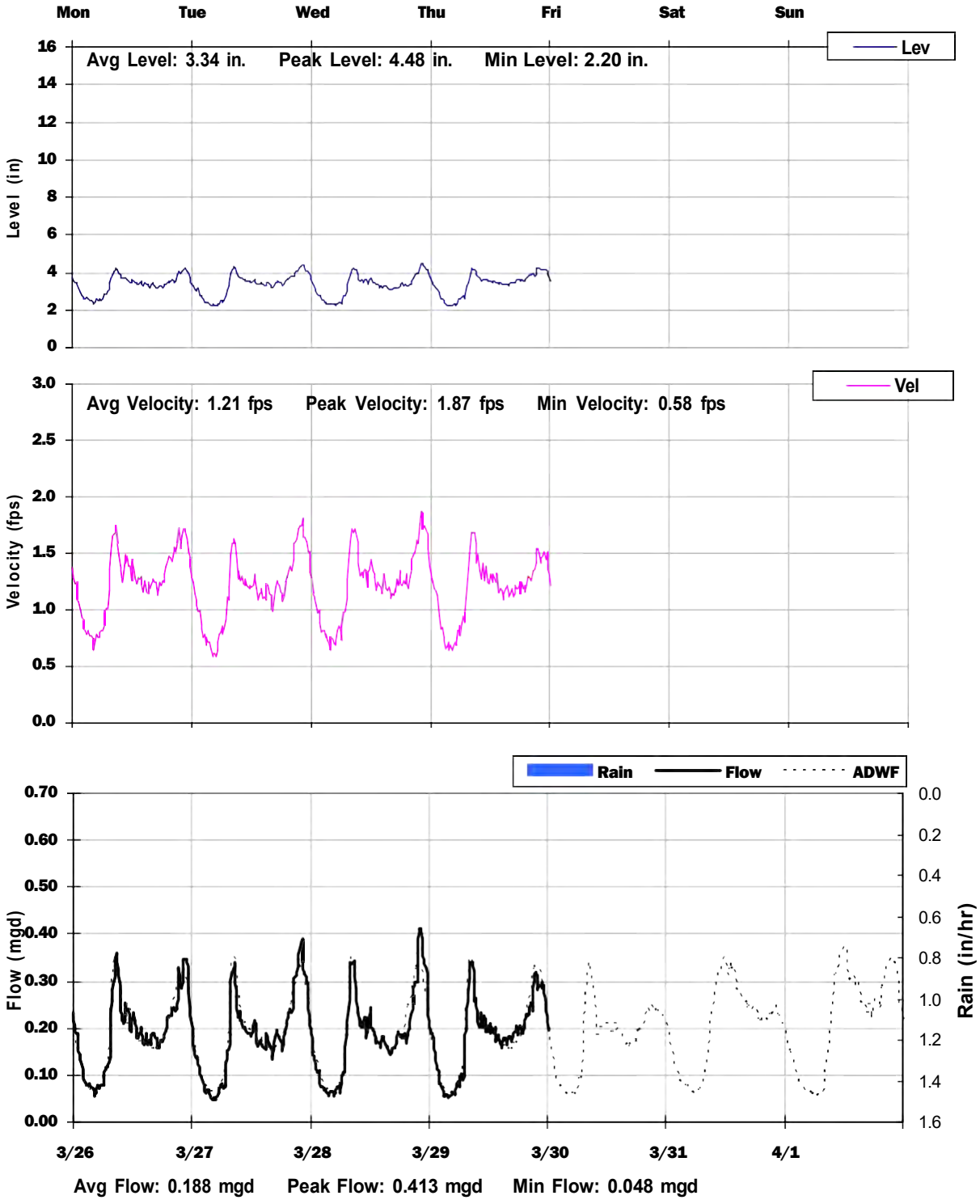
3/12/2018 to 3/19/2018



TC-13
Weekly Level, Velocity and Flow Hydrographs
3/19/2018 to 3/26/2018



TC-13
Weekly Level, Velocity and Flow Hydrographs
3/26/2018 to 4/2/2018



City of Tracy, California

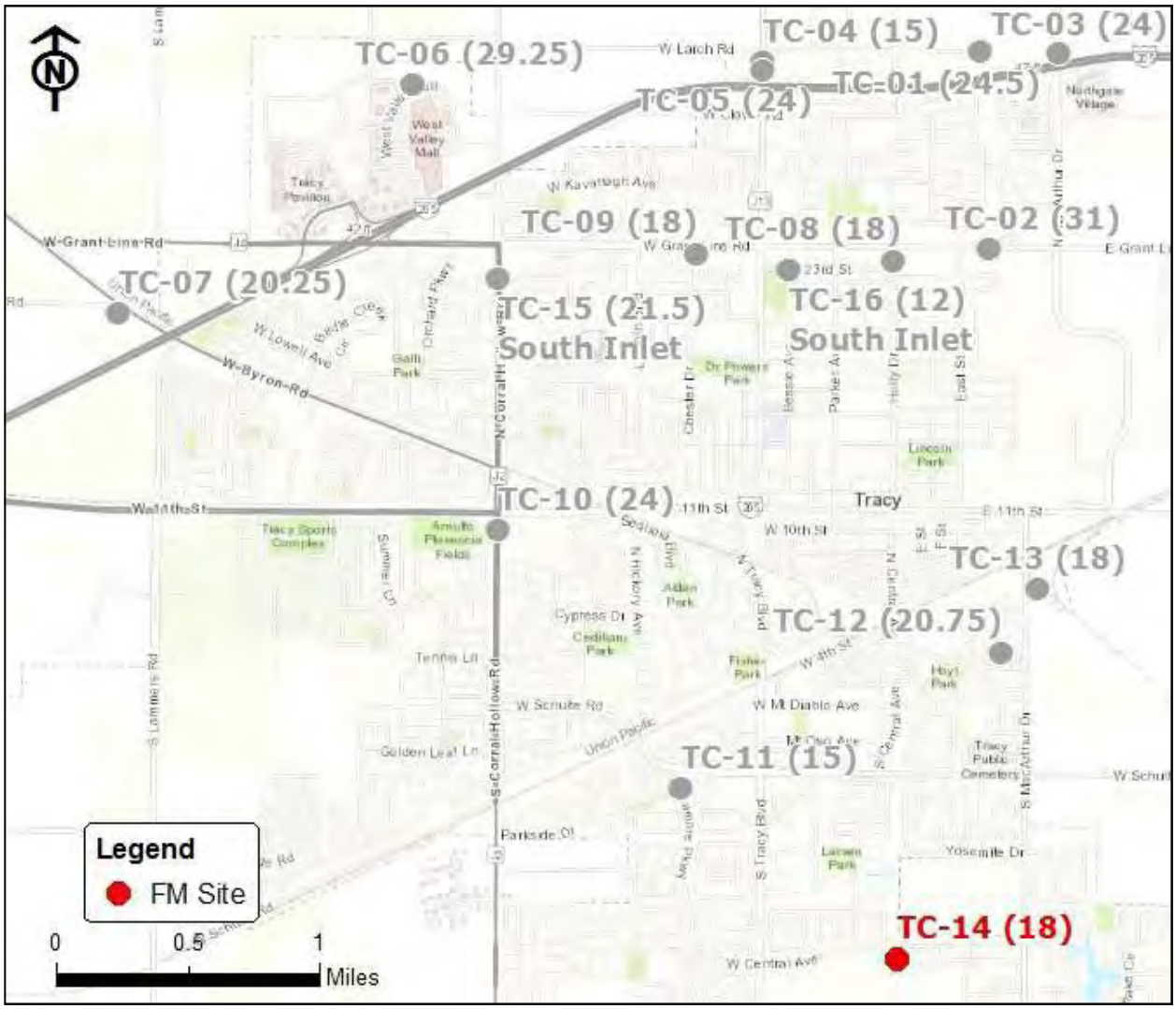
Sanitary Sewer Flow Monitoring

February 26 - April 08, 2020

Monitoring Site: **TC-14**

Location: **In field behind property line for 121 Cairo Court, east of railroad.**

Data Summary Report



Vicinity Map: TC-14

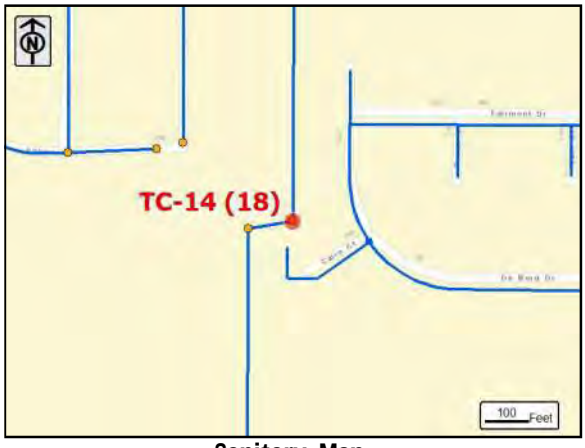
TC-14

Site Information

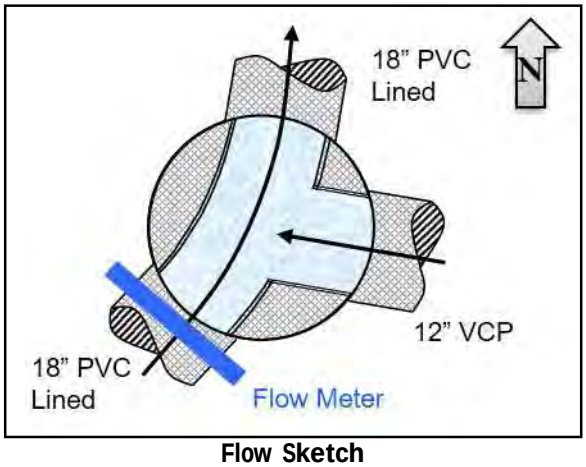
Location:	**In field behind property line for 121 Cairo Court, east of railroad.**
City Manhole:	
Coordinates:	**121.4252° W, 37.7150° N**
Rim Elevation (Earth):	**101 feet**
Pipe Diameter:	**18 inches**
ADWF:	**0.632 mgd**
Peak Measured Flow:	**1.161 mgd**



Satellite Map

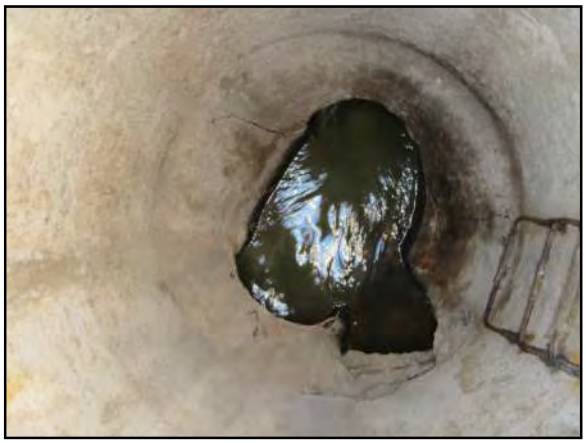


Sanitary Map



Flow Sketch


Street View


Plan View

TC-14

Additional Site Photos

Effluent Pipe



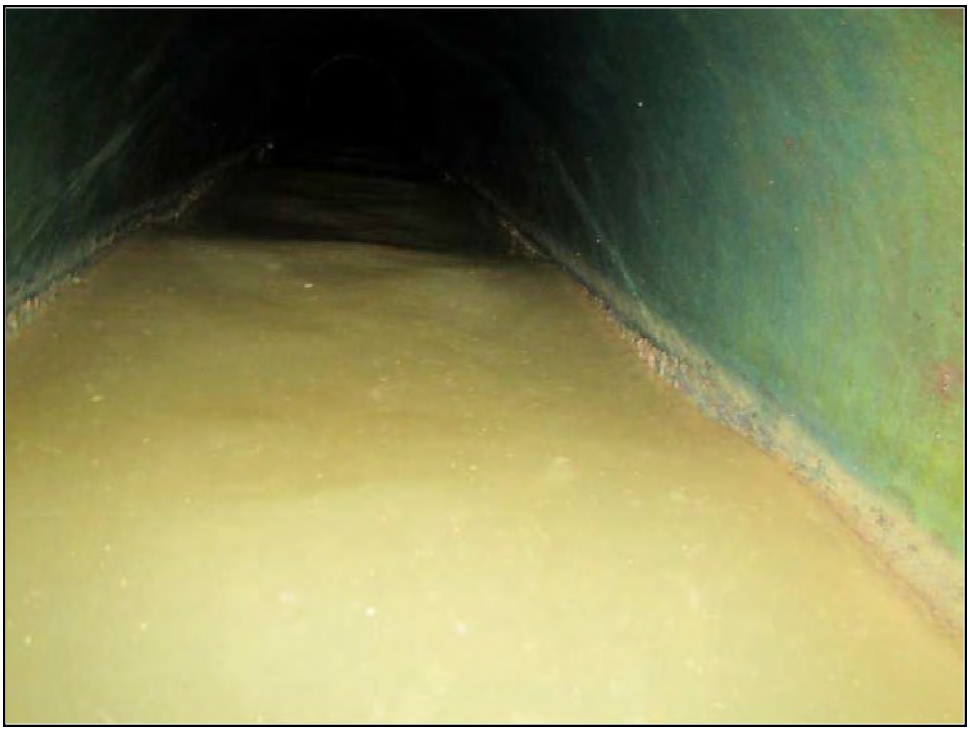
Southeast Influent Pipe



TC-14

Additional Site Photos

South Influent Pipe



Southwest Influent Pipe

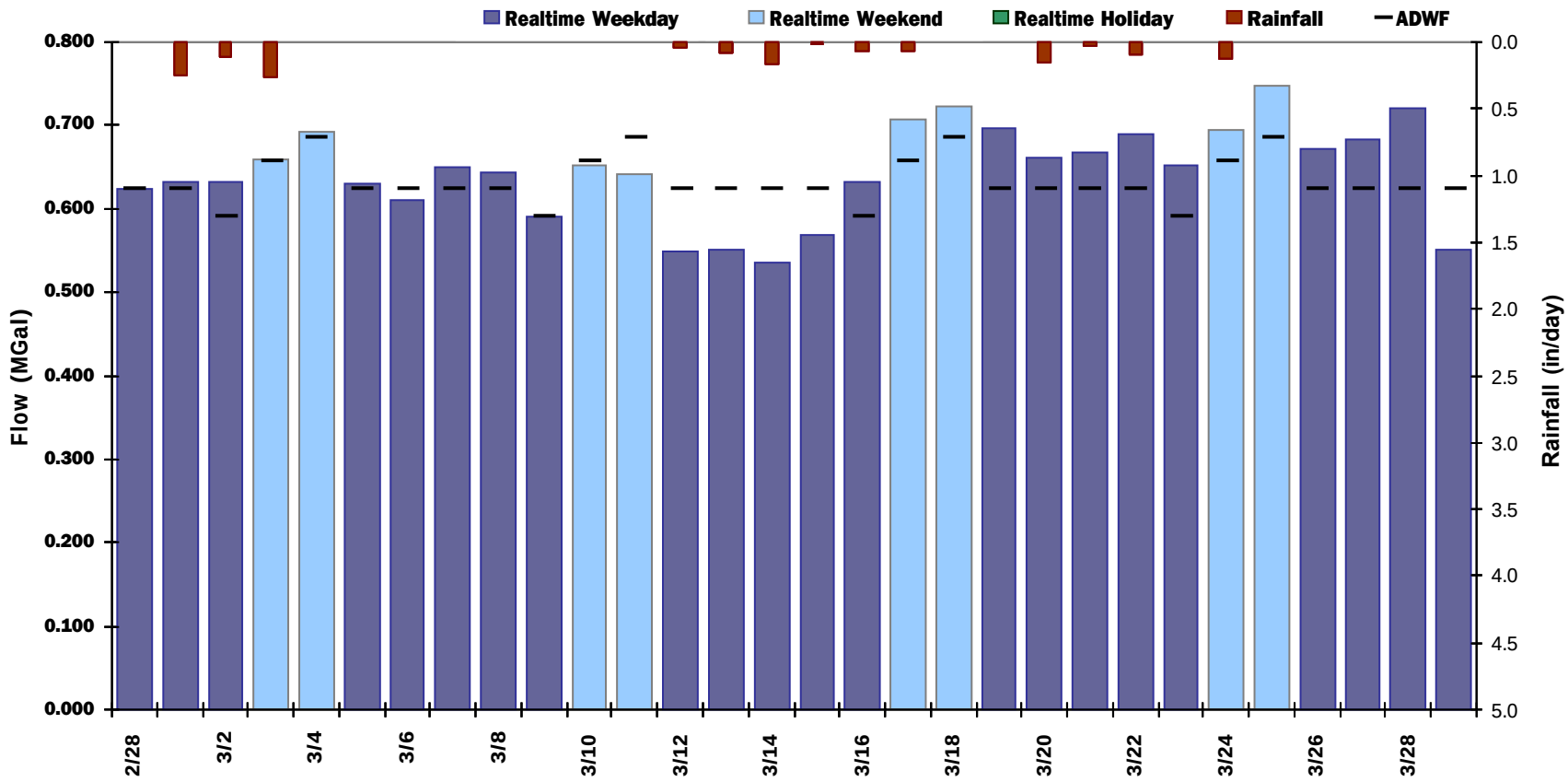


TC-14

Period Flow Summary: Daily Flow Totals

Avg Period Flow: 0.646 MGal **Peak Daily Flow: 0.747 MGal** **Min Daily Flow: 0.537 MGal**

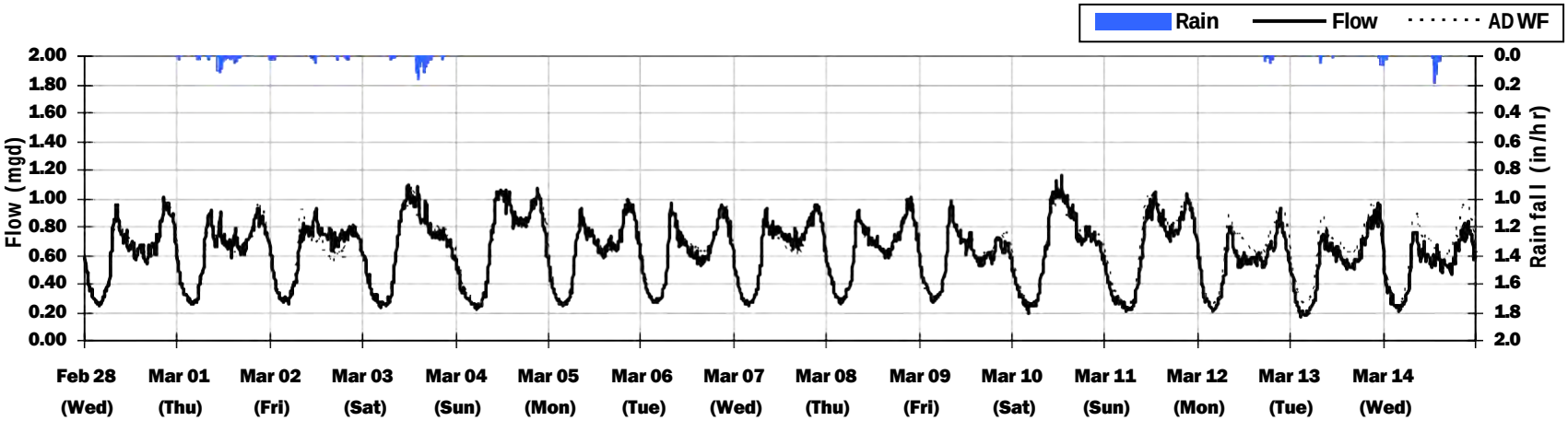
Total Period Rainfall: 1.43 inches

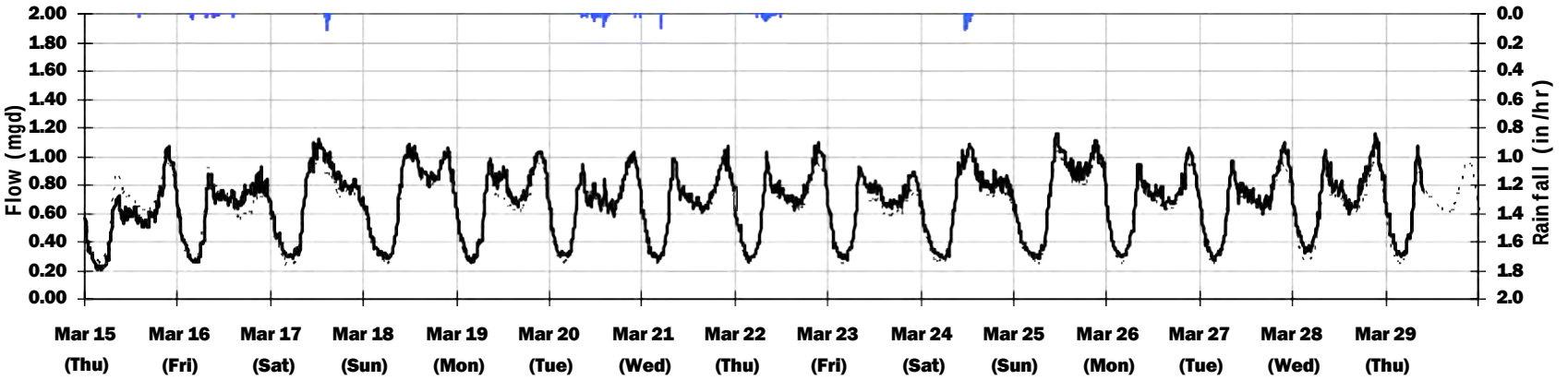


TC-14

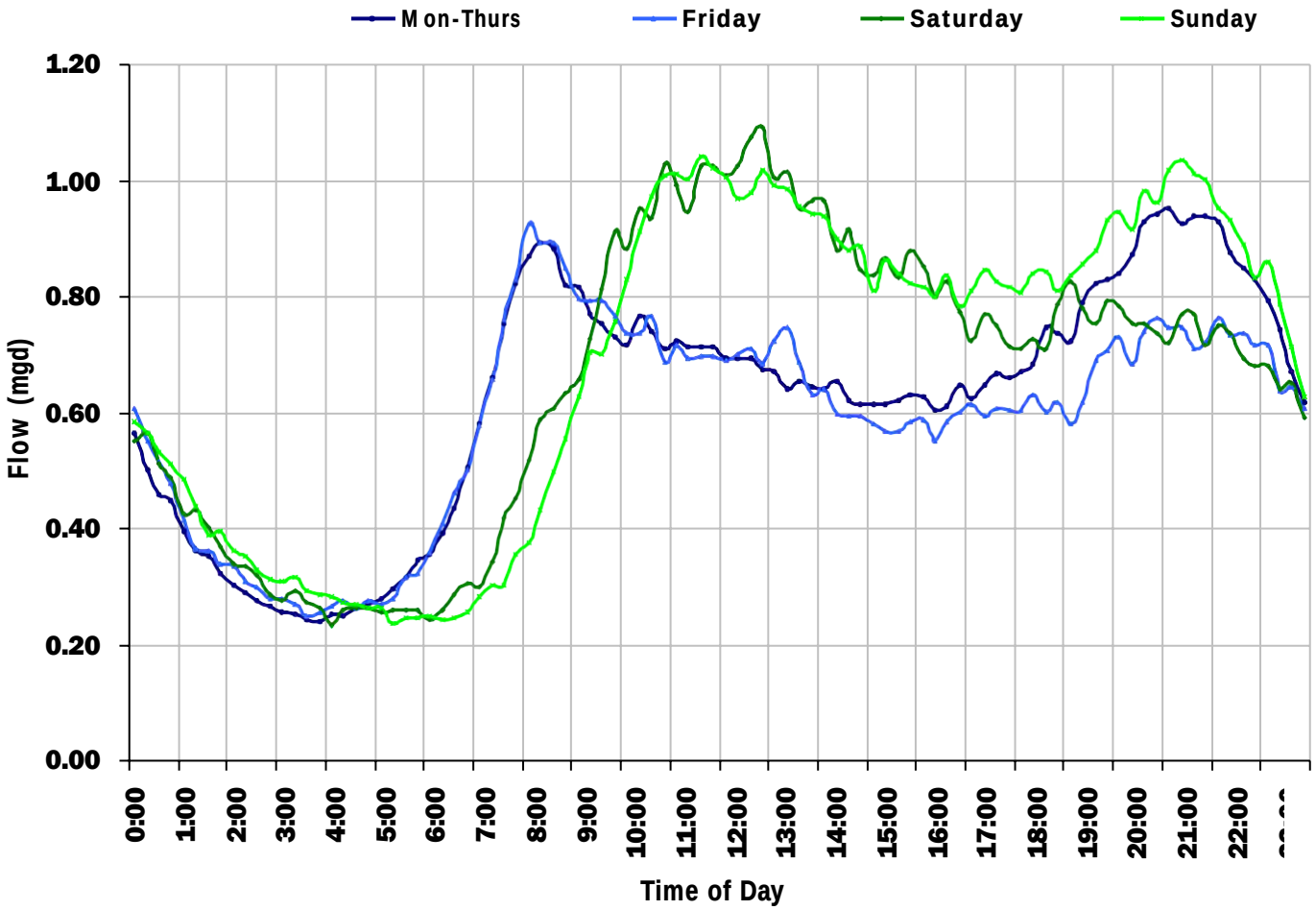
Flow Summary: 2/28/2018 to 3/29/2018

Total Period Rainfall: 1.43 inches Avg Flow: 0.647 mgd Peak Flow: 1.161 mgd Min Flow: 0.164 mgd



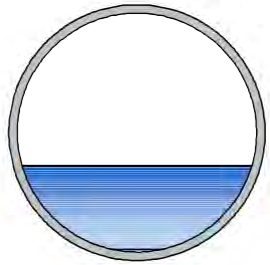


TC-14
Average Dry Weather Flow Hydrographs



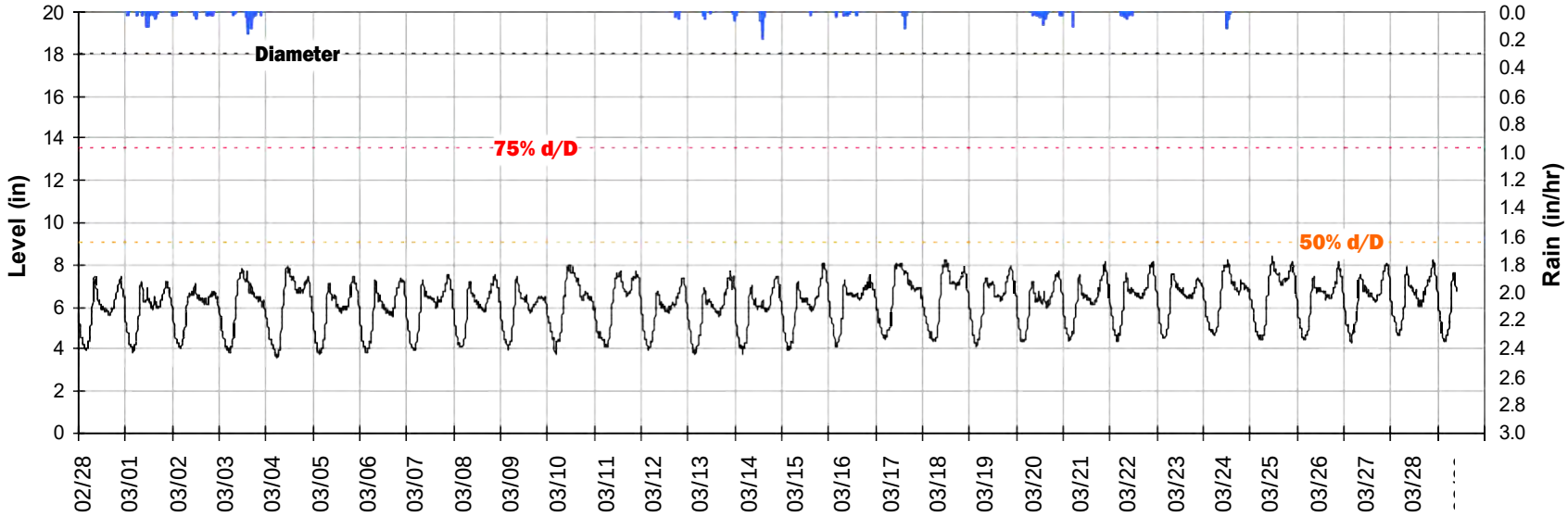
ADWF:

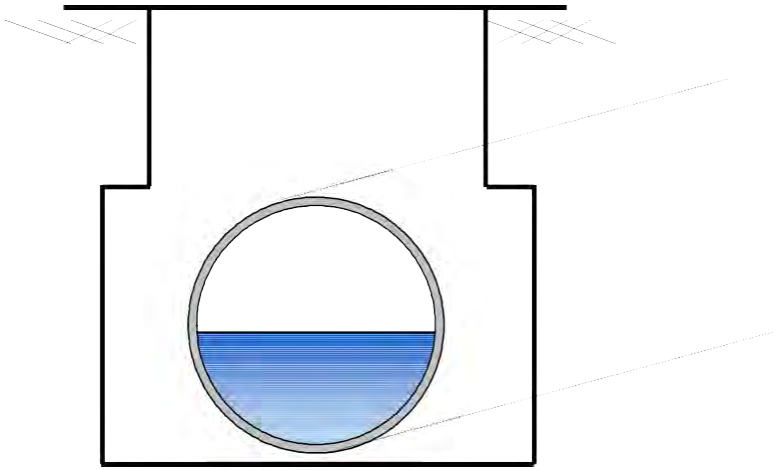
0.632 *mgd*



TC-14
Site Capacity and Surcharge Summary

Realtime Flow Levels with Rainfall Data over Monitoring Period



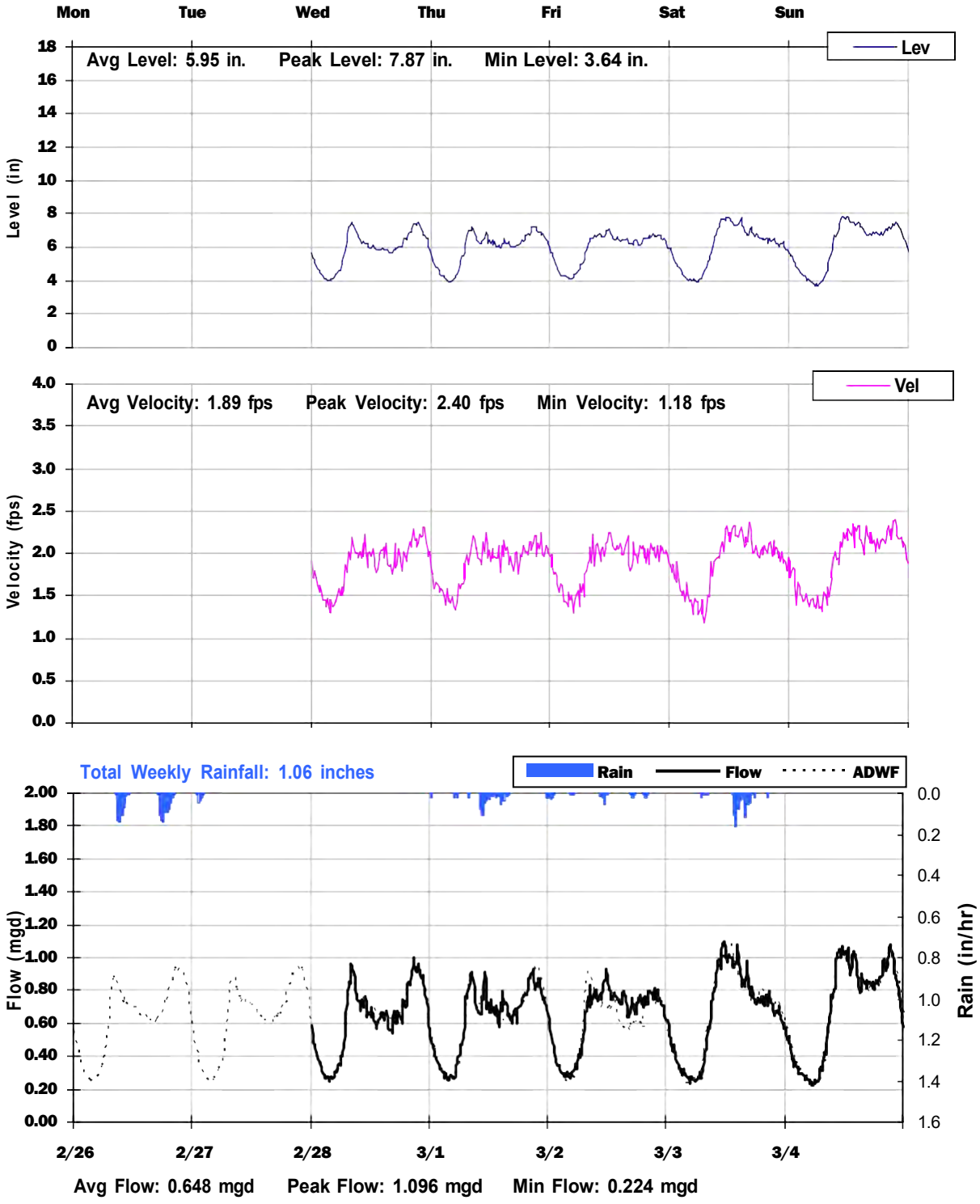


Pipe Diameter:	**18**	***inches***
Peak Measured Level:	**8.41**	***inches***
Peak d/D Ratio:	**0.47**	

TC-14

Weekly Level, Velocity and Flow Hydrographs

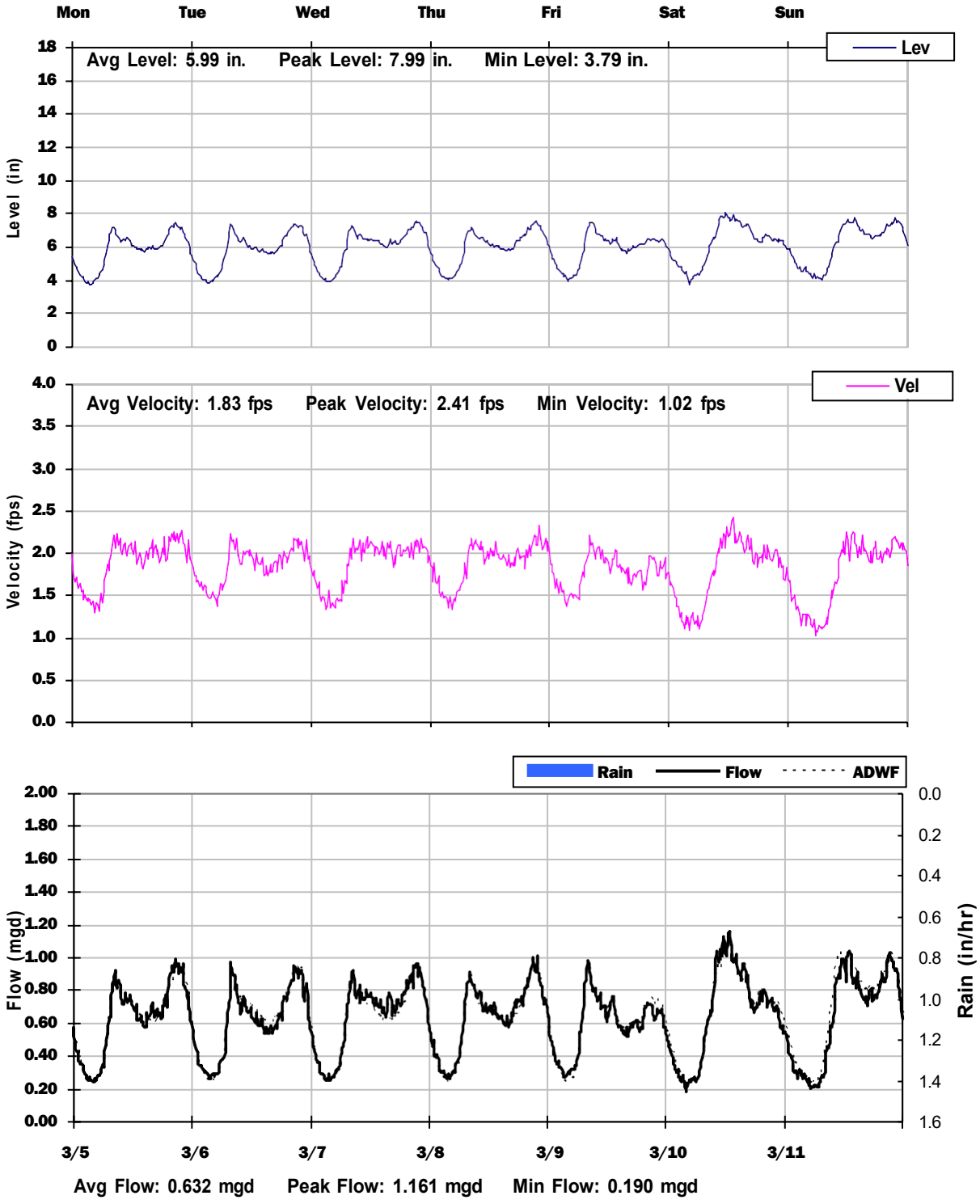
2/26/2018 to 3/5/2018



TC-14

Weekly Level, Velocity and Flow Hydrographs

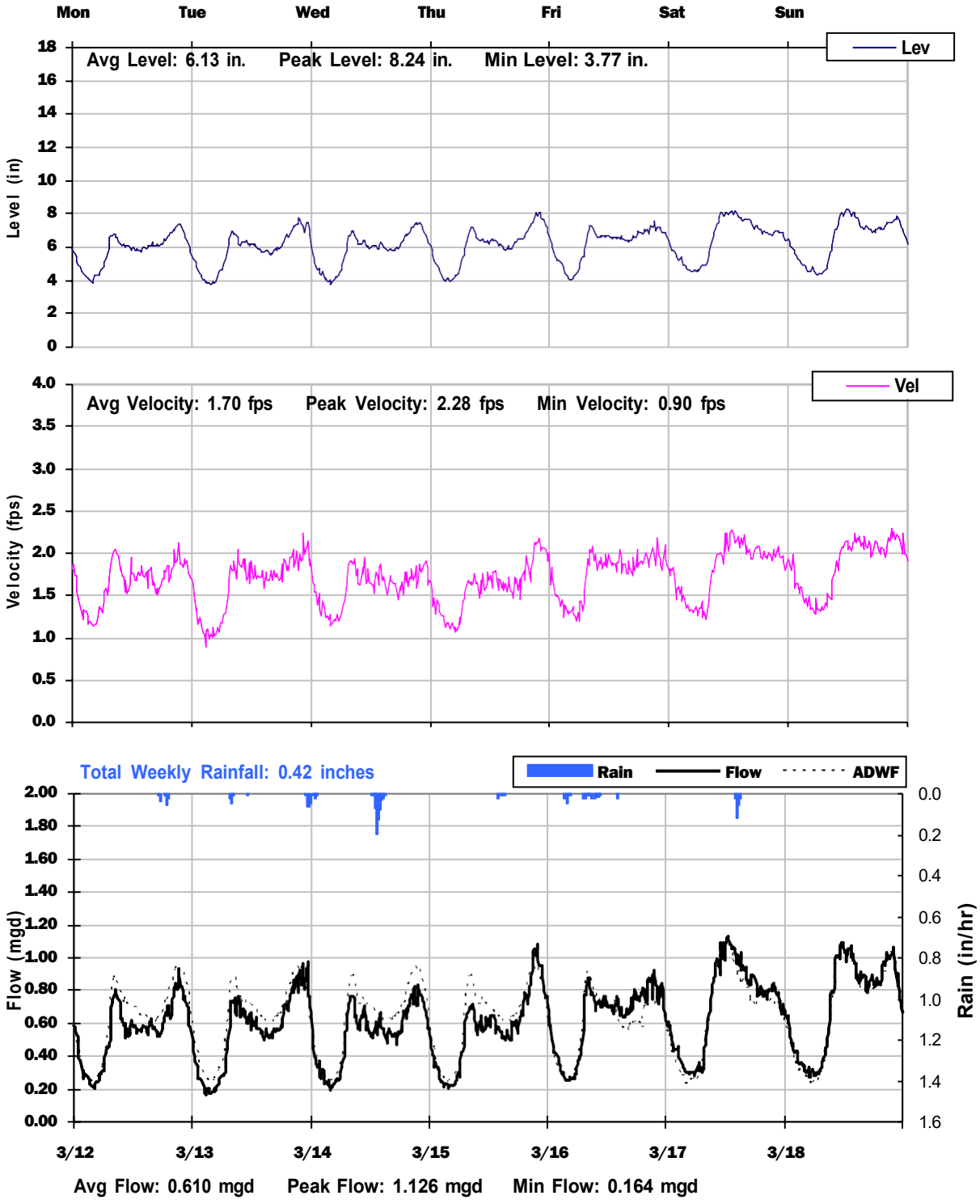
3/5/2018 to 3/12/2018



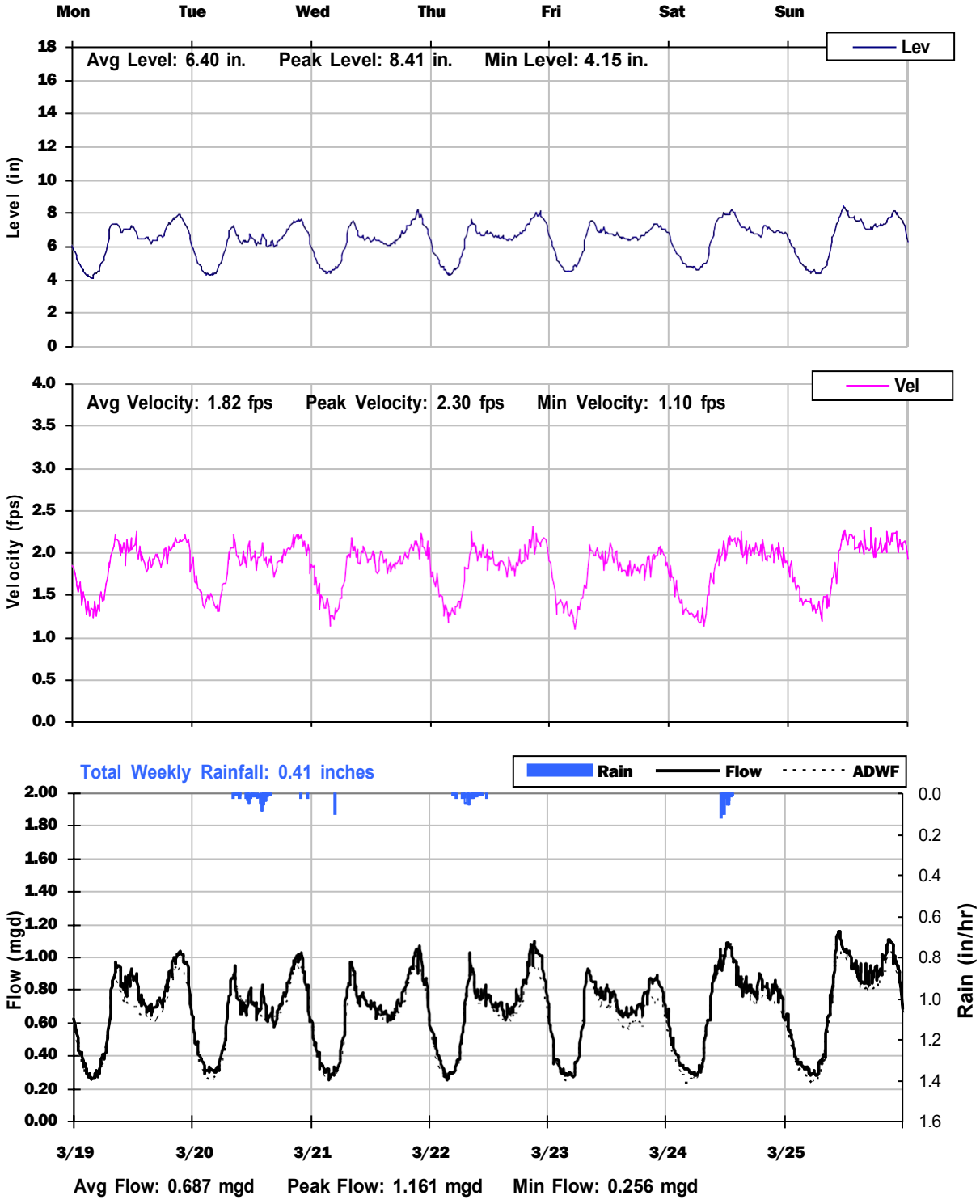
TC-14

Weekly Level, Velocity and Flow Hydrographs

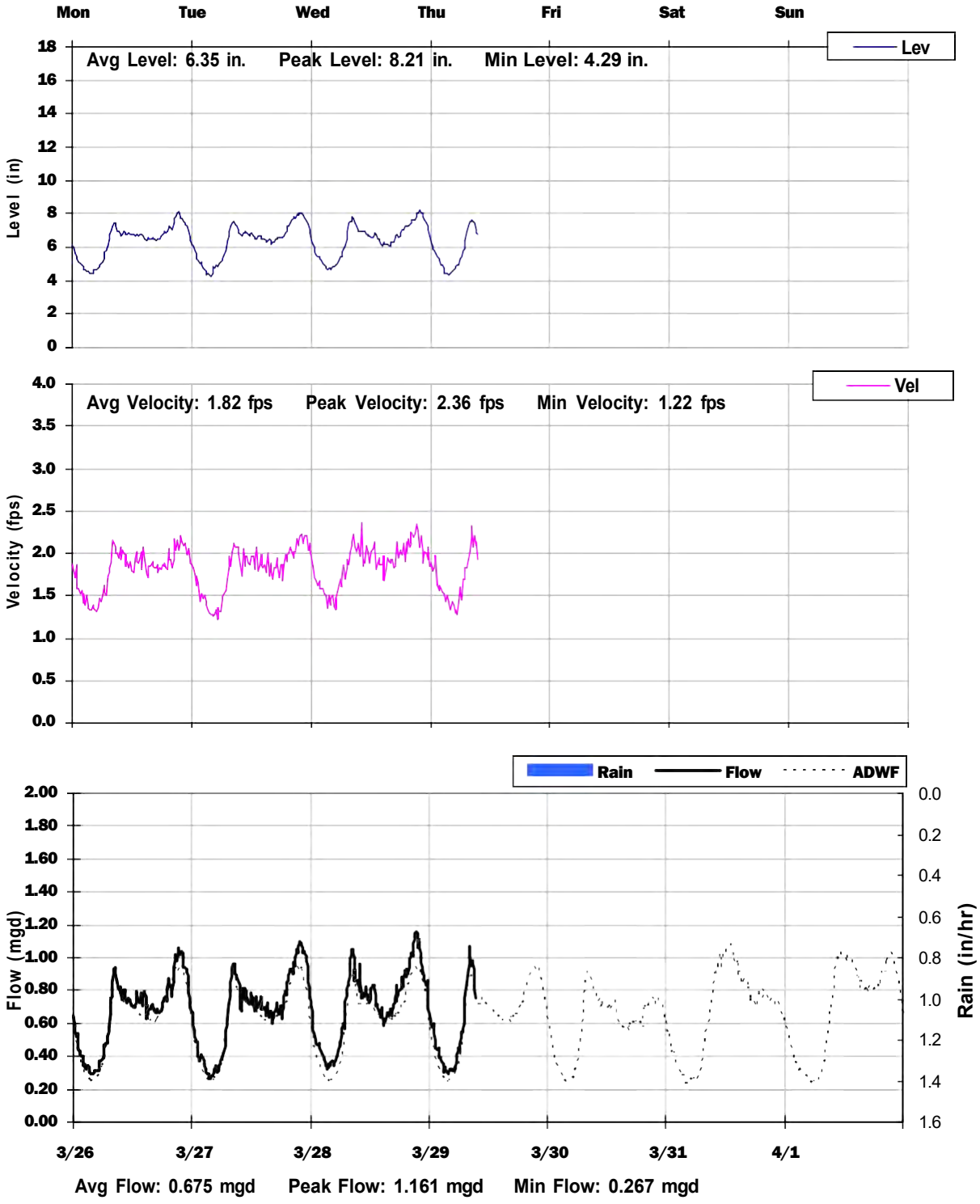
3/12/2018 to 3/19/2018



TC-14
Weekly Level, Velocity and Flow Hydrographs
3/19/2018 to 3/26/2018



TC-14
Weekly Level, Velocity and Flow Hydrographs
3/26/2018 to 4/2/2018



TC-14

City of Tracy, California

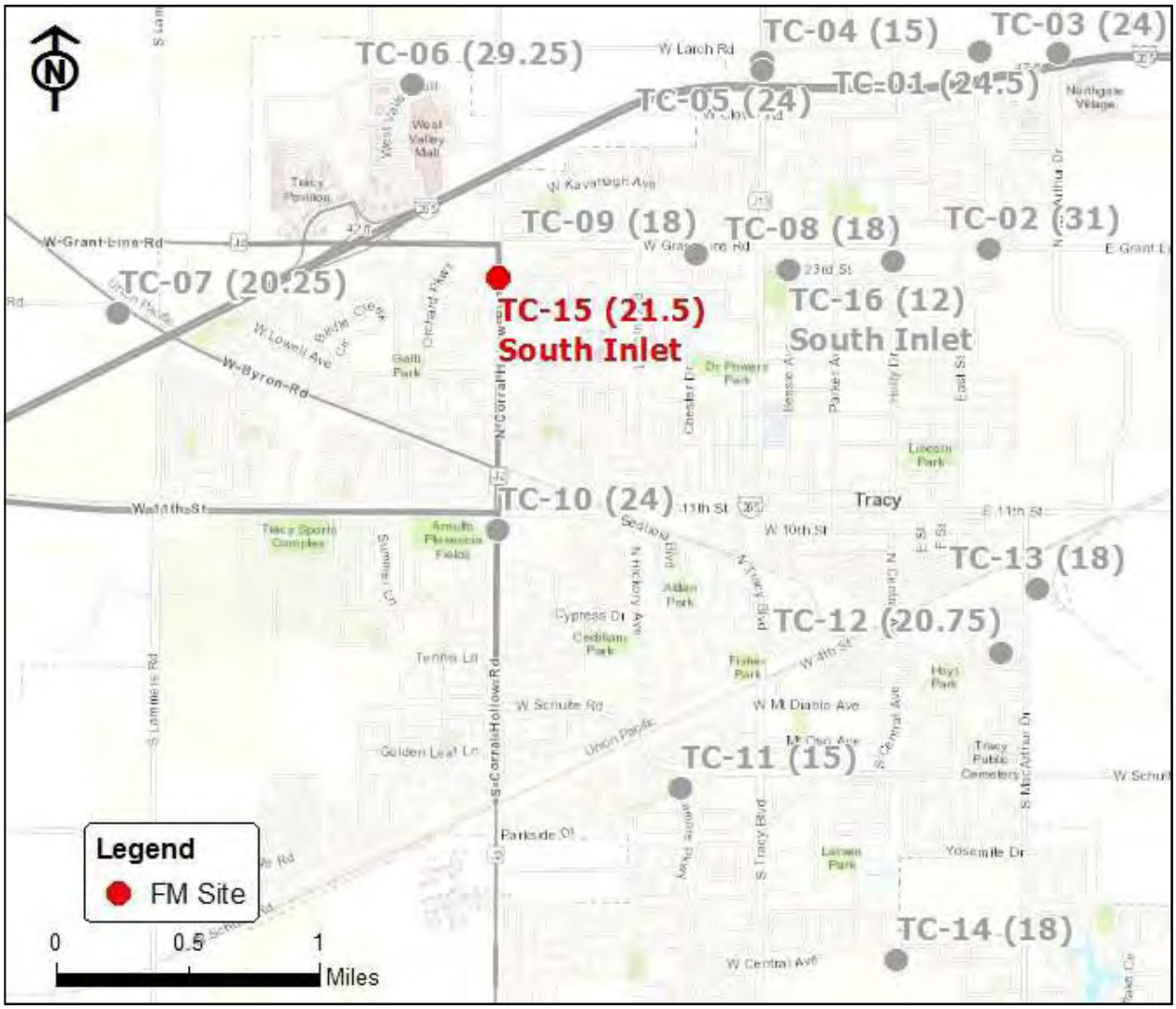
Sanitary Sewer Flow Monitoring

February 26 - April 08, 2020

Monitoring Site: **TC-15**

Location: **Intersection of Corral Hollow Road and Alegre Drive**

Data Summary Report



Vicinity Map: TC-15

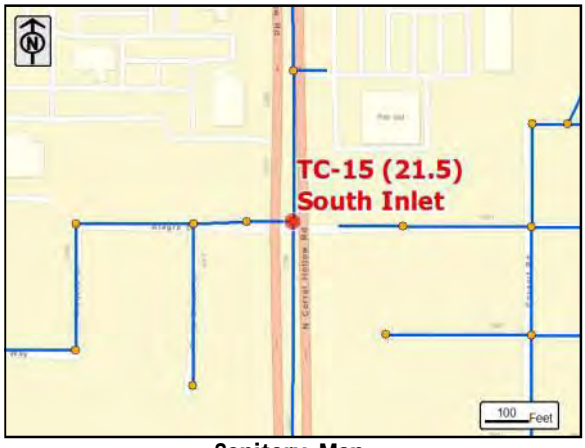
TC-15

Site Information

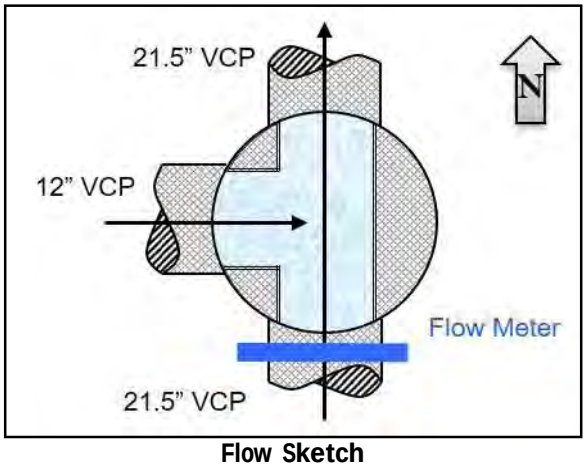
Location:	**Intersection of Corral Hollow Road and Alegre Drive**
City Manhole:	
Coordinates:	**121.4532° W, 37.7523° N**
Rim Elevation (Earth):	**27 feet**
Pipe Diameter:	**21.5 inches**
ADWF:	**1.553 mgd**
Peak Measured Flow:	**2.702 mgd**



Satellite Map



Sanitary Map



Flow Sketch



Street View



Plan View

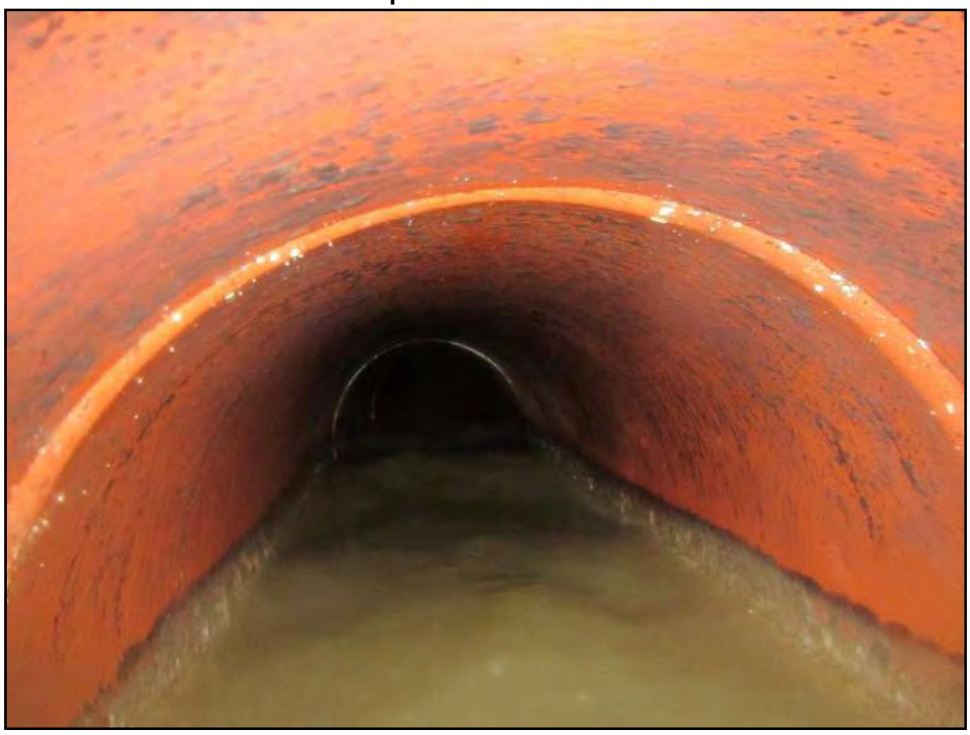
TC-15

Additional Site Photos

Effluent Pipe



Monitored South Influent Pipe



TC-15

Additional Site Photos

West Lateral

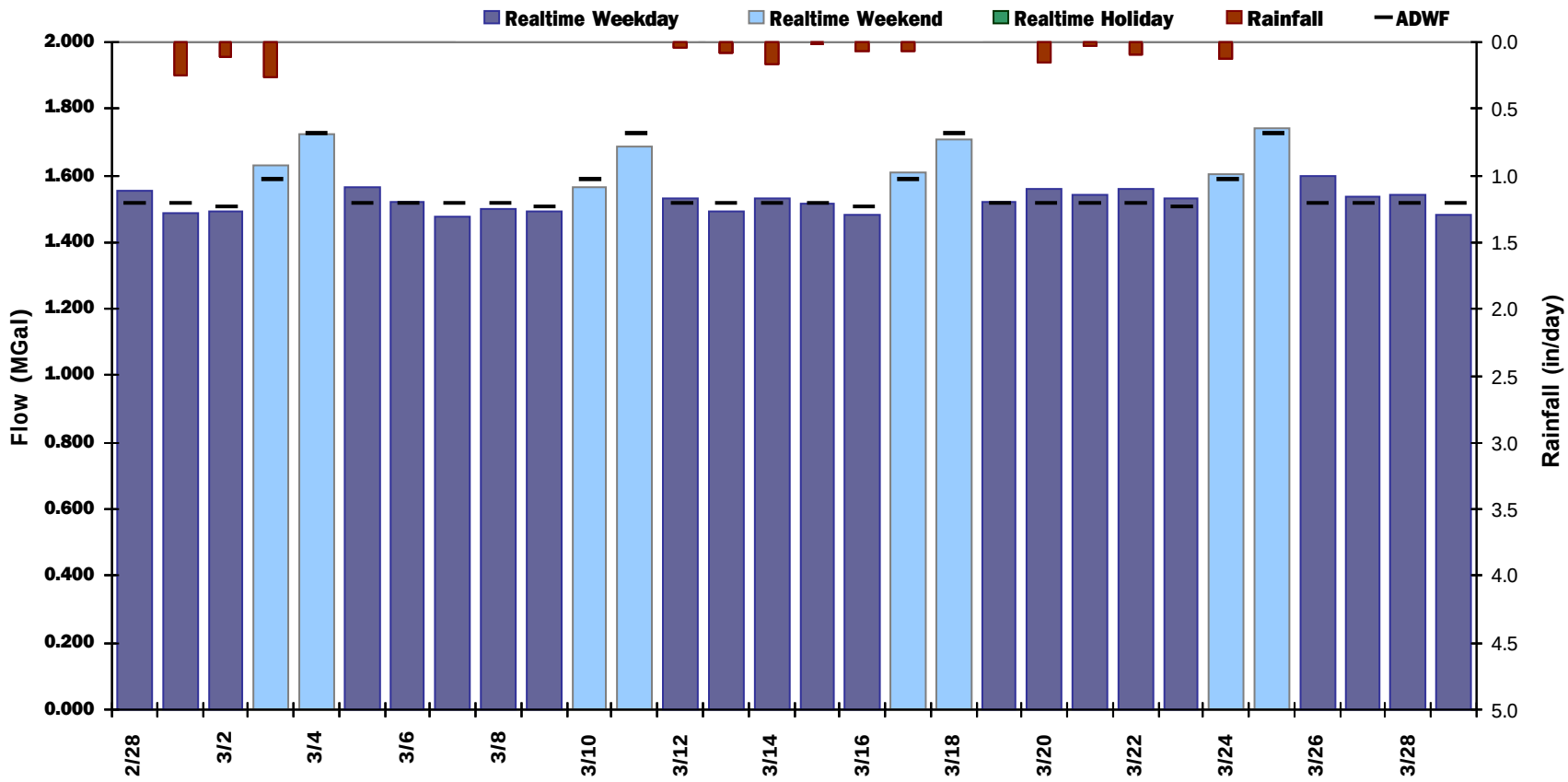


TC-15

Period Flow Summary: Daily Flow Totals

Avg Period Flow: 1.559 MGal **Peak Daily Flow: 1.740 MGal** **Min Daily Flow: 1.475 MGal**

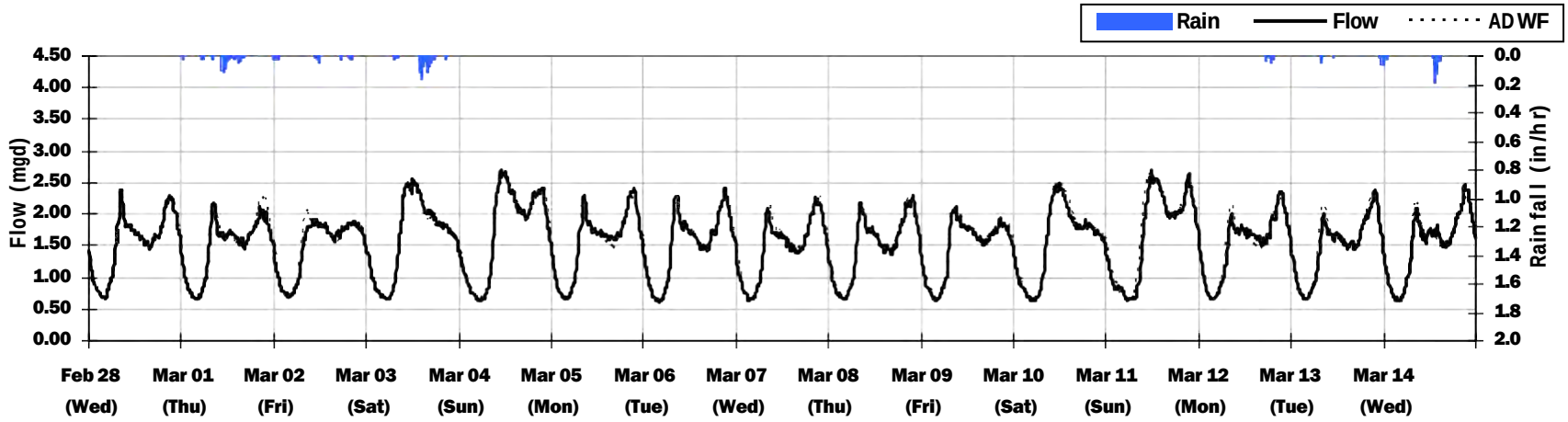
Total Period Rainfall: 1.43 inches

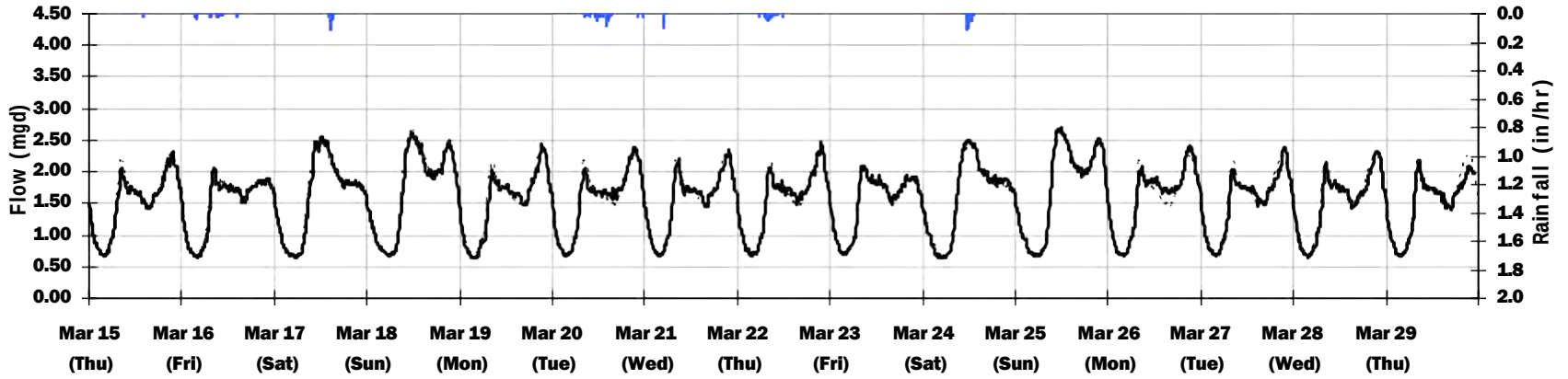


TC-15

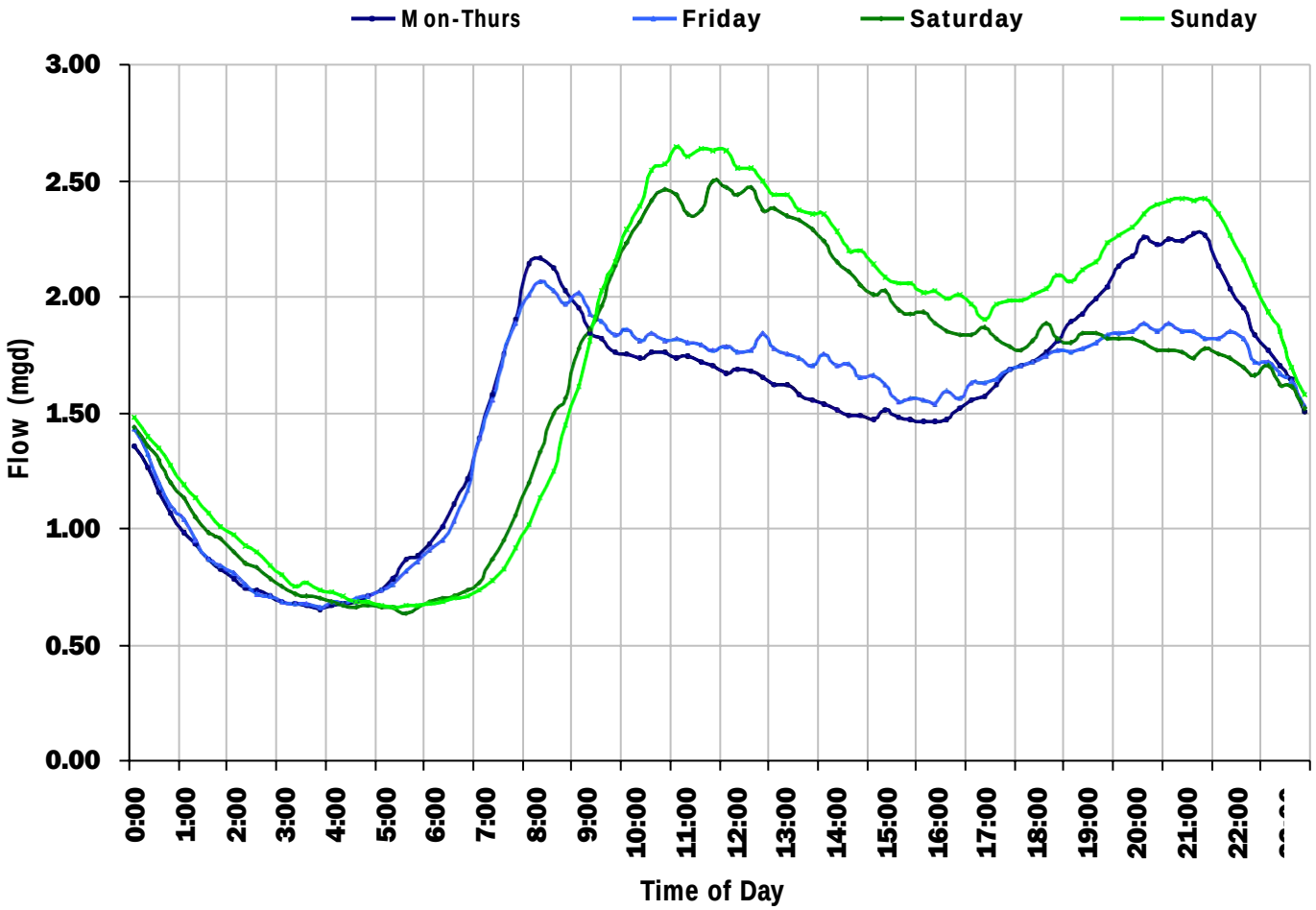
Flow Summary: 2/28/2018 to 3/29/2018

Total Period Rainfall: 1.43 inches Avg Flow: 1.559 mgd Peak Flow: 2.702 mgd Min Flow: 0.602 mgd



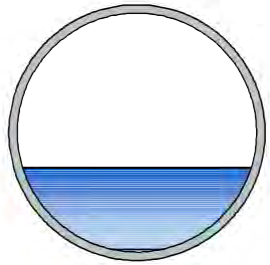


TC-15
Average Dry Weather Flow Hydrographs



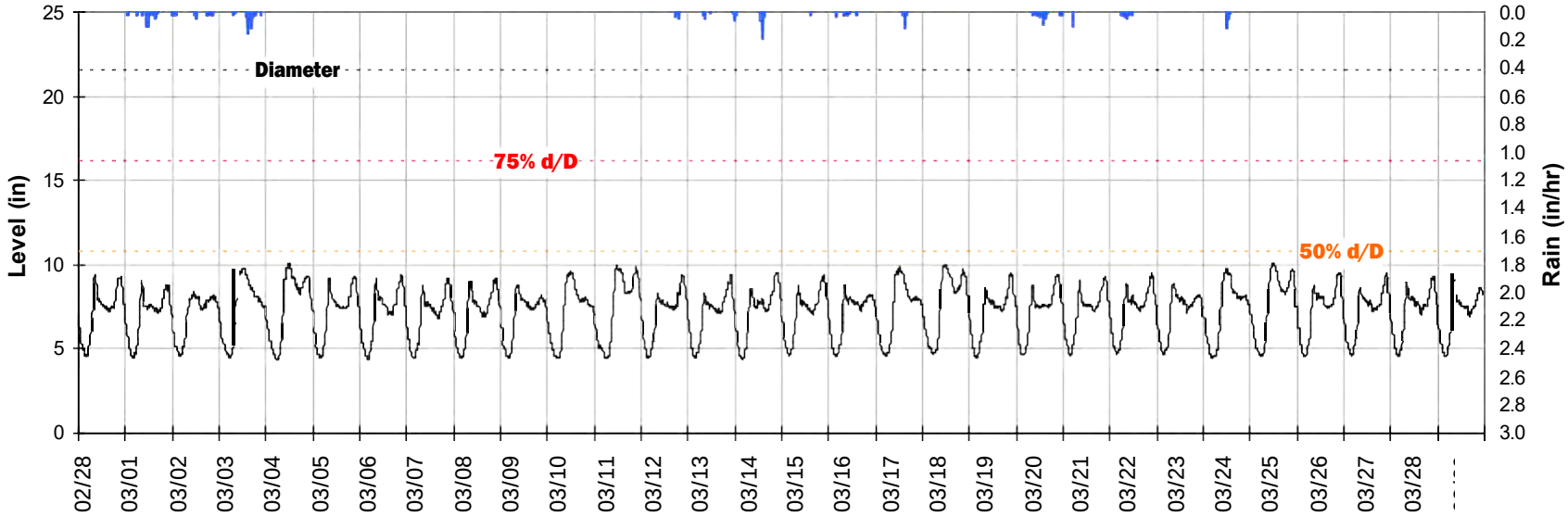
ADWF:

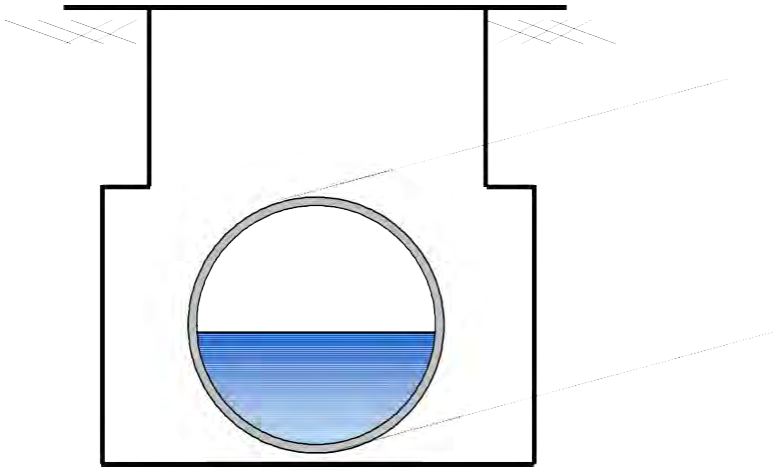
1.553 *mgd*



TC-15
Site Capacity and Surcharge Summary

Realtime Flow Levels with Rainfall Data over Monitoring Period



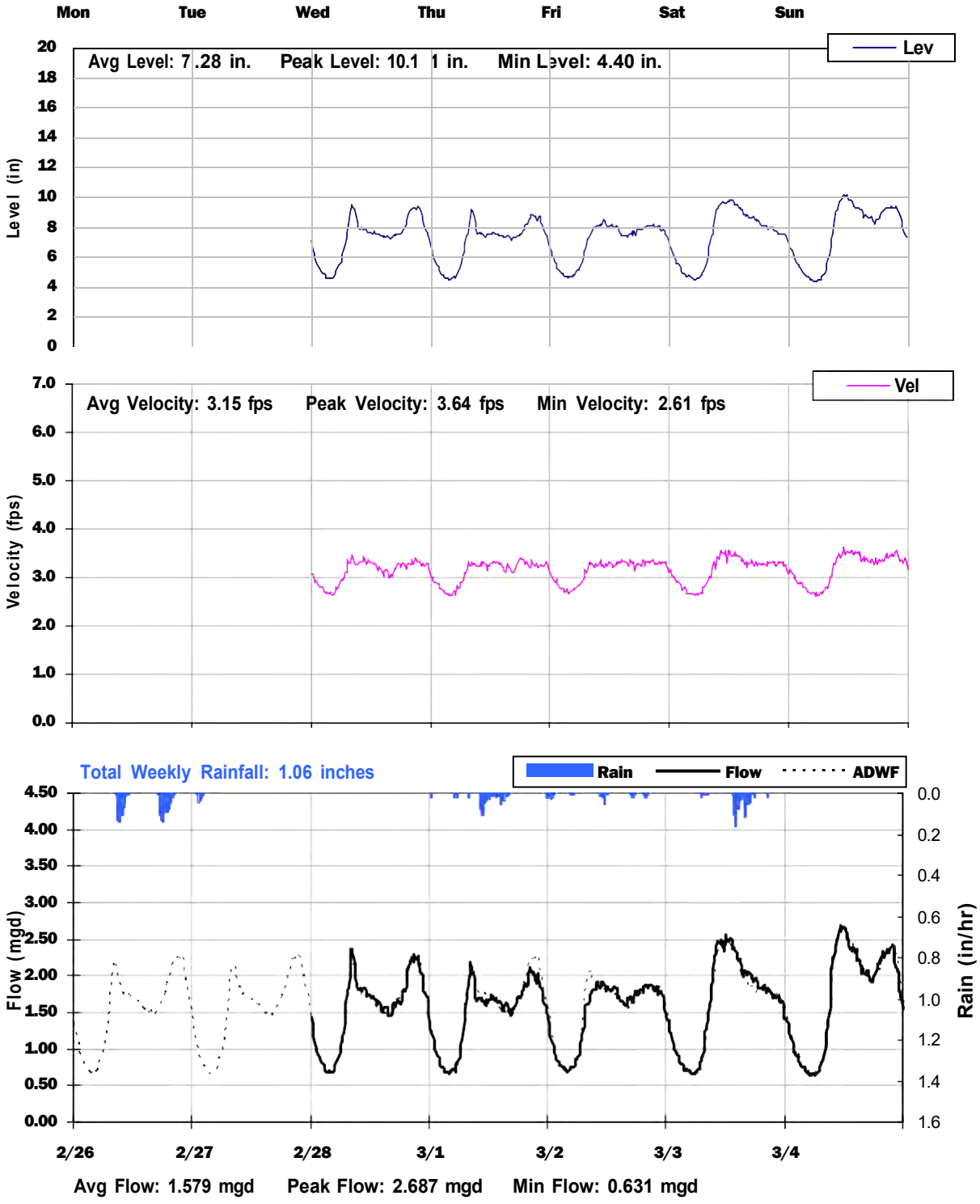


Pipe Diameter:	**21.5**	***inches***
Peak Measured Level:	**10.1**	***inches***
Peak d/D Ratio:	**0.47**	

TC-15

Weekly Level, Velocity and Flow Hydrographs

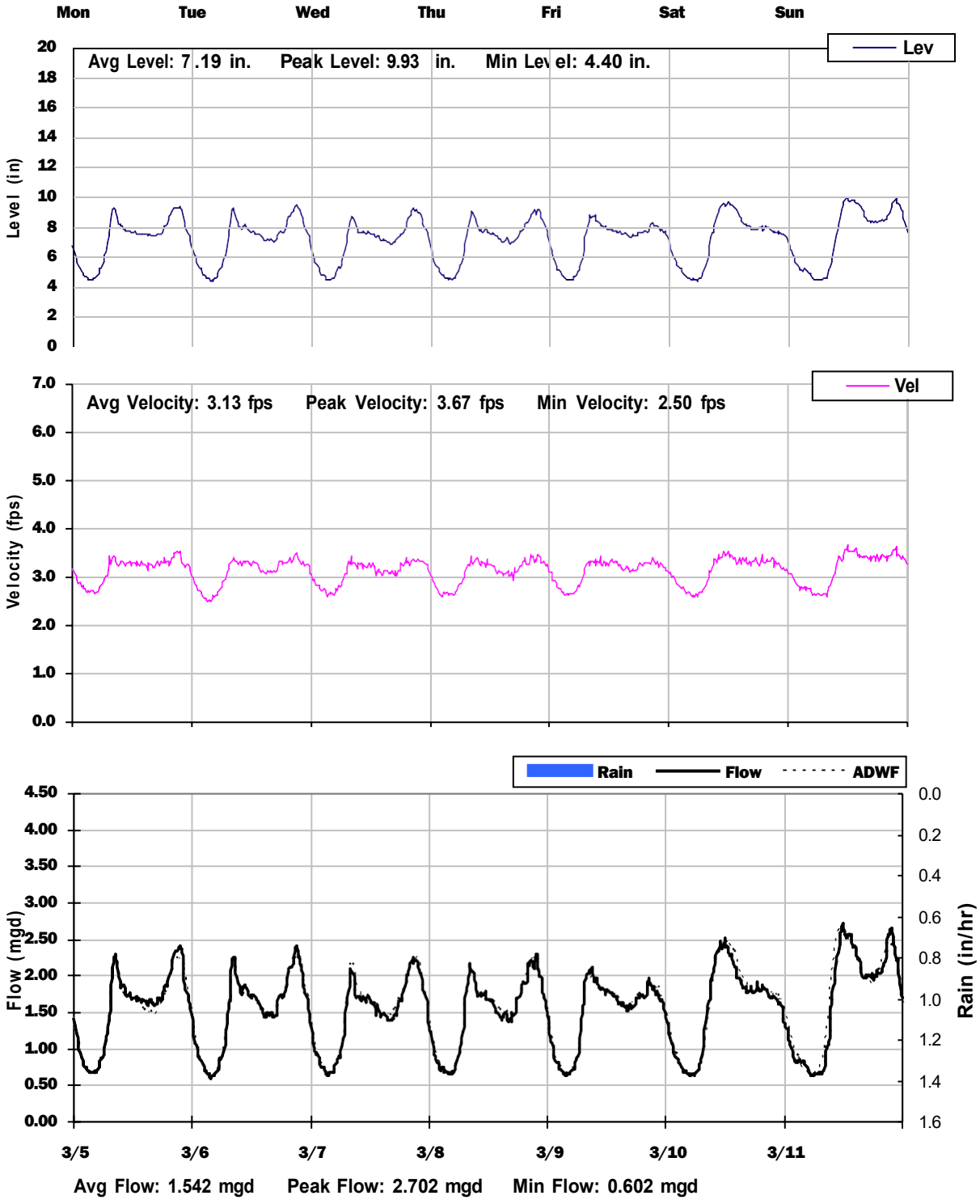
2/26/2018 to 3/5/2018



TC-15

Weekly Level, Velocity and Flow Hydrographs

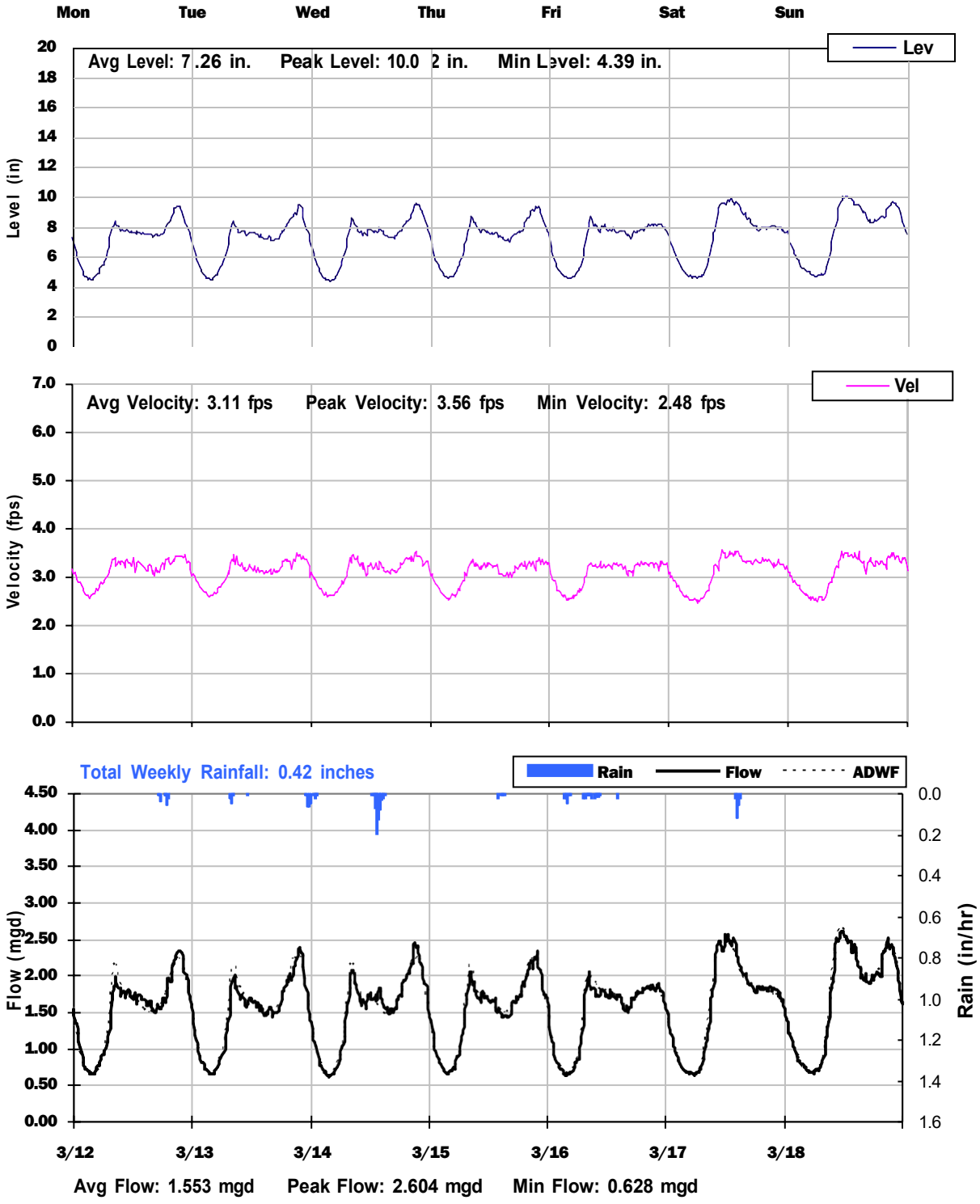
3/5/2018 to 3/12/2018



TC-15

Weekly Level, Velocity and Flow Hydrographs

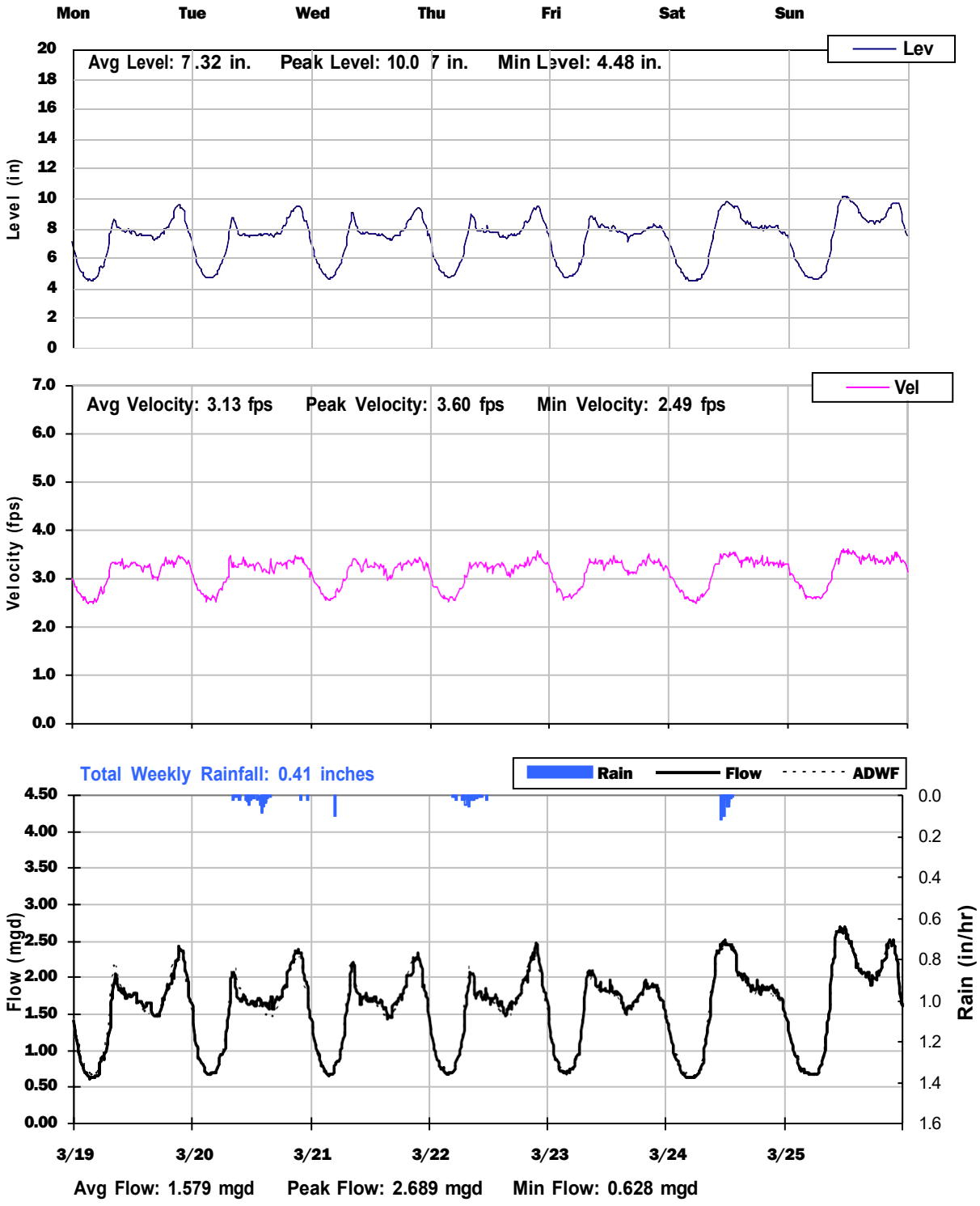
3/12/2018 to 3/19/2018



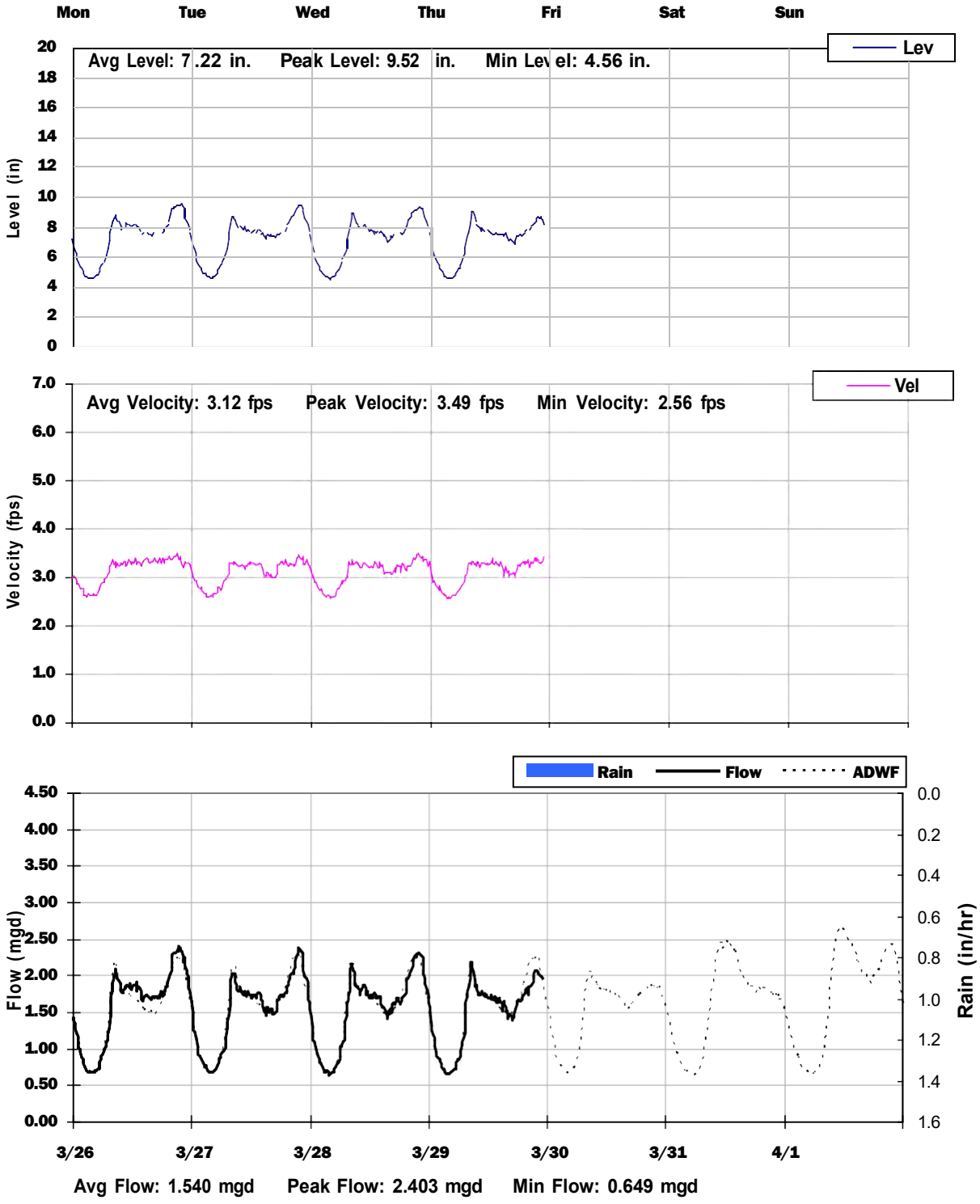
TC-15

Weekly Level, Velocity and Flow Hydrographs

3/19/2018 to 3/26/2018



TC-15
Weekly Level, Velocity and Flow Hydrographs
3/26/2018 to 4/2/2018



TC-15

City of Tracy, California

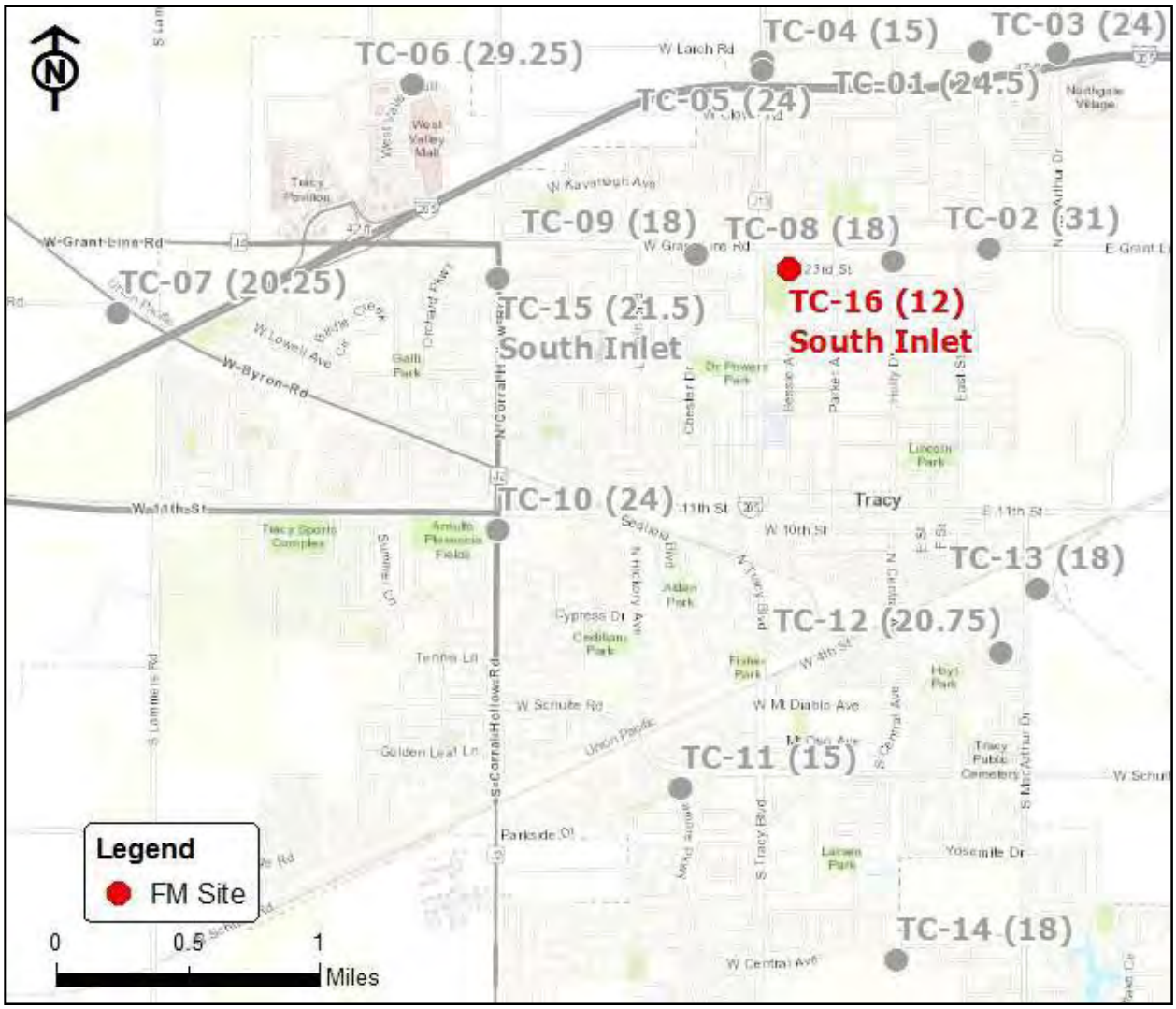
Sanitary Sewer Flow Monitoring

February 26 - April 08, 2020

Monitoring Site: **TC-16**

Location: **Intersection of West 23rd Street and Bessie Avenue**

Data Summary Report



Vicinity Map: TC-16

TC-16

Site Information

Location: Intersection of West 23rd Street and Bessie Avenue

City Manhole:

Coordinates: 121.4331° W, 37.7529° N

Rim Elevation (Earth): 30 feet

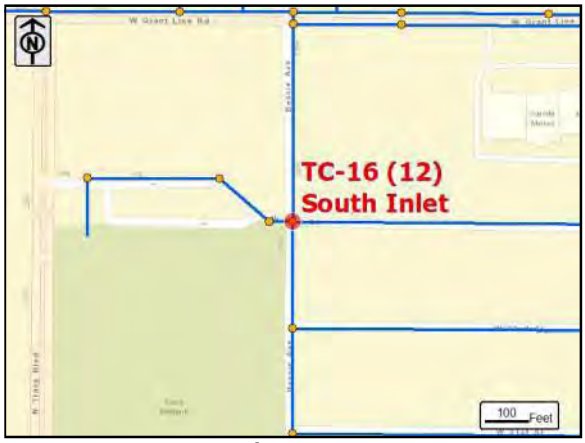
Pipe Diameter: 12 inches

ADWF: 0.214 mgd

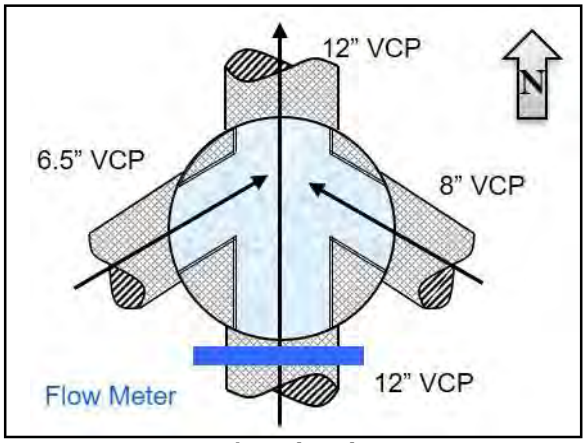
Peak Measured Flow: 0.329 mgd



Satellite Map



Sanitary Map



Flow Sketch


Street View


Plan View

TC-16

Additional Site Photos

Effluent Pipe



Monitored South Influent Pipe



TC-16

Additional Site Photos

East Lateral



West Lateral

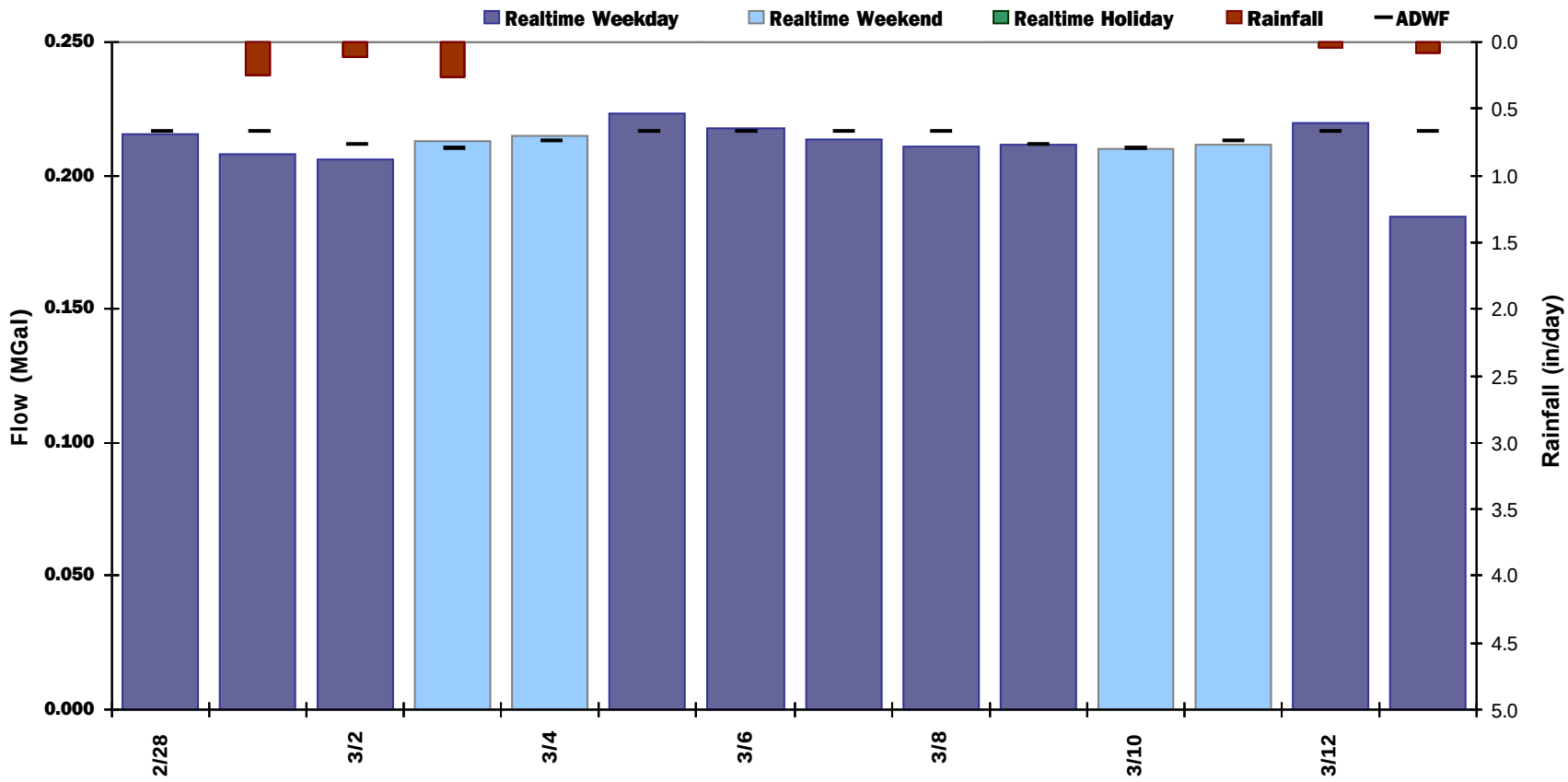


TC-16

Period Flow Summary: Daily Flow Totals

Avg Period Flow: 0.211 MGal **Peak Daily Flow: 0.223 MGal** **Min Daily Flow: 0.184 MGal**

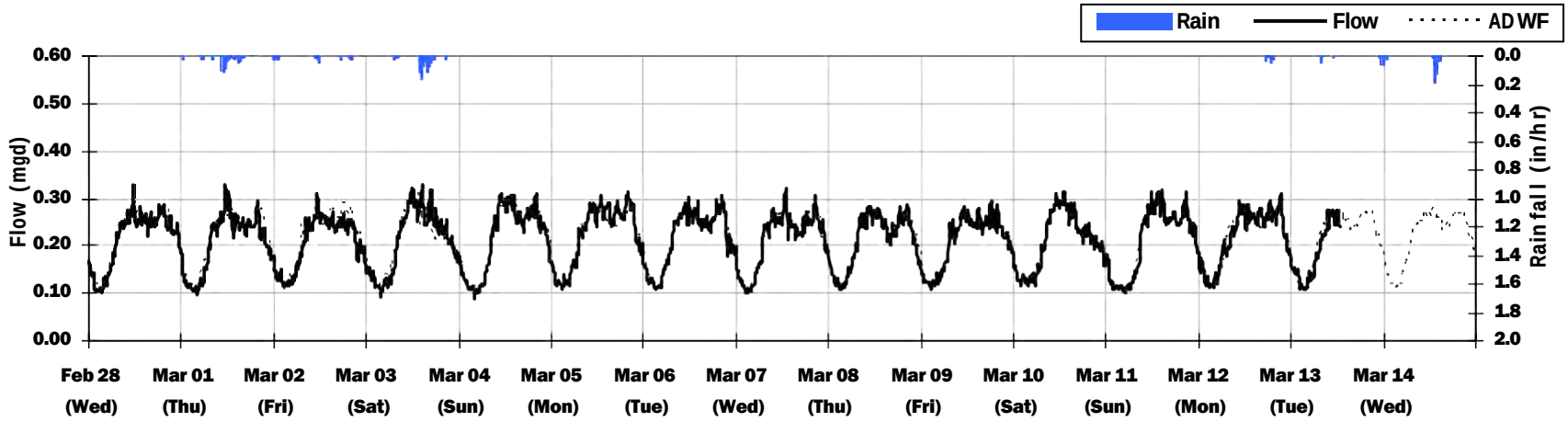
Total Period Rainfall: 0.66 inches

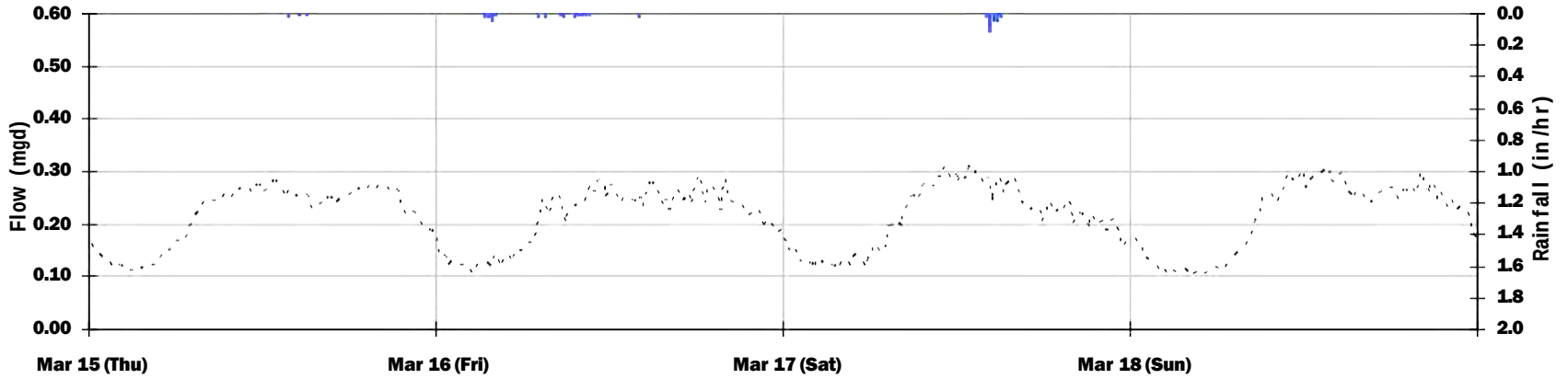


TC-16

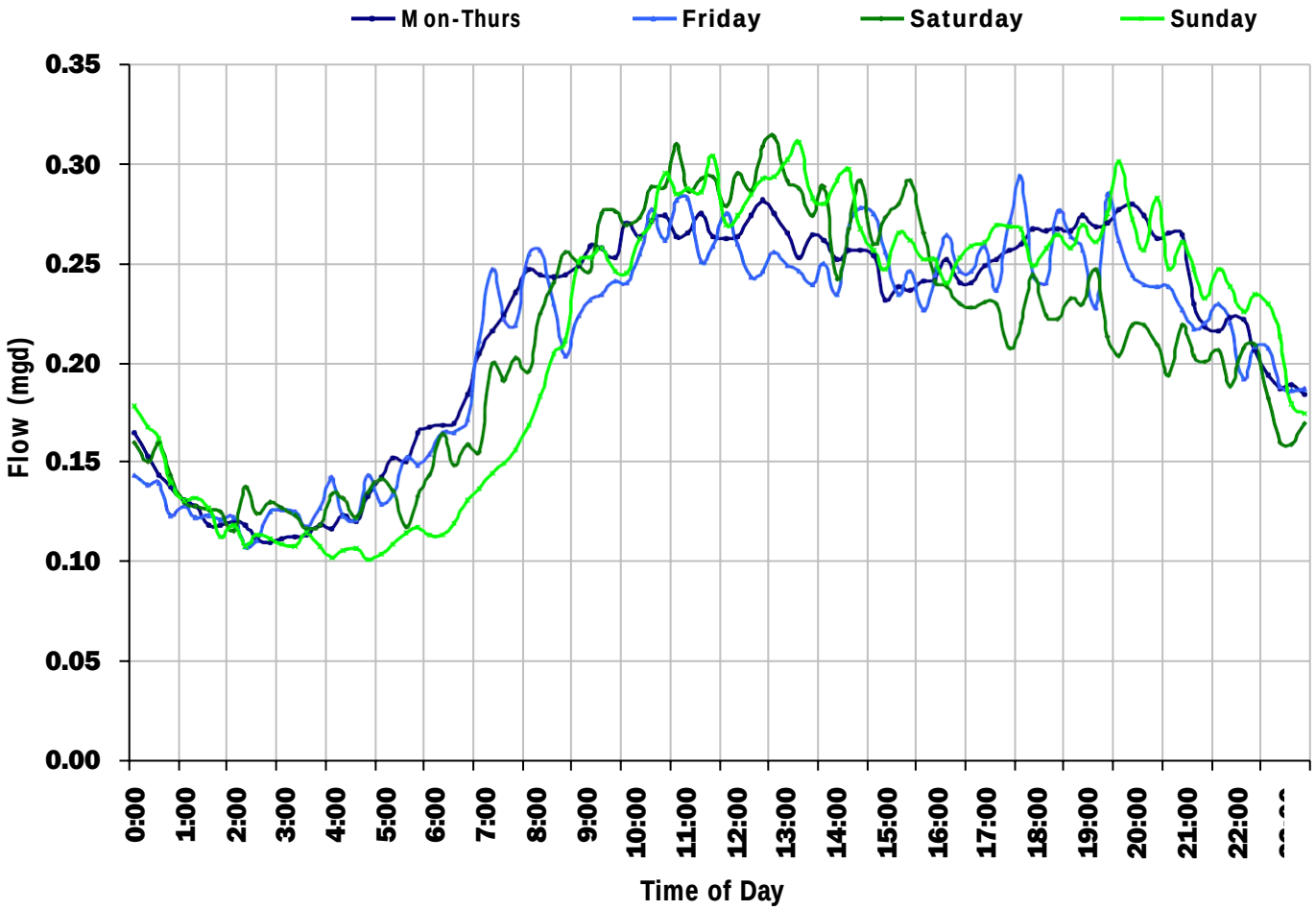
Flow Summary: 2/28/2018 to 3/29/2018

Total Period Rainfall: 1.02 inches Avg Flow: 0.212 mgd Peak Flow: 0.329 mgd Min Flow: 0.091 mgd



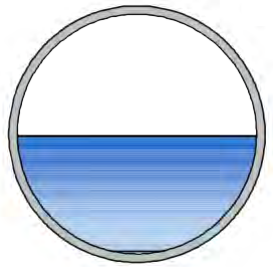


TC-16
Average Dry Weather Flow Hydrographs



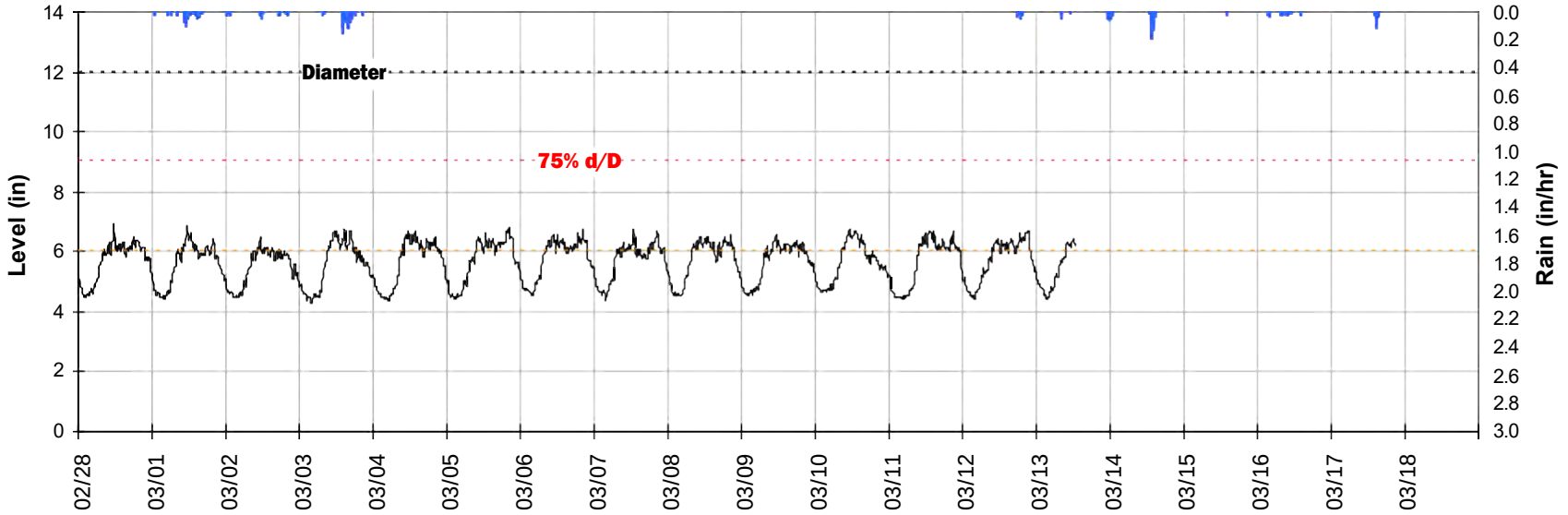
ADWF:

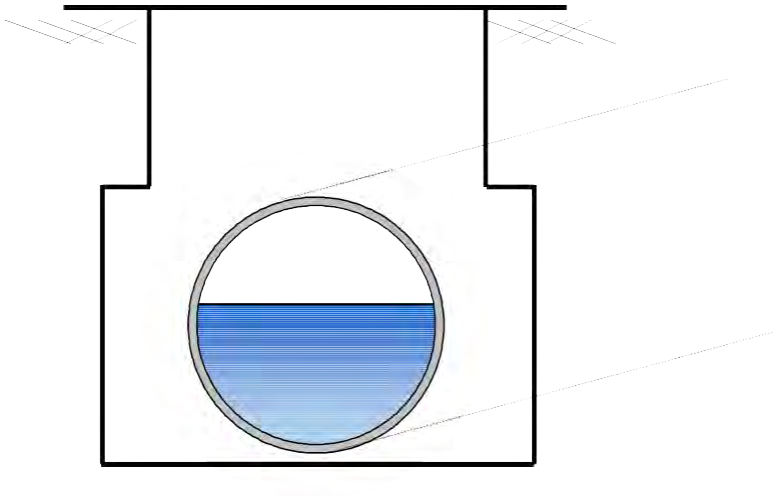
0.214 *mgd*



TC-16
Site Capacity and Surcharge Summary

Realtime Flow Levels with Rainfall Data over Monitoring Period



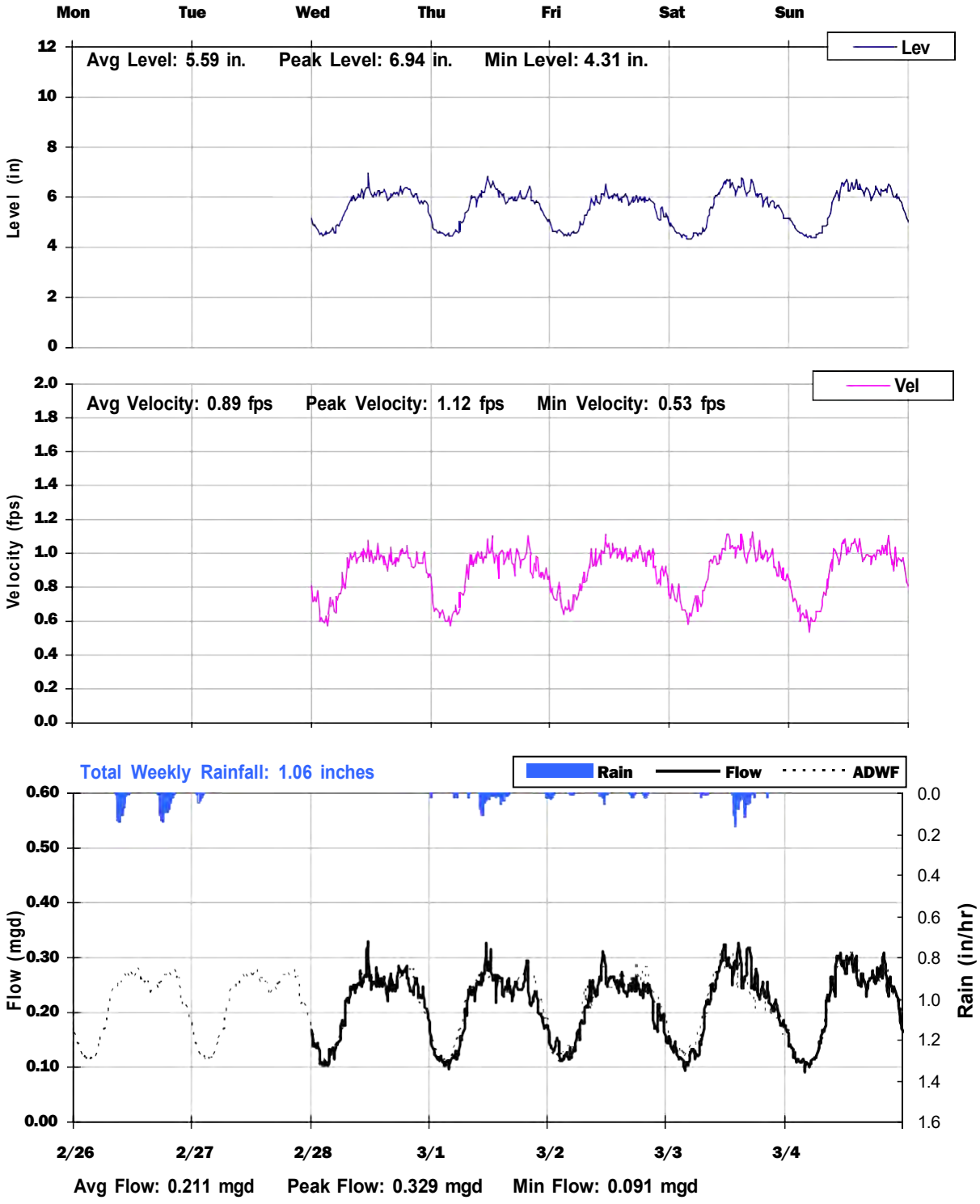


Pipe Diameter:	**12**	***inches***
Peak Measured Level:	**6.94**	***inches***
Peak d/D Ratio:	**0.58**	

TC-16

Weekly Level, Velocity and Flow Hydrographs

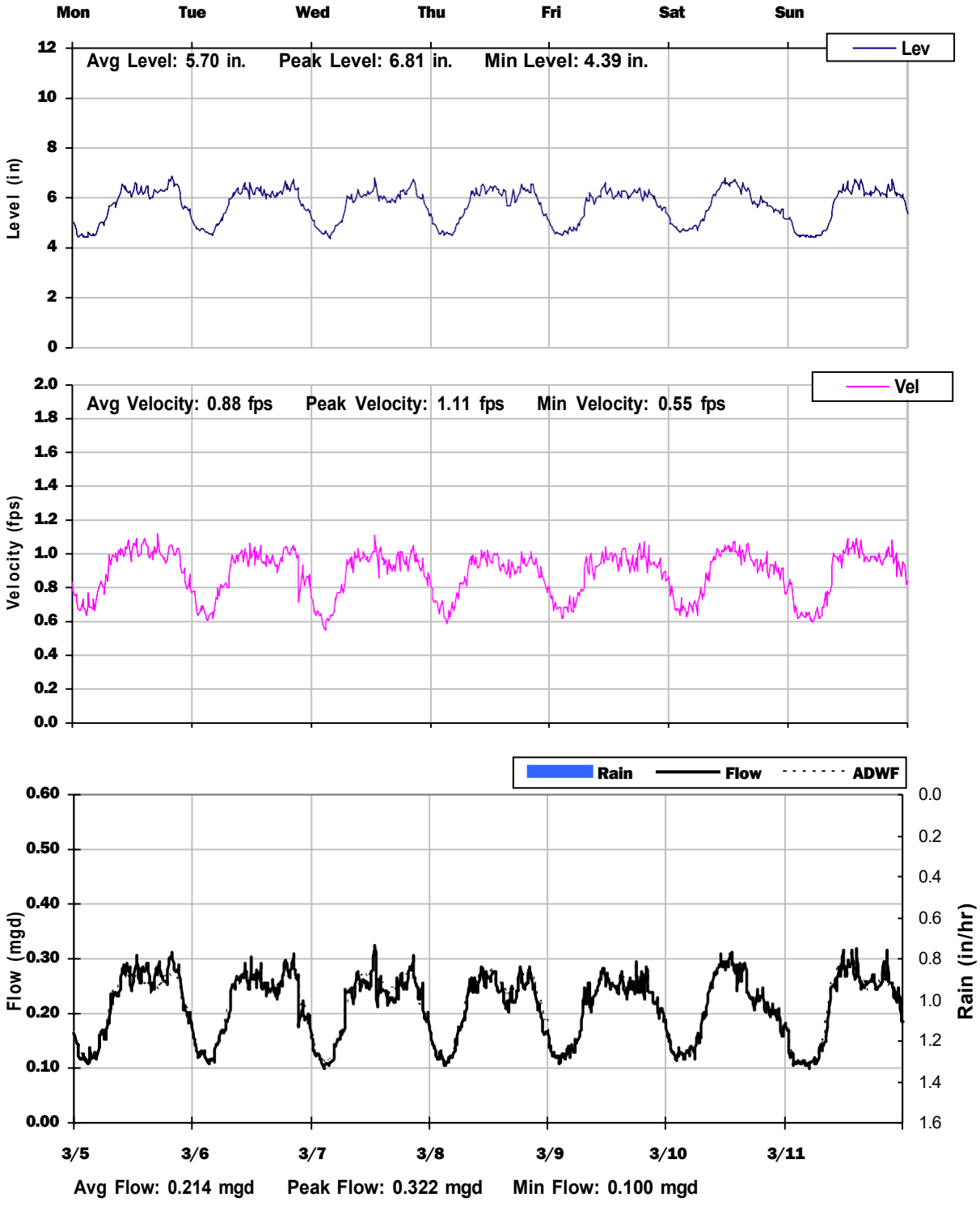
2/26/2018 to 3/5/2018



TC-16

Weekly Level, Velocity and Flow Hydrographs

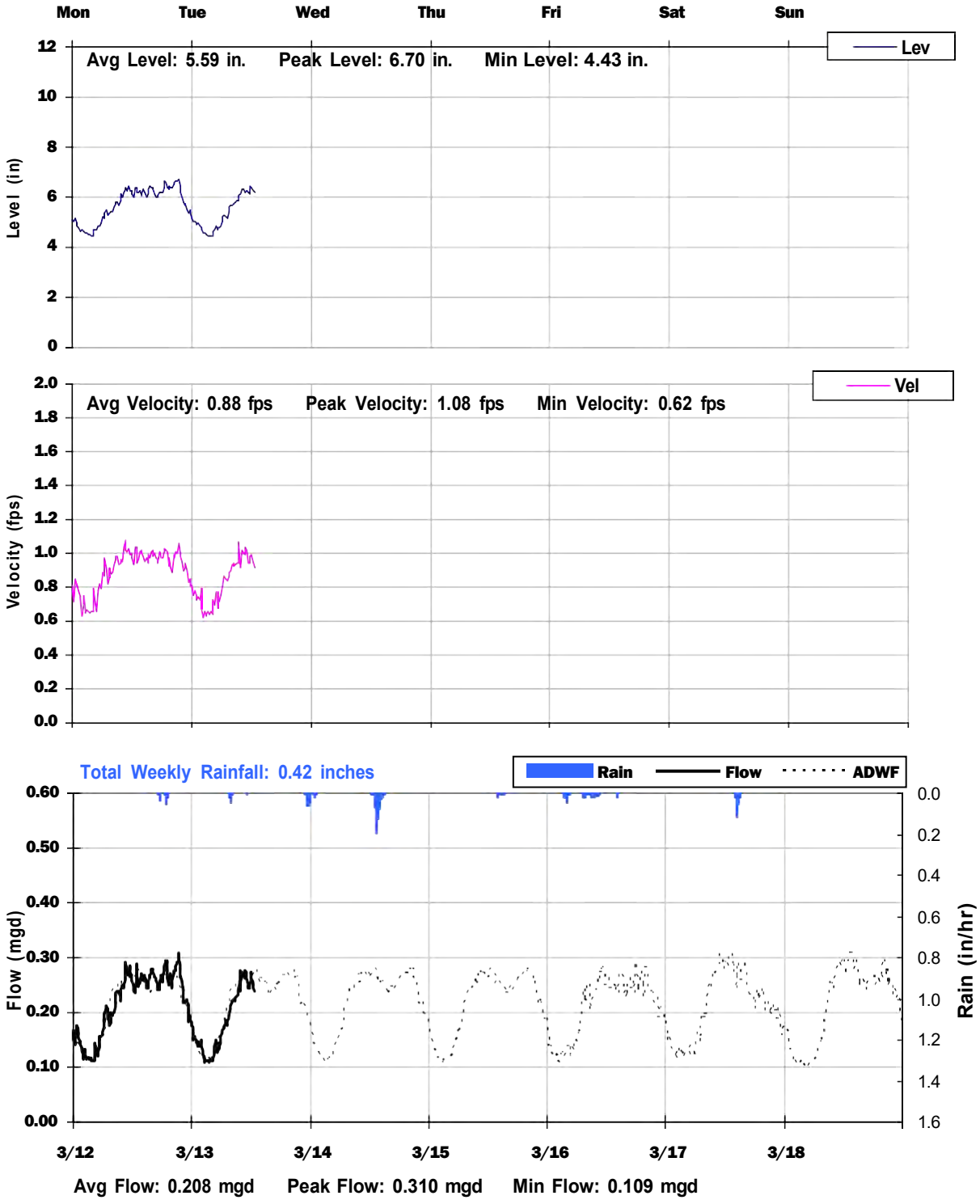
3/5/2018 to 3/12/2018



TC-16

Weekly Level, Velocity and Flow Hydrographs

3/12/2018 to 3/19/2018



Appendix C

DRY WEATHER FLOW CALIBRATION SHEETS

Flow Monitoring Site TC-01, Dry Weather Flow Calibration

Location: E Larch Rd. & Spurline RR
Pipeline Diameter: 24.5"
City Manhole ID: 2068
Model Pipe ID: 2198

Flow Monitor Location







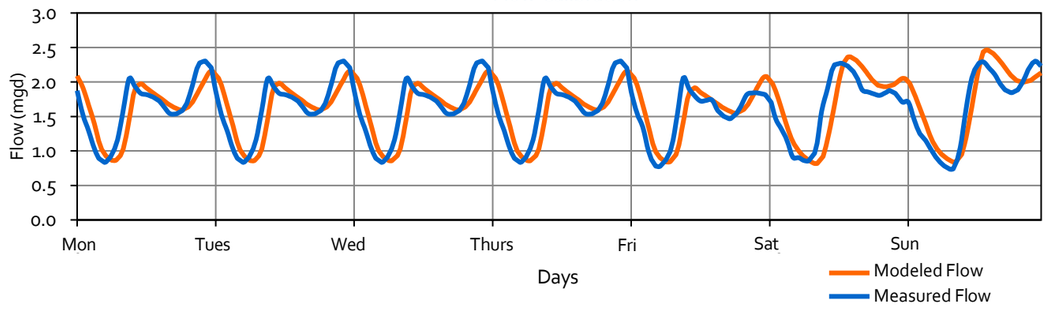
Model Calibration Summary

Day	Measured Data[1] Avg. Flow (mgd)	Peak Flow[2] (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Modeled Data Avg. Flow (mgd)	Peak Flow[2] (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Percent Error[3] Avg. Flow (%)	Peak Flow (%)	Avg. Level (%)	Avg. Vel. (%)
Mon.	1.63	2.30	14.0	1.29	1.61	2.15	13.80	1.34	-0.9%	-6.6%	-1.4%	3.8%
Tues.	1.63	2.30	14.0	1.29	1.61	2.15	13.80	1.34	-0.9%	-6.6%	-1.4%	3.8%
Wed.	1.63	2.30	14.0	1.29	1.61	2.15	13.80	1.34	-0.9%	-6.6%	-1.4%	3.8%
Thur.	1.63	2.30	14.0	1.29	1.61	2.15	13.80	1.34	-0.9%	-6.6%	-1.4%	3.8%
Fri.	1.53	2.06	14.0	1.30	1.57	2.12	13.80	1.31	2.6%	3.0%	-1.6%	0.7%
Sat.	1.64	2.27	13.9	1.34	1.68	2.36	13.83	1.40	2.6%	4.2%	-0.5%	4.0%
Sun.	1.65	2.30	14.0	1.30	1.73	2.46	13.83	1.44	4.9%	6.7%	-1.3%	10.9%
Summary												
Weekday	1.61	--	14.0	1.30	1.60	--	13.8	1.34	-0.3%	--	-1.4%	3.1%
Weekend	1.65	--	14.0	1.32	1.71	--	13.8	1.42	3.7%	--	-0.9%	7.4%
ADWF[4]	1.62	--	14.0	1.30	1.63	--	13.8	1.36	0.9%	--	-1.3%	4.4%

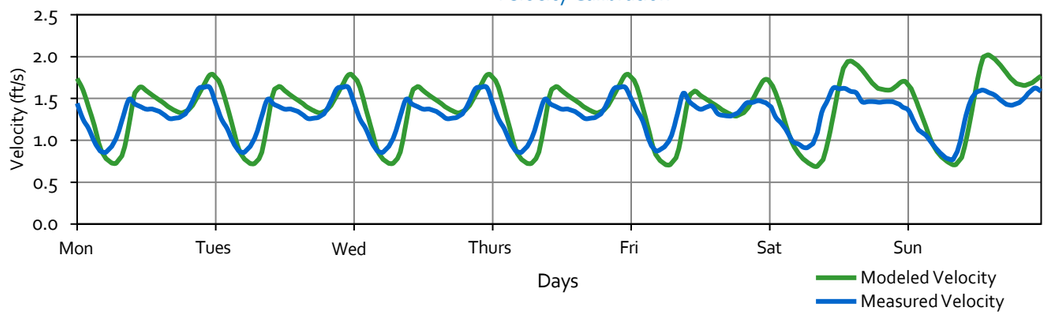
Notes:

1. Source: V&A Temporary Flow Monitoring Program
2. Peak flow is the hourly average hourly peak flow, which was derived based on the 15-minute flow data from V&A.
3. Percent Error = (Modeled - Measured) /Measured x 100
4. ADWF = (5xWeekday Average + 2xWeekend Average)/7

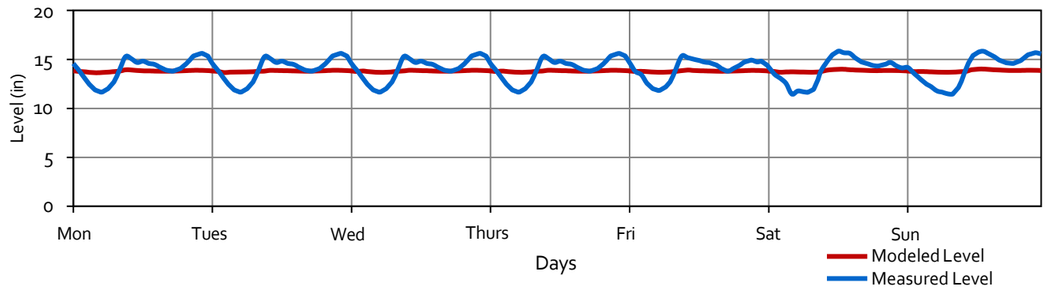
Flow Calibration



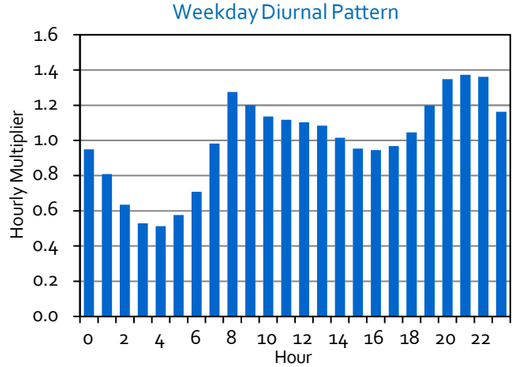
Velocity Calibration



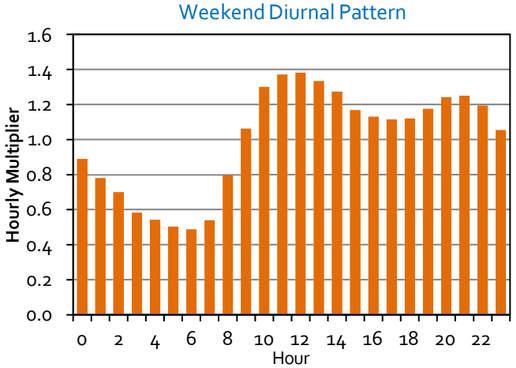
Level Calibration



Weekday Diurnal Pattern



Weekend Diurnal Pattern



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Flow Monitoring Site TC-02, Dry Weather Flow Calibration

Location: E Grant Line Rd. b/w Colony Dr. & Entrada Way
Pipeline Diameter: 29.75"
City Manhole ID: 777
Model Pipe ID: 470

Flow Monitor Location







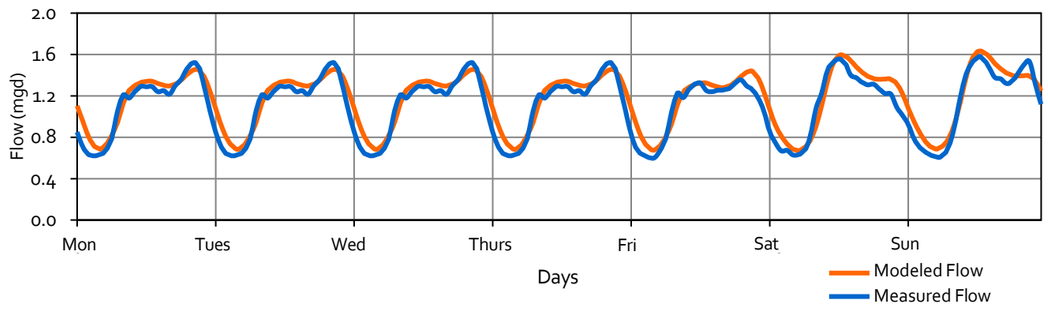
Model Calibration Summary

Day	Measured Data[1] Avg. Flow (mgd)	Measured Data[1] Peak Flow[2] (mgd)	Measured Data[1] Avg. Level (in)	Measured Data[1] Avg. Vel. (ft/s)	Modeled Data Avg. Flow (mgd)	Modeled Data Peak Flow[2] (mgd)	Modeled Data Avg. Level (in)	Modeled Data Avg. Vel. (ft/s)	Percent Error[3] Avg. Flow (%)	Percent Error[3] Peak Flow (%)	Percent Error[3] Avg. Level (%)	Percent Error[3] Avg. Vel. (%)
Mon.	1.11	1.52	9.9	1.22	1.16	1.46	9.59	1.33	4.8%	-4.1%	-2.7%	8.9%
Tues.	1.11	1.52	9.9	1.22	1.16	1.46	9.59	1.33	4.8%	-4.1%	-2.7%	8.9%
Wed.	1.11	1.52	9.9	1.22	1.16	1.46	9.59	1.33	4.8%	-4.1%	-2.7%	8.9%
Thur.	1.11	1.52	9.9	1.22	1.16	1.46	9.59	1.33	4.8%	-4.1%	-2.7%	8.9%
Fri.	1.08	1.36	9.7	1.22	1.15	1.44	9.53	1.32	6.5%	6.1%	-1.3%	8.4%
Sat.	1.11	1.56	9.7	1.24	1.18	1.59	9.62	1.33	6.4%	2.2%	-1.0%	7.5%
Sun.	1.15	1.58	9.9	1.24	1.21	1.63	9.74	1.34	5.2%	3.2%	-2.1%	8.4%
Summary												
Weekday	1.10	--	9.8	1.22	1.16	--	9.6	1.33	5.1%	--	-2.4%	8.8%
Weekend	1.13	--	9.8	1.24	1.19	--	9.7	1.33	5.8%	--	-1.5%	8.0%
ADWF[4]	1.11	--	9.8	1.22	1.17	--	9.6	1.33	5.3%	--	-2.2%	8.6%

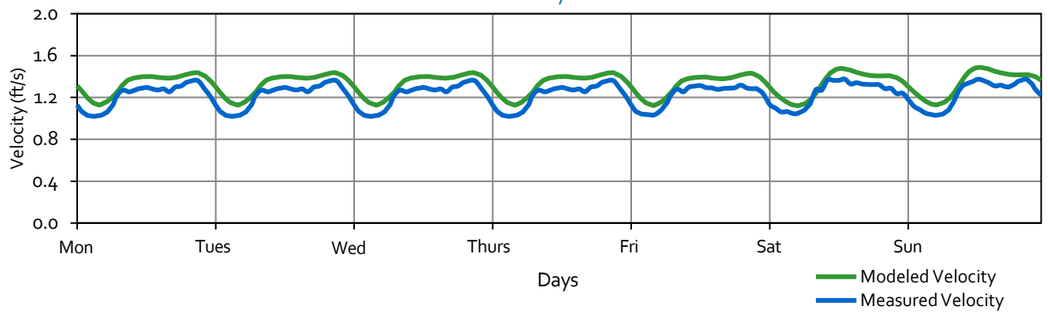
Notes:

1. Source: V&A Temporary Flow Monitoring Program
2. Peak flow is the hourly average hourly peak flow, which was derived based on the 15-minute flow data from V&A.
3. Percent Error = (Modeled - Measured) /Measured x 100
4. ADWF = (5xWeekday Average + 2xWeekend Average)/7

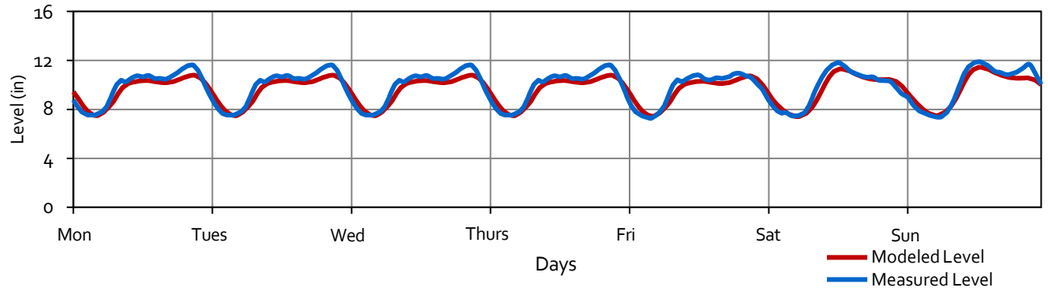
Flow Calibration



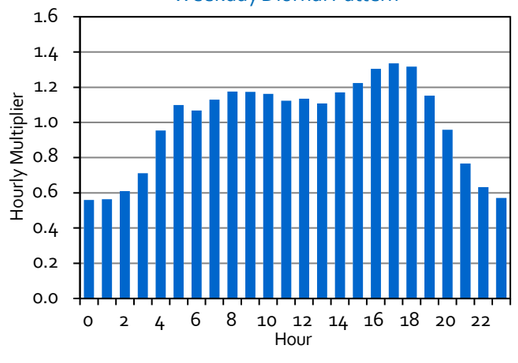
Velocity Calibration



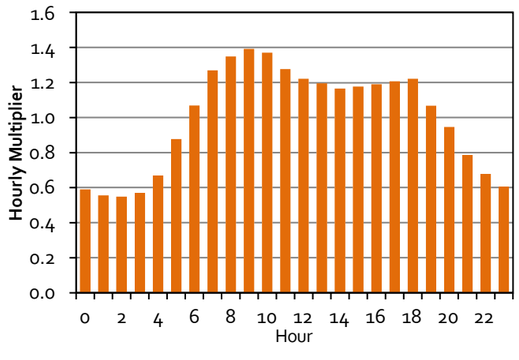
Level Calibration



Weekday Diurnal Pattern



Weekend Diurnal Pattern



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Flow Monitoring Site TC-03, Dry Weather Flow Calibration

Location: N MacArthur Dr. n/o Interstate 205
Pipeline Diameter: 24"
City Manhole ID:
Model Pipe ID: CDT-719

Flow Monitor Location





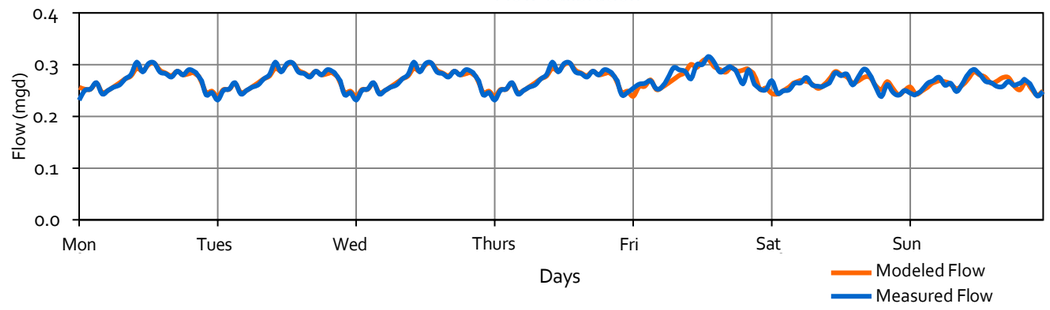
Model Calibration Summary

Day	Measured Data[1] Avg. Flow (mgd)	Measured Data[1] Peak Flow[2] (mgd)	Measured Data[1] Avg. Level (in)	Measured Data[1] Avg. Vel. (ft/s)	Modeled Data Avg. Flow (mgd)	Modeled Data Peak Flow[2] (mgd)	Modeled Data Avg. Level (in)	Modeled Data Avg. Vel. (ft/s)	Percent Error[3] Avg. Flow (%)	Percent Error[3] Peak Flow (%)	Percent Error[3] Avg. Level (%)	Percent Error[3] Avg. Vel. (%)
Mon.	0.27	0.30	6.0	0.70	0.27	0.30	5.67	0.84	0.1%	-0.7%	-6.1%	21.0%
Tues.	0.27	0.30	6.0	0.70	0.27	0.30	5.67	0.84	0.1%	-0.7%	-6.1%	21.0%
Wed.	0.27	0.30	6.0	0.70	0.27	0.30	5.67	0.84	0.1%	-0.7%	-6.1%	21.0%
Thur.	0.27	0.30	6.0	0.70	0.27	0.30	5.67	0.84	0.1%	-0.7%	-6.1%	21.0%
Fri.	0.28	0.32	6.0	0.71	0.28	0.31	5.67	0.86	-0.1%	-1.7%	-6.1%	21.1%
Sat.	0.26	0.29	6.0	0.68	0.26	0.29	5.67	0.82	-0.1%	-1.7%	-5.3%	19.3%
Sun.	0.26	0.29	6.0	0.69	0.26	0.29	5.67	0.82	0.1%	-1.7%	-4.8%	18.7%
Summary												
Weekday	0.27	--	6.0	0.70	0.27	--	5.7	0.85	0.0%	--	-6.1%	*21.1%*
Weekend	0.26	--	6.0	0.69	0.26	--	5.7	0.82	0.0%	--	-5.0%	*19.0%*
ADWF[4]	0.27	--	6.0	0.70	0.27	--	5.7	0.84	0.0%	--	-5.8%	*20.5%*

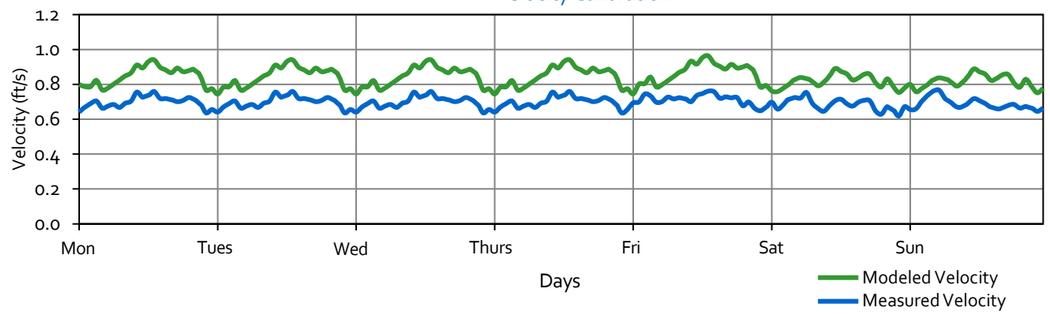
Notes:

1. Source: V&A Temporary Flow Monitoring Program
2. Peak flow is the hourly average hourly peak flow, which was derived based on the 15-minute flow data from V&A.
3. Percent Error = (Modeled - Measured) /Measured x 100
4. ADWF = (5xWeekday Average + 2xWeekend Average)/7

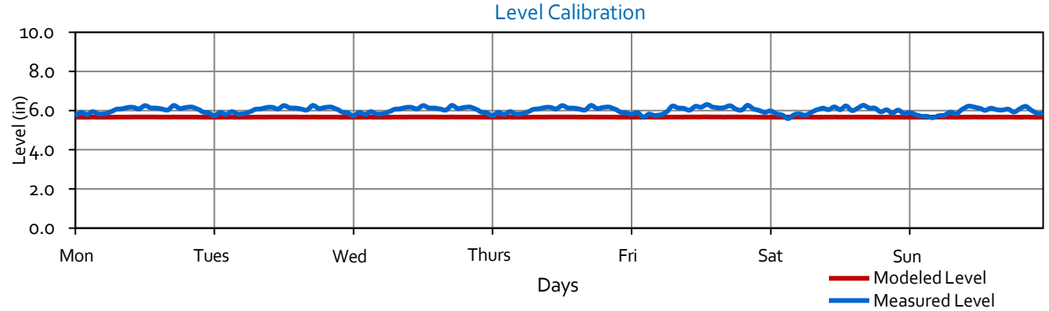
Flow Calibration



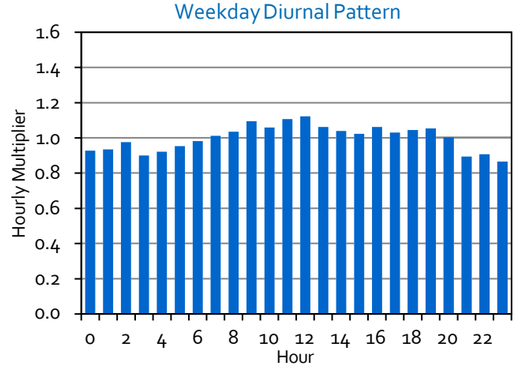
Velocity Calibration



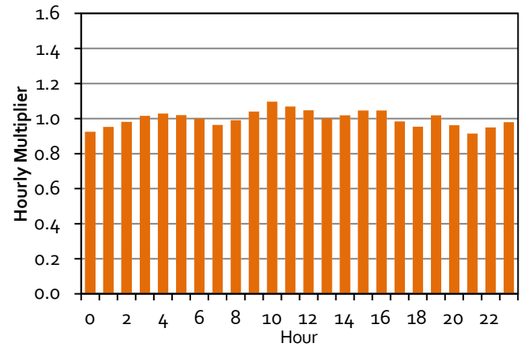
Level Calibration



Weekday Diurnal Pattern



Weekend Diurnal Pattern

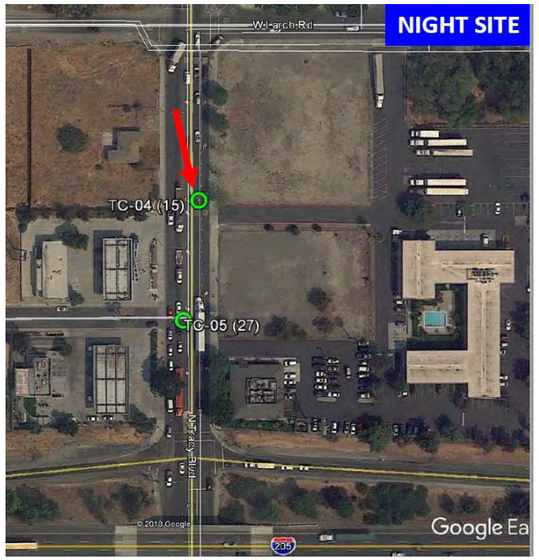


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Flow Monitoring Site TC-04, Dry Weather Flow Calibration

Location: N Tracy Blvd. n/o Interstate 205
Pipeline Diameter: 15"
City Manhole ID: 1009
Model Pipe ID: 157

Flow Monitor Location





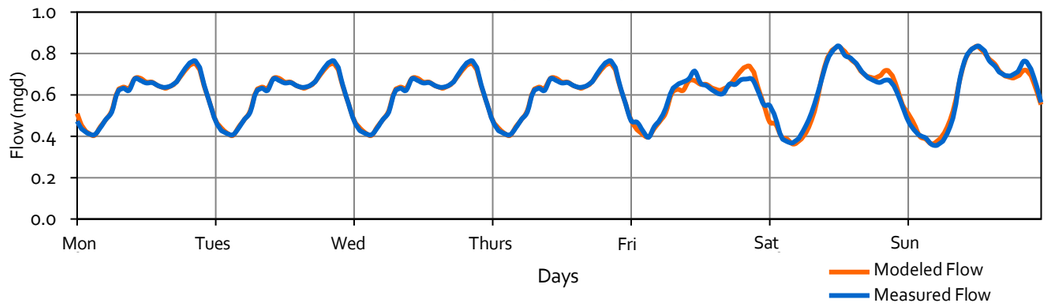
Model Calibration Summary

Day	Measured Data[1] Avg. Flow (mgd)	Measured Data[1] Peak Flow[2] (mgd)	Measured Data[1] Avg. Level (in)	Measured Data[1] Avg. Vel. (ft/s)	Modeled Data Avg. Flow (mgd)	Modeled Data Peak Flow[2] (mgd)	Modeled Data Avg. Level (in)	Modeled Data Avg. Vel. (ft/s)	Percent Error[3] Avg. Flow (%)	Percent Error[3] Peak Flow (%)	Percent Error[3] Avg. Level (%)	Percent Error[3] Avg. Vel. (%)
Mon.	0.60	0.76	3.3	4.67	0.60	0.75	4.90	2.65	0.1%	-1.7%	49.9%	-43.3%
Tues.	0.60	0.76	3.3	4.67	0.60	0.75	4.90	2.65	0.1%	-1.7%	49.9%	-43.3%
Wed.	0.60	0.76	3.3	4.67	0.60	0.75	4.90	2.65	0.1%	-1.7%	49.9%	-43.3%
Thur.	0.60	0.76	3.3	4.67	0.60	0.75	4.90	2.65	0.1%	-1.7%	49.9%	-43.3%
Fri.	0.59	0.72	3.3	4.64	0.59	0.74	4.86	2.64	0.1%	3.2%	49.5%	-43.3%
Sat.	0.61	0.84	3.4	4.58	0.61	0.83	4.93	2.65	-0.3%	-0.3%	46.9%	-42.2%
Sun.	0.61	0.84	3.3	4.70	0.61	0.83	4.94	2.65	0.0%	-0.2%	50.8%	-43.6%
Summary												
Weekday	0.60	--	3.3	4.66	0.60	--	4.9	2.65	0.1%	--	49.8%	-43.3%
Weekend	0.61	--	3.3	4.64	0.61	--	4.9	2.65	-0.1%	--	48.8%	-42.9%
ADWF[4]	0.60	--	3.3	4.66	0.60	--	4.9	2.65	0.0%	--	49.5%	-43.2%

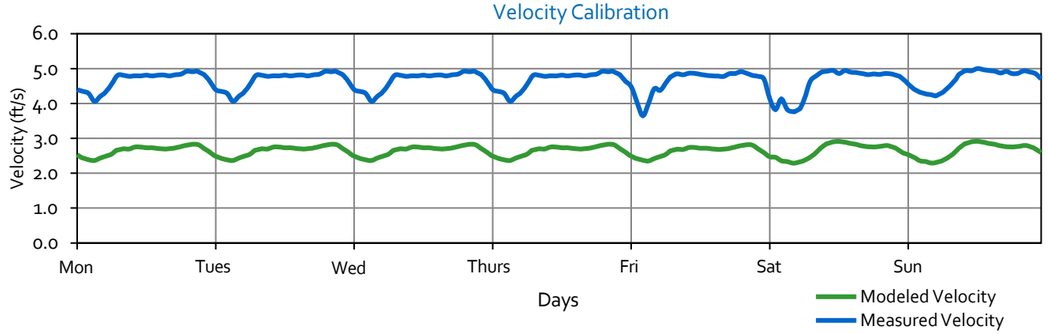
Notes:

1. Source: V&A Temporary Flow Monitoring Program
2. Peak flow is the hourly average hourly peak flow, which was derived based on the 15-minute flow data from V&A.
3. Percent Error = (Modeled - Measured) /Measured x 100
4. ADWF = (5xWeekday Average + 2xWeekend Average)/7

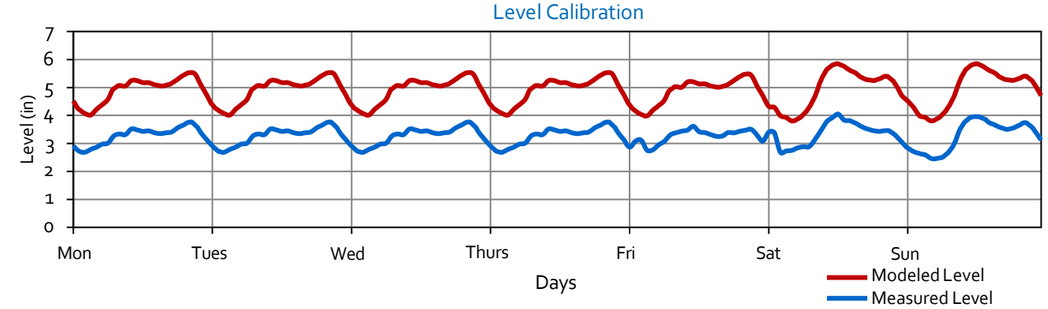
Flow Calibration



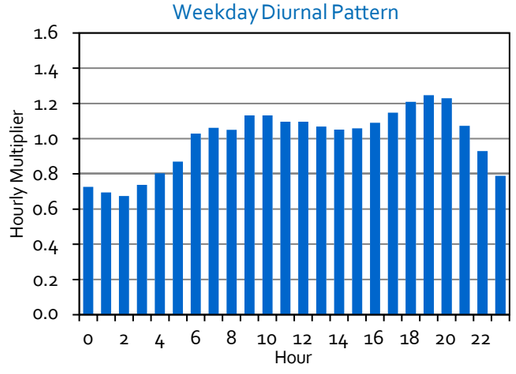
Velocity Calibration



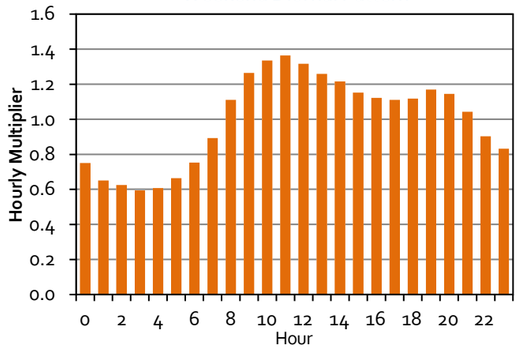
Level Calibration



Weekday Diurnal Pattern



Weekend Diurnal Pattern

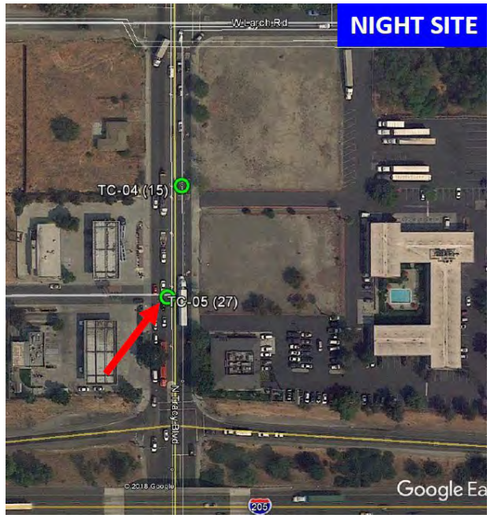


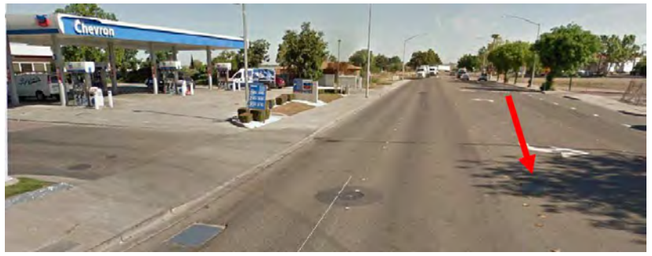
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Flow Monitoring Site TC-05, Dry Weather Flow Calibration

Location: N Tracy Blvd. n/o Interstate 205
Pipeline Diameter: 24"
City Manhole ID: 1005
Model Pipe ID: 154

Flow Monitor Location







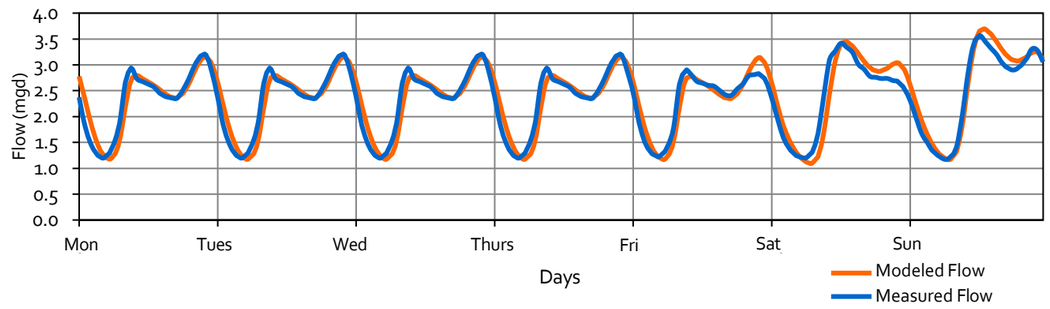
Model Calibration Summary

Day	Measured Data[1] Avg. Flow (mgd)	Measured Data[1] Peak Flow[2] (mgd)	Measured Data[1] Avg. Level (in)	Measured Data[1] Avg. Vel. (ft/s)	Modeled Data Avg. Flow (mgd)	Modeled Data Peak Flow[2] (mgd)	Modeled Data Avg. Level (in)	Modeled Data Avg. Vel. (ft/s)	Percent Error[3] Avg. Flow (%)	Percent Error[3] Peak Flow (%)	Percent Error[3] Avg. Level (%)	Percent Error[3] Avg. Vel. (%)
Mon.	2.33	3.19	9.8	2.92	2.33	3.15	8.35	3.64	0.0%	-1.2%	-15.0%	24.7%
Tues.	2.33	3.19	9.8	2.92	2.33	3.15	8.35	3.64	0.0%	-1.2%	-15.0%	24.7%
Wed.	2.33	3.19	9.8	2.92	2.33	3.15	8.35	3.64	0.0%	-1.2%	-15.0%	24.7%
Thur.	2.33	3.19	9.8	2.92	2.33	3.15	8.35	3.64	0.0%	-1.2%	-15.0%	24.7%
Fri.	2.30	2.90	9.8	2.92	2.32	3.14	8.32	3.63	0.5%	8.3%	-14.8%	24.5%
Sat.	2.40	3.42	10.0	2.90	2.44	3.45	8.49	3.66	1.6%	0.8%	-15.3%	26.3%
Sun.	2.50	3.57	10.2	2.95	2.59	3.69	8.77	3.73	3.5%	3.4%	-14.1%	26.6%
Summary												
Weekday	2.33	--	9.8	2.92	2.33	--	8.3	3.64	0.1%	--	-15.0%	24.6%
Weekend	2.45	--	10.1	2.93	2.51	--	8.6	3.70	2.6%	--	-14.7%	26.4%
ADWF[4]	2.36	--	9.9	2.92	2.38	--	8.4	3.66	0.8%	--	-14.9%	25.2%

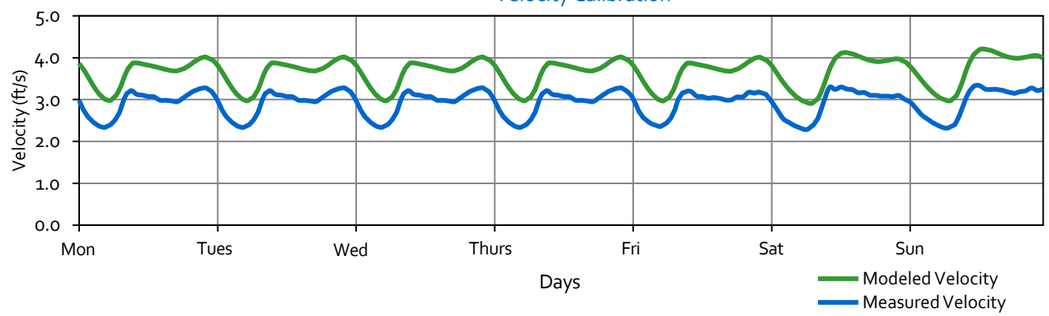
Notes:

1. Source: V&A Temporary Flow Monitoring Program
2. Peak flow is the hourly average hourly peak flow, which was derived based on the 15-minute flow data from V&A.
3. Percent Error = (Modeled - Measured) /Measured x 100
4. ADWF = (5xWeekday Average + 2xWeekend Average)/7

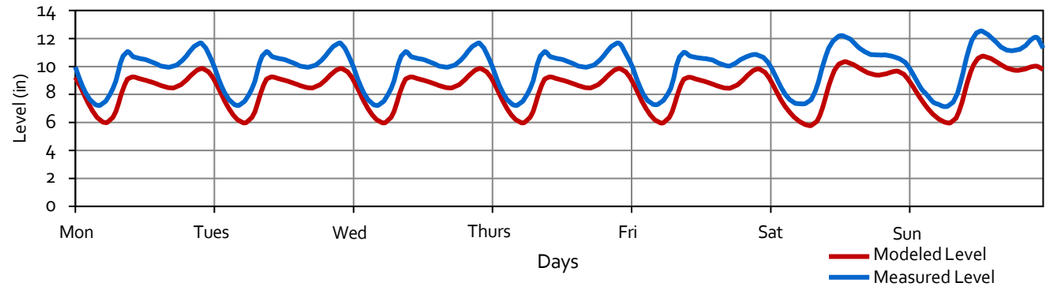
Flow Calibration



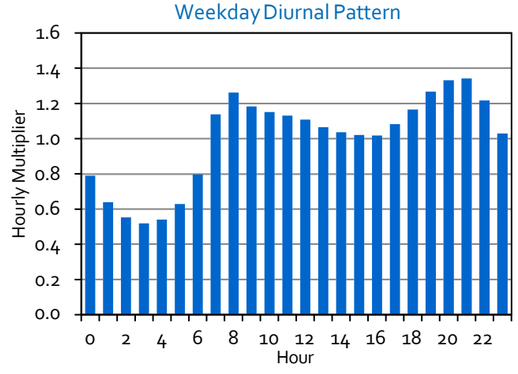
Velocity Calibration



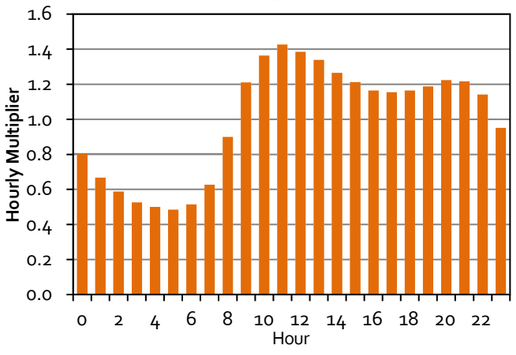
Level Calibration



Weekday Diurnal Pattern



Weekend Diurnal Pattern

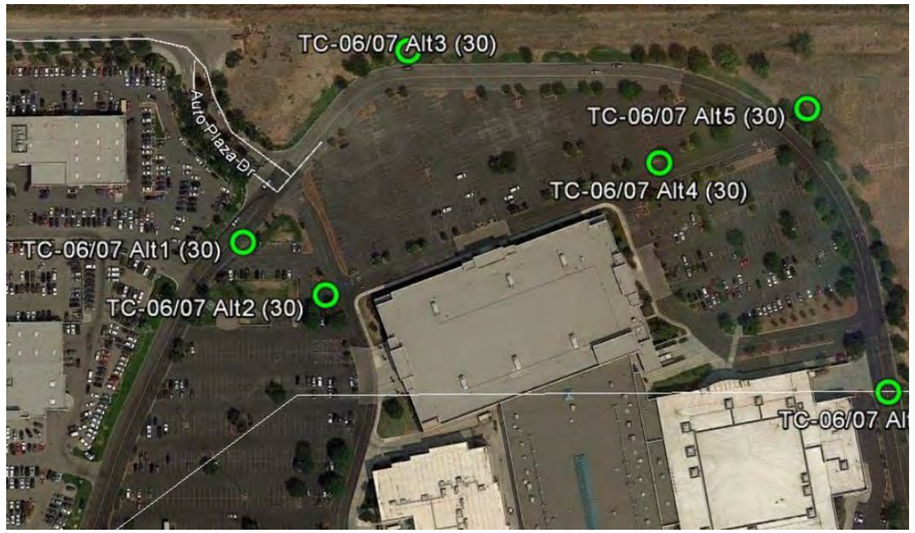


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Flow Monitoring Site TC-06, Dry Weather Flow Calibration

Location: West Valley Mall n/o Auto Plaza Dr.
Pipeline Diameter: 29.25"
City Manhole ID: 3378
Model Pipe ID: CDT-263

Flow Monitor Location



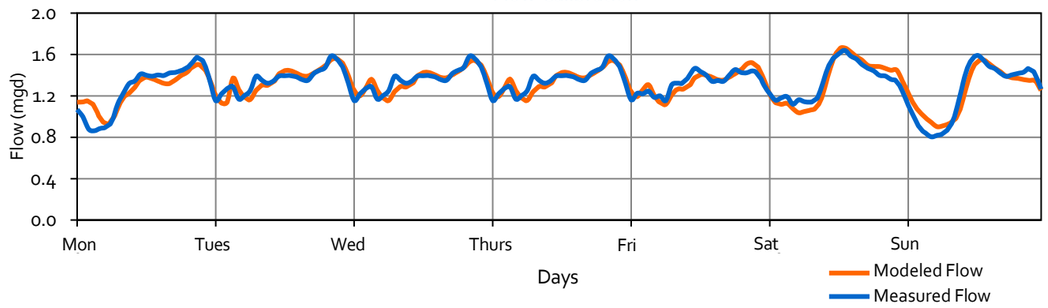
Model Calibration Summary

Day	Measured Data[1] Avg. Flow (mgd)	Measured Data[1] Peak Flow[2] (mgd)	Measured Data[1] Avg. Level (in)	Measured Data[1] Avg. Vel. (ft/s)	Modeled Data Avg. Flow (mgd)	Modeled Data Peak Flow[2] (mgd)	Modeled Data Avg. Level (in)	Modeled Data Avg. Vel. (ft/s)	Percent Error[3] Avg. Flow (%)	Percent Error[3] Peak Flow (%)	Percent Error[3] Avg. Level (%)	Percent Error[3] Avg. Vel. (%)
Mon.	1.26	1.58	7.8	1.93	1.26	1.50	7.44	2.04	0.0%	-4.7%	-4.7%	5.9%
Tues.	1.35	1.59	8.6	2.01	1.35	1.56	7.71	2.09	-0.1%	-1.5%	-9.8%	4.0%
Wed.	1.35	1.59	8.6	2.01	1.35	1.56	7.71	2.09	-0.1%	-1.5%	-9.8%	4.0%
Thur.	1.35	1.59	8.6	2.01	1.35	1.56	7.71	2.09	-0.1%	-1.5%	-9.8%	4.0%
Fri.	1.33	1.47	8.0	1.98	1.33	1.52	7.64	2.08	-0.2%	3.7%	-4.6%	5.0%
Sat.	1.35	1.64	8.0	1.99	1.34	1.66	7.67	2.08	-0.2%	1.5%	-4.6%	4.8%
Sun.	1.24	1.59	7.7	1.92	1.24	1.55	7.37	2.03	0.4%	-2.7%	-4.3%	6.0%
Summary												
Weekday	1.33	--	8.3	1.99	1.33	--	7.6	2.08	-0.1%	--	-7.8%	4.6%
Weekend	1.29	--	7.9	1.95	1.29	--	7.5	2.06	0.1%	--	-4.5%	5.4%
ADWF[4]	1.32	--	8.2	1.98	1.32	--	7.6	2.07	0.0%	--	-6.9%	4.8%

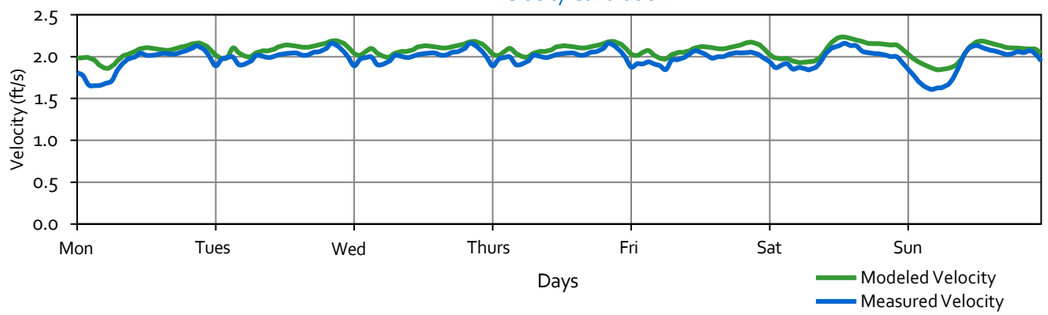
Notes:

1. Source: V&A Temporary Flow Monitoring Program
2. Peak flow is the hourly average hourly peak flow, which was derived based on the 15-minute flow data from V&A.
3. Percent Error = (Modeled - Measured) /Measured x 100
4. ADWF = (5xWeekday Average + 2xWeekend Average)/7

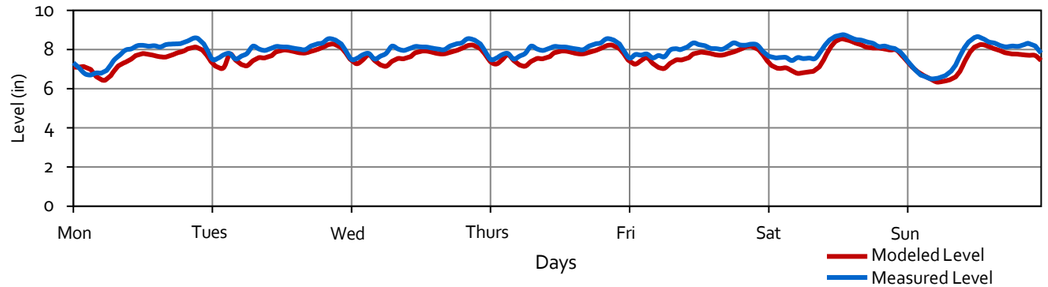
Flow Calibration



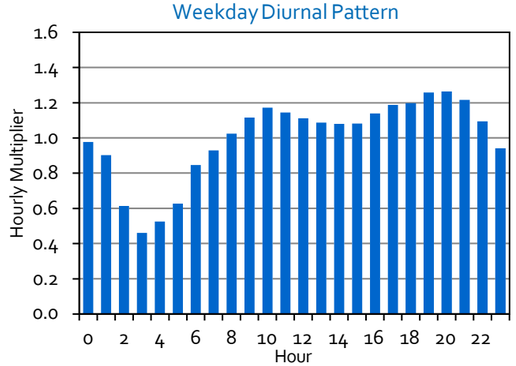
Velocity Calibration



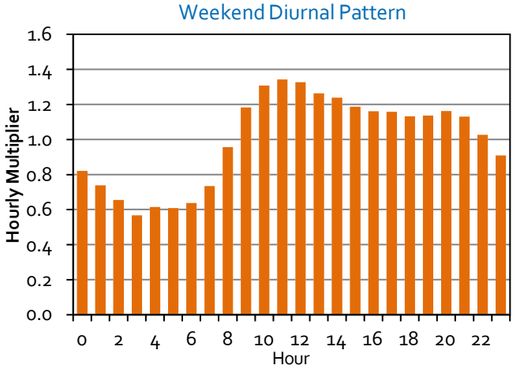
Level Calibration



Weekday Diurnal Pattern



Weekend Diurnal Pattern



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Flow Monitoring Site TC-07, Dry Weather Flow Calibration

Location: W Byrin Rd. e/o Von Sosten Rd.
Pipeline Diameter: 20.25"
City Manhole ID: 3362
Model Pipe ID: CDT-231

Flow Monitor Location



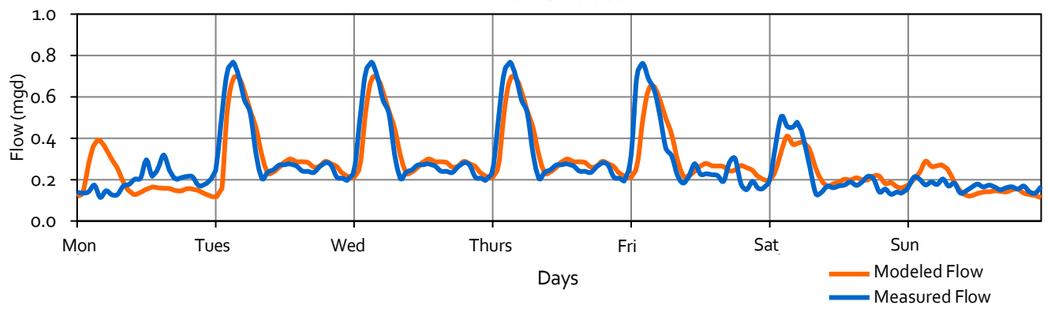
Model Calibration Summary

Day	Measured Data[1] Avg. Flow (mgd)	Measured Data[1] Peak Flow[2] (mgd)	Measured Data[1] Avg. Level (in)	Measured Data[1] Avg. Vel. (ft/s)	Modeled Data Avg. Flow (mgd)	Modeled Data Peak Flow[2] (mgd)	Modeled Data Avg. Level (in)	Modeled Data Avg. Vel. (ft/s)	Percent Error[3] Avg. Flow (%)	Percent Error[3] Peak Flow (%)	Percent Error[3] Avg. Level (%)	Percent Error[3] Avg. Vel. (%)
Mon.	0.19	0.32	7.7	0.37	0.19	0.39	4.52	0.76	0.6%	21.9%	-41.6%	105.7%
Tues.	0.34	0.77	8.6	0.62	0.34	0.70	5.23	1.08	-0.9%	-9.2%	-39.0%	76.0%
Wed.	0.34	0.77	8.6	0.62	0.34	0.70	5.23	1.08	-0.9%	-9.2%	-39.0%	76.0%
Thur.	0.34	0.77	8.6	0.62	0.34	0.70	5.23	1.08	-0.9%	-9.2%	-39.0%	76.0%
Fri.	0.32	0.76	7.9	0.61	0.32	0.65	5.14	1.06	0.5%	-14.8%	-34.7%	73.2%
Sat.	0.24	0.51	7.9	0.46	0.24	0.41	4.83	0.88	1.3%	-18.8%	-38.4%	91.0%
Sun.	0.17	0.21	7.1	0.38	0.17	0.29	4.42	0.73	3.4%	35.8%	-37.6%	89.5%
Summary												
Weekday	0.31	--	8.3	0.57	0.31	--	5.1	1.01	-0.4%	--	*-38.6%*	*79.2%*
Weekend	0.20	--	7.5	0.42	0.21	--	4.6	0.80	2.1%	--	*-38.0%*	*90.4%*
ADWF[4]	0.28	--	8.0	0.52	0.28	--	4.9	0.95	0.1%	--	*-38.5%*	*81.8%*

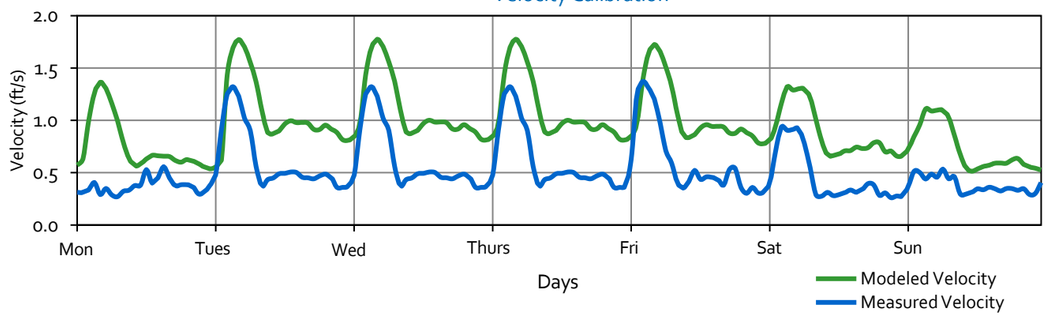
Notes:

1. Source: V&A Temporary Flow Monitoring Program
2. Peak flow is the hourly average hourly peak flow, which was derived based on the 15-minute flow data from V&A.
3. Percent Error = (Modeled - Measured) /Measured x 100
4. ADWF = (5xWeekday Average + 2xWeekend Average)/7

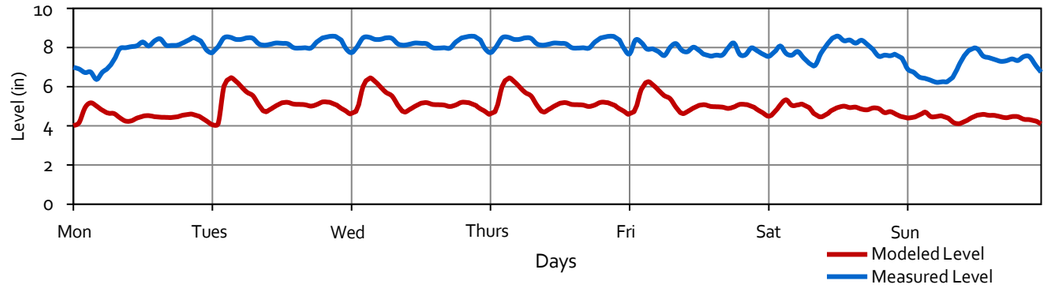
Flow Calibration



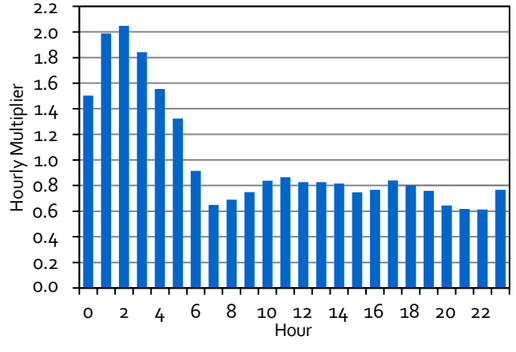
Velocity Calibration



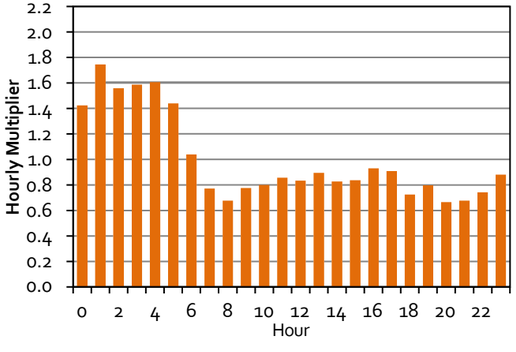
Level Calibration



Weekday Diurnal Pattern



Weekend Diurnal Pattern



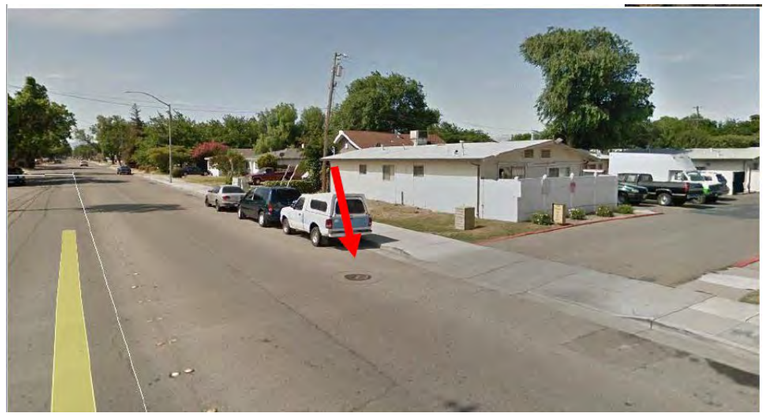
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Flow Monitoring Site TC-08, Dry Weather Flow Calibration

Location: Holly Dr. b/w E 22nd St. & W Grant Line Rd.
Pipeline Diameter: 18"
City Manhole ID: 752
Model Pipe ID: 450

Flow Monitor Location







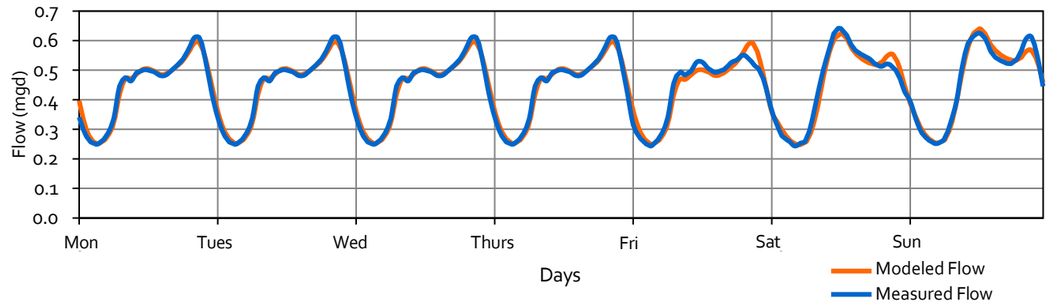
Model Calibration Summary

Day	Measured Data[1] Avg. Flow (mgd)	Measured Data[1] Peak Flow[2] (mgd)	Measured Data[1] Avg. Level (in)	Measured Data[1] Avg. Vel. (ft/s)	Modeled Data Avg. Flow (mgd)	Modeled Data Peak Flow[2] (mgd)	Modeled Data Avg. Level (in)	Modeled Data Avg. Vel. (ft/s)	Percent Error[3] Avg. Flow (%)	Percent Error[3] Peak Flow (%)	Percent Error[3] Avg. Level (%)	Percent Error[3] Avg. Vel. (%)
Mon.	0.44	0.61	4.7	2.24	0.44	0.59	4.49	2.33	0.1%	-3.0%	-5.0%	3.9%
Tues.	0.44	0.61	4.7	2.24	0.44	0.59	4.49	2.33	0.1%	-3.0%	-5.0%	3.9%
Wed.	0.44	0.61	4.7	2.24	0.44	0.59	4.49	2.33	0.1%	-3.0%	-5.0%	3.9%
Thur.	0.44	0.61	4.7	2.24	0.44	0.59	4.49	2.33	0.1%	-3.0%	-5.0%	3.9%
Fri.	0.44	0.55	4.6	2.20	0.44	0.59	4.47	2.32	0.0%	6.8%	-3.1%	5.3%
Sat.	0.45	0.64	4.7	2.20	0.45	0.62	4.51	2.33	-0.4%	-2.5%	-3.7%	5.8%
Sun.	0.47	0.63	4.7	2.22	0.46	0.64	4.56	2.35	-0.1%	2.4%	-3.7%	6.1%
Summary												
Weekday	0.44	--	4.7	2.23	0.44	--	4.5	2.32	0.1%	--	-4.6%	4.2%
Weekend	0.46	--	4.7	2.21	0.46	--	4.5	2.34	-0.3%	--	-3.7%	6.0%
ADWF[4]	0.45	--	4.7	2.23	0.45	--	4.5	2.33	0.0%	--	-4.4%	4.7%

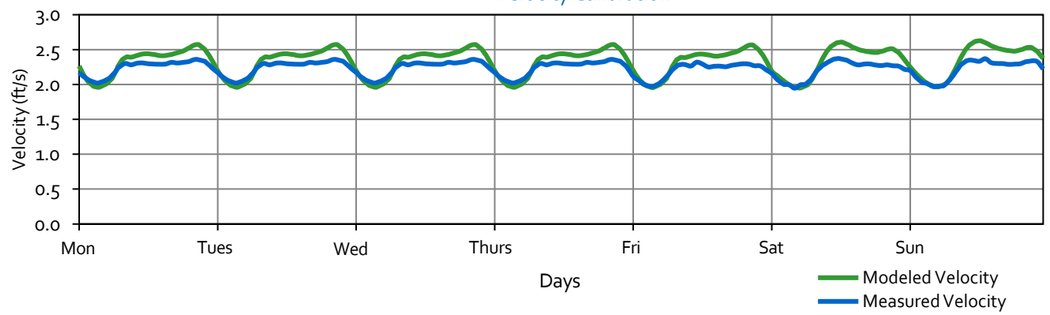
Notes:

1. Source: V&A Temporary Flow Monitoring Program
2. Peak flow is the hourly average hourly peak flow, which was derived based on the 15-minute flow data from V&A.
3. Percent Error = (Modeled - Measured) /Measured x 100
4. ADWF = (5xWeekday Average + 2xWeekend Average)/7

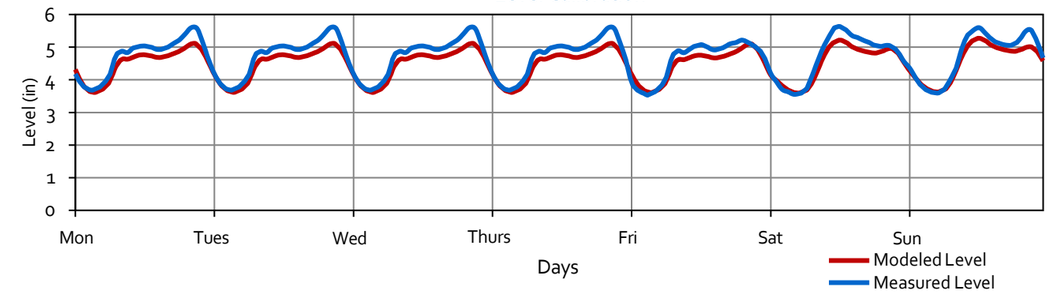
Flow Calibration



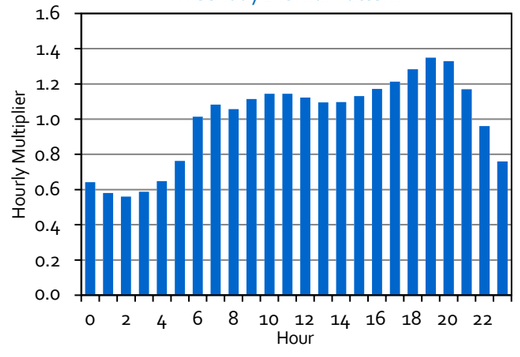
Velocity Calibration



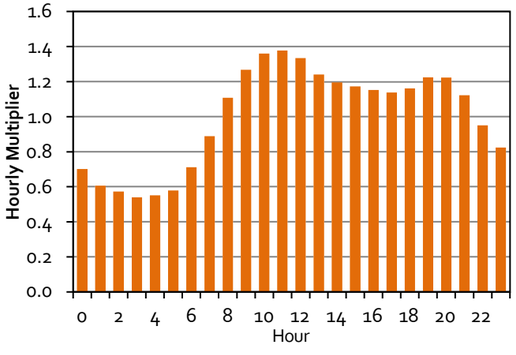
Level Calibration



Weekday Diurnal Pattern



Weekend Diurnal Pattern



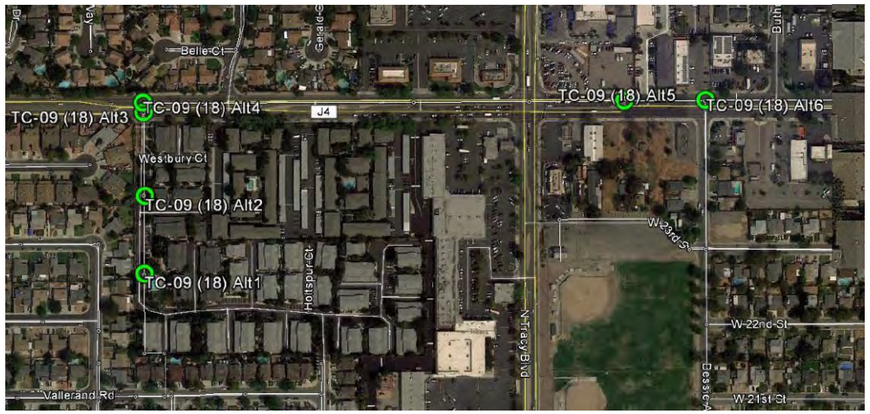
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Flow Monitoring Site TC-09, Dry Weather Flow Calibration

Location: Summergate Dr. & Westbury Ct.
Pipeline Diameter: 18"
City Manhole ID: 951
Model Pipe ID: 237

Flow Monitor Location





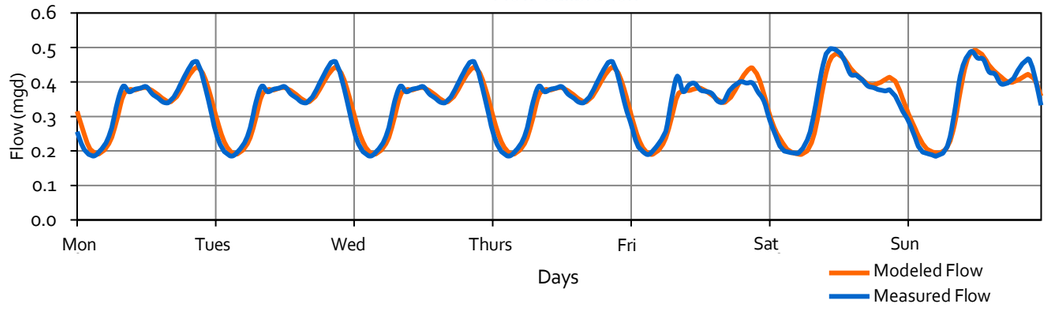
Model Calibration Summary

Day	Measured Data[1] Avg. Flow (mgd)	Peak Flow[2] (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Modeled Data Avg. Flow (mgd)	Peak Flow[2] (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Percent Error[3] Avg. Flow (%)	Peak Flow (%)	Avg. Level (%)	Avg. Vel. (%)
Mon.	0.33	0.46	5.3	1.19	0.33	0.44	5.51	1.11	0.0%	-3.0%	4.6%	-6.9%
Tues.	0.33	0.46	5.3	1.19	0.33	0.44	5.51	1.11	0.0%	-3.0%	4.6%	-6.9%
Wed.	0.33	0.46	5.3	1.19	0.33	0.44	5.51	1.11	0.0%	-3.0%	4.6%	-6.9%
Thur.	0.33	0.46	5.3	1.19	0.33	0.44	5.51	1.11	0.0%	-3.0%	4.6%	-6.9%
Fri.	0.33	0.42	5.2	1.20	0.33	0.44	5.49	1.11	-0.1%	5.6%	4.9%	-7.6%
Sat.	0.35	0.50	5.3	1.21	0.35	0.48	5.58	1.12	-0.1%	-3.2%	4.7%	-7.3%
Sun.	0.35	0.49	5.4	1.19	0.35	0.49	5.64	1.13	0.0%	0.1%	3.7%	-5.5%
Summary												
Weekday	0.33	--	5.3	1.19	0.33	--	5.5	1.11	0.0%	--	4.7%	-7.0%
Weekend	0.35	--	5.4	1.20	0.35	--	5.6	1.12	-0.1%	--	4.2%	-6.4%
ADWF[4]	0.34	--	5.3	1.19	0.34	--	5.5	1.11	-0.1%	--	4.5%	-6.8%

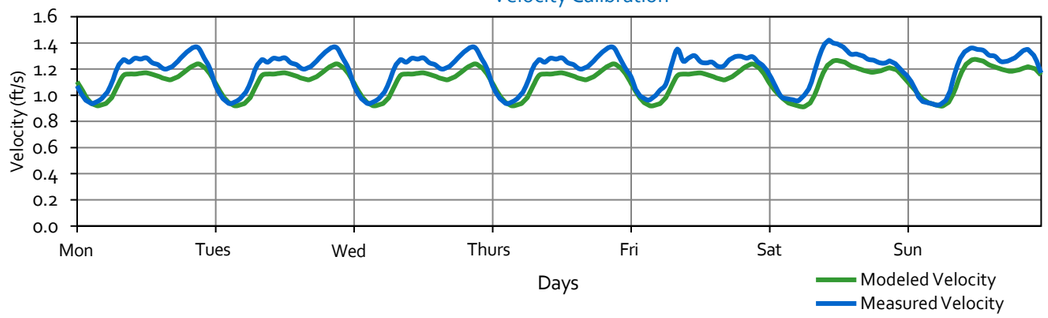
Notes:

1. Source: V&A Temporary Flow Monitoring Program
2. Peak flow is the hourly average hourly peak flow, which was derived based on the 15-minute flow data from V&A.
3. Percent Error = (Modeled - Measured) /Measured x 100
4. ADWF = (5xWeekday Average + 2xWeekend Average)/7

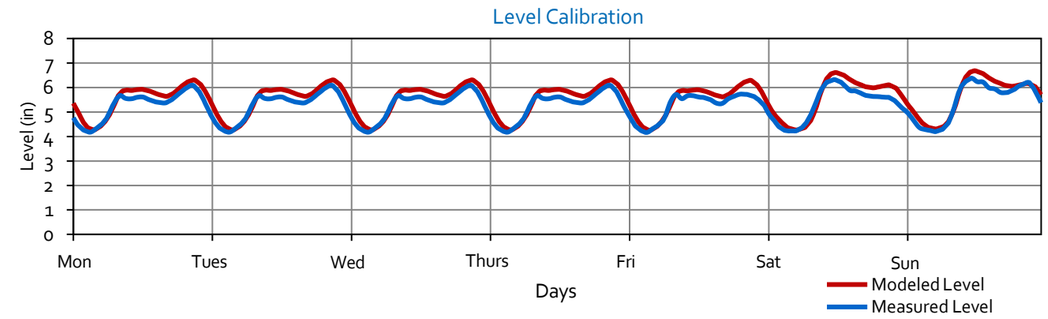
Flow Calibration



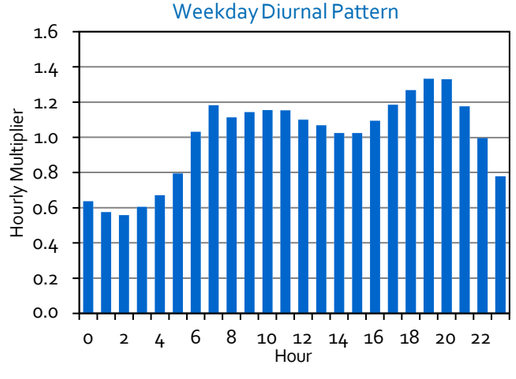
Velocity Calibration



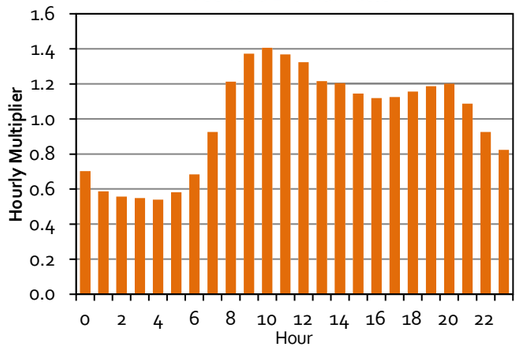
Level Calibration



Weekday Diurnal Pattern



Weekend Diurnal Pattern



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Flow Monitoring Site TC-10, Dry Weather Flow Calibration

Location: N Corral Hollow Rd. b/w Crohn Rd. & W 11th St.
Pipeline Diameter: 24"
City Manhole ID: 1819
Model Pipe ID: 861

Flow Monitor Location







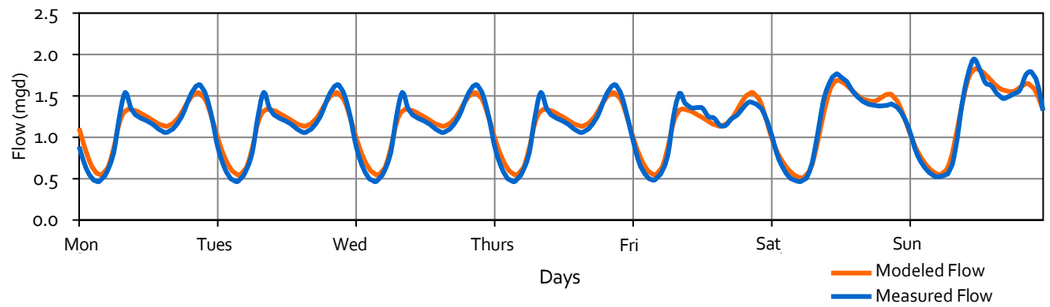
Model Calibration Summary

Day	Measured Data[1] Avg. Flow (mgd)	Peak Flow[2] (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Modeled Data Avg. Flow (mgd)	Peak Flow[2] (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Percent Error[3] Avg. Flow (%)	Peak Flow (%)	Avg. Level (%)	Avg. Vel. (%)
Mon.	1.10	1.63	8.5	1.64	1.13	1.53	8.00	1.87	2.3%	-6.2%	-5.8%	13.6%
Tues.	1.10	1.63	8.5	1.64	1.13	1.53	8.00	1.87	2.3%	-6.2%	-5.8%	13.6%
Wed.	1.10	1.63	8.5	1.64	1.13	1.53	8.00	1.87	2.3%	-6.2%	-5.8%	13.6%
Thur.	1.10	1.63	8.5	1.64	1.13	1.53	8.00	1.87	2.3%	-6.2%	-5.8%	13.6%
Fri.	1.12	1.53	8.6	1.64	1.13	1.53	8.00	1.87	0.8%	-0.1%	-7.0%	13.6%
Sat.	1.18	1.77	8.8	1.65	1.19	1.68	8.16	1.89	1.0%	-4.9%	-7.4%	14.2%
Sun.	1.27	1.95	9.2	1.67	1.29	1.82	8.48	1.94	1.2%	-6.4%	-8.1%	15.7%
Summary												
Weekday	1.11	--	8.5	1.64	1.13	--	8.0	1.87	2.0%	--	-6.0%	*13.6%*
Weekend	1.23	--	9.0	1.66	1.24	--	8.3	1.91	1.1%	--	-7.8%	*15.0%*
ADWF[4]	1.14	--	8.7	1.65	1.16	--	8.1	1.88	1.7%	--	-6.6%	*14.0%*

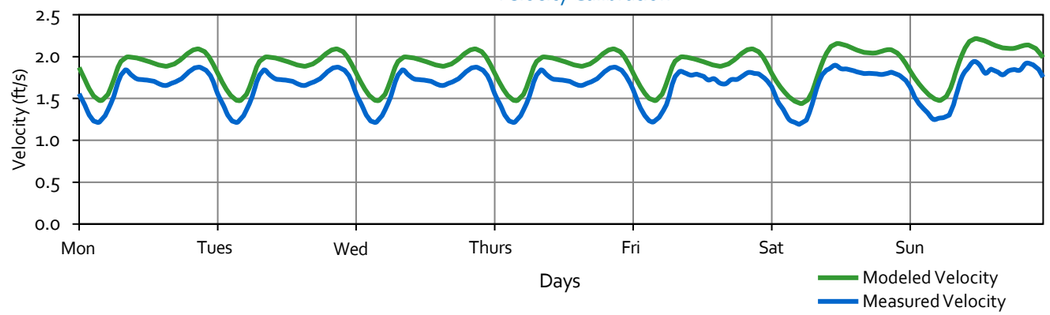
Notes:

1. Source: V&A Temporary Flow Monitoring Program
2. Peak flow is the hourly average hourly peak flow, which was derived based on the 15-minute flow data from V&A.
3. Percent Error = (Modeled - Measured) /Measured x 100
4. ADWF = (5xWeekday Average + 2xWeekend Average)/7

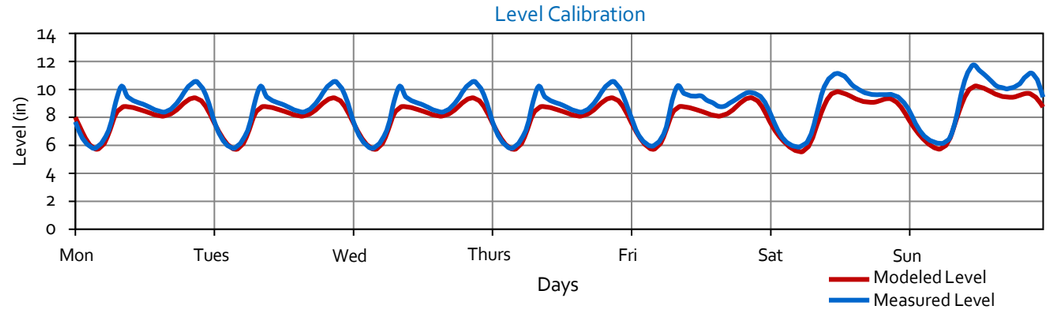
Flow Calibration



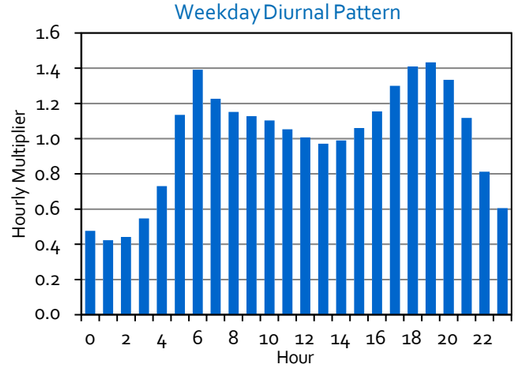
Velocity Calibration



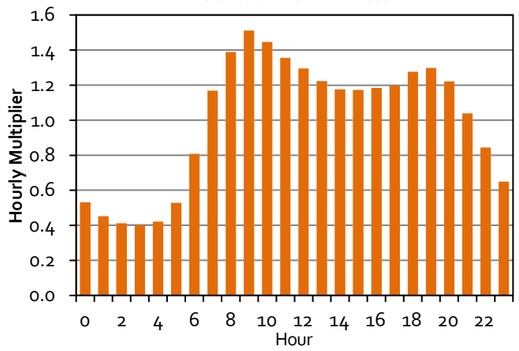
Level Calibration



Weekday Diurnal Pattern



Weekend Diurnal Pattern



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Flow Monitoring Site TC-11, Dry Weather Flow Calibration

Location: Sienna Park Dr. & Sycamore Pkwy.
Pipeline Diameter: 15"
City Manhole ID: 2955
Model Pipe ID: 3029

Flow Monitor Location







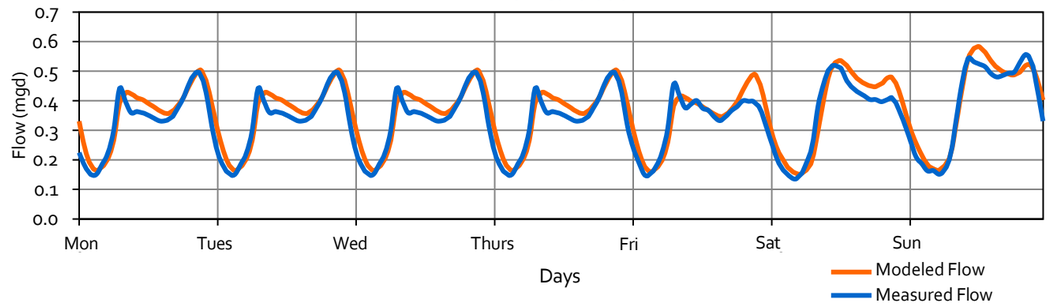
Model Calibration Summary

Day	Measured Data[1] Avg. Flow (mgd)	Measured Data[1] Peak Flow[2] (mgd)	Measured Data[1] Avg. Level (in)	Measured Data[1] Avg. Vel. (ft/s)	Modeled Data Avg. Flow (mgd)	Modeled Data Peak Flow[2] (mgd)	Modeled Data Avg. Level (in)	Modeled Data Avg. Vel. (ft/s)	Percent Error[3] Avg. Flow (%)	Percent Error[3] Peak Flow (%)	Percent Error[3] Avg. Level (%)	Percent Error[3] Avg. Vel. (%)
Mon.	0.33	0.49	2.9	3.06	0.36	0.50	3.16	2.85	6.6%	2.5%	10.0%	-6.6%
Tues.	0.33	0.49	2.9	3.06	0.36	0.50	3.16	2.85	6.6%	2.5%	10.0%	-6.6%
Wed.	0.33	0.49	2.9	3.06	0.36	0.50	3.16	2.85	6.6%	2.5%	10.0%	-6.6%
Thur.	0.33	0.49	2.9	3.06	0.36	0.50	3.16	2.85	6.6%	2.5%	10.0%	-6.6%
Fri.	0.33	0.46	2.9	3.03	0.35	0.49	3.11	2.83	5.2%	7.3%	8.7%	-6.6%
Sat.	0.35	0.52	2.9	3.08	0.37	0.54	3.20	2.87	6.6%	3.1%	9.8%	-6.8%
Sun.	0.39	0.56	3.1	3.14	0.40	0.58	3.33	2.94	4.1%	4.7%	8.3%	-6.6%
Summary												
Weekday	0.33	--	2.9	3.05	0.35	--	3.1	2.85	6.3%	--	9.7%	-6.6%
Weekend	0.37	--	3.0	3.11	0.39	--	3.3	2.90	5.3%	--	9.0%	-6.7%
ADWF[4]	0.34	--	2.9	3.07	0.36	--	3.2	2.86	6.0%	--	9.5%	-6.6%

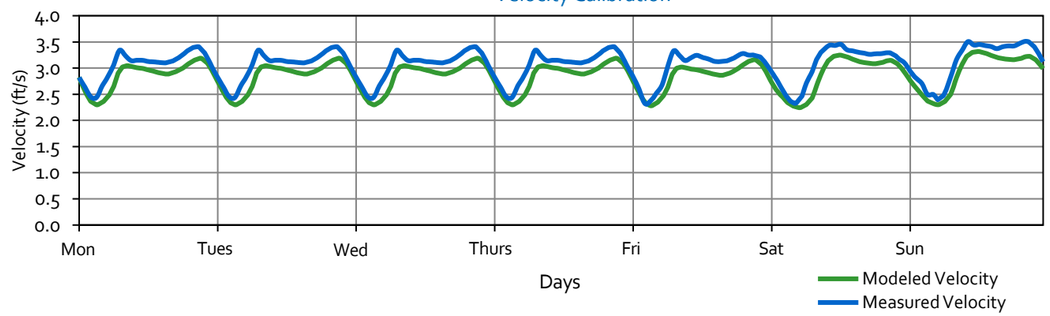
Notes:

1. Source: V&A Temporary Flow Monitoring Program
2. Peak flow is the hourly average hourly peak flow, which was derived based on the 15-minute flow data from V&A.
3. Percent Error = (Modeled - Measured) /Measured x 100
4. ADWF = (5xWeekday Average + 2xWeekend Average)/7

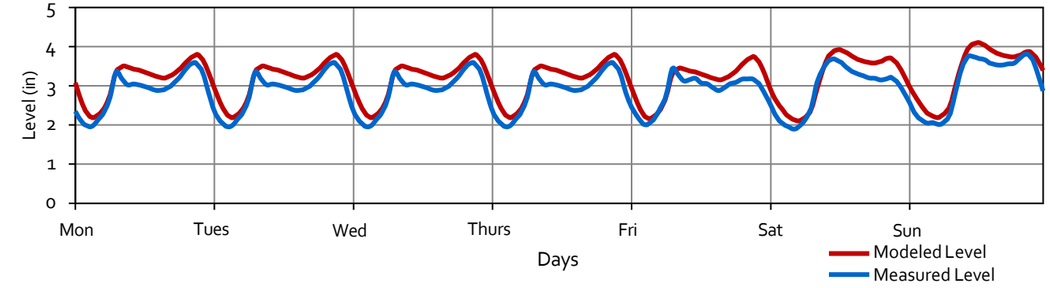
Flow Calibration



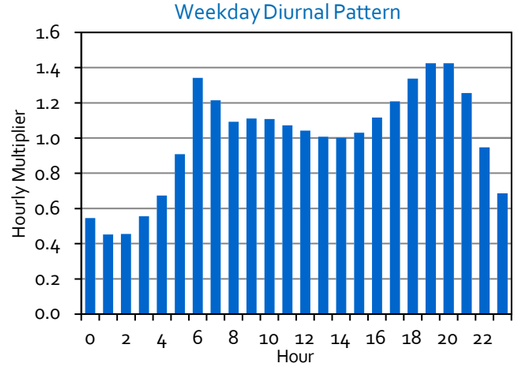
Velocity Calibration



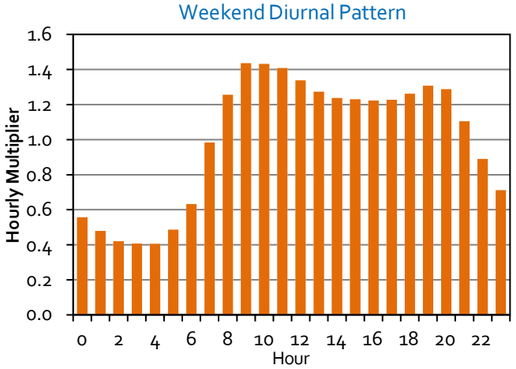
Level Calibration



Weekday Diurnal Pattern



Weekend Diurnal Pattern



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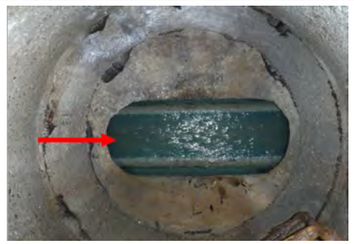
Flow Monitoring Site TC-12, Dry Weather Flow Calibration

Location: Leamon St. & Avila St.
Pipeline Diameter: 20.75"
City Manhole ID: 2382
Model Pipe ID: 2324

Flow Monitor Location







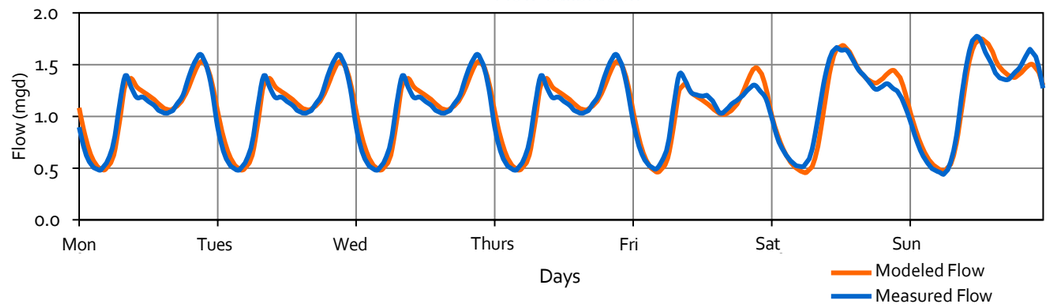
Model Calibration Summary

Day	Measured Data[1] Avg. Flow (mgd)	Peak Flow[2] (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Modeled Data Avg. Flow (mgd)	Peak Flow[2] (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Percent Error[3] Avg. Flow (%)	Peak Flow (%)	Avg. Level (%)	Avg. Vel. (%)
Mon.	1.06	1.60	4.3	4.54	1.07	1.53	5.57	3.16	0.8%	-4.4%	29.2%	-30.4%
Tues.	1.06	1.60	4.3	4.54	1.07	1.53	5.57	3.16	0.8%	-4.4%	29.2%	-30.4%
Wed.	1.06	1.60	4.3	4.54	1.07	1.53	5.57	3.16	0.8%	-4.4%	29.2%	-30.4%
Thur.	1.06	1.60	4.3	4.54	1.07	1.53	5.57	3.16	0.8%	-4.4%	29.2%	-30.4%
Fri.	1.04	1.41	4.2	4.54	1.03	1.47	5.46	3.12	-0.6%	4.1%	28.5%	-31.2%
Sat.	1.14	1.66	4.5	4.59	1.13	1.68	5.69	3.18	-0.5%	1.1%	27.4%	-30.6%
Sun.	1.17	1.76	4.5	4.58	1.18	1.75	5.81	3.22	0.2%	-0.9%	28.3%	-29.7%
Summary												
Weekday	1.06	--	4.3	4.54	1.06	--	5.5	3.15	0.5%	--	*29.1%*	*-30.5%*
Weekend	1.16	--	4.5	4.59	1.15	--	5.7	3.20	-0.2%	--	*27.9%*	*-30.2%*
ADWF[4]	1.09	--	4.4	4.55	1.09	--	5.6	3.17	0.3%	--	*28.7%*	*-30.4%*

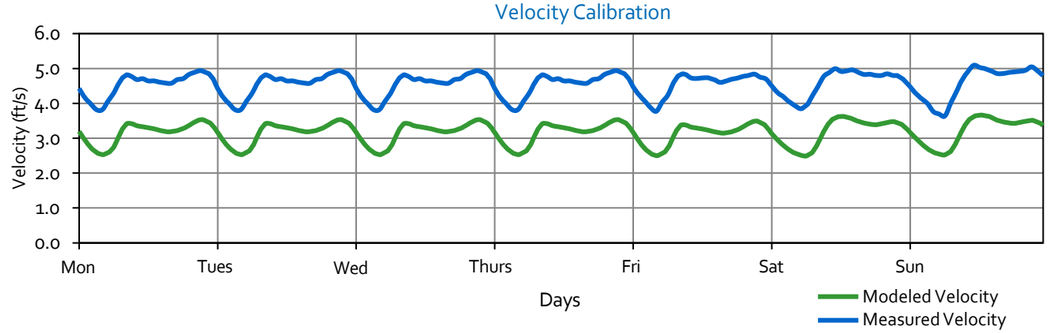
Notes:

1. Source: V&A Temporary Flow Monitoring Program
2. Peak flow is the hourly average hourly peak flow, which was derived based on the 15-minute flow data from V&A.
3. Percent Error = (Modeled - Measured) /Measured x 100
4. ADWF = (5xWeekday Average + 2xWeekend Average)/7

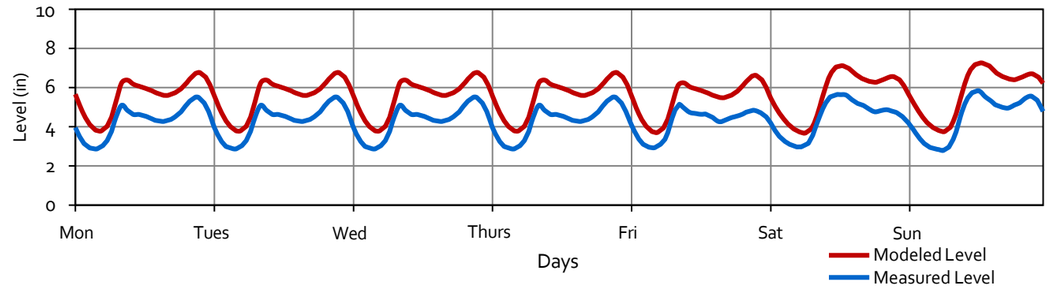
Flow Calibration



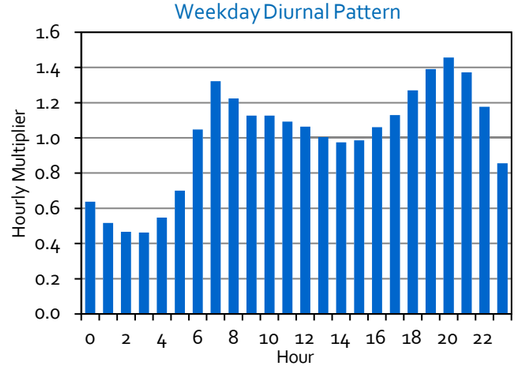
Velocity Calibration



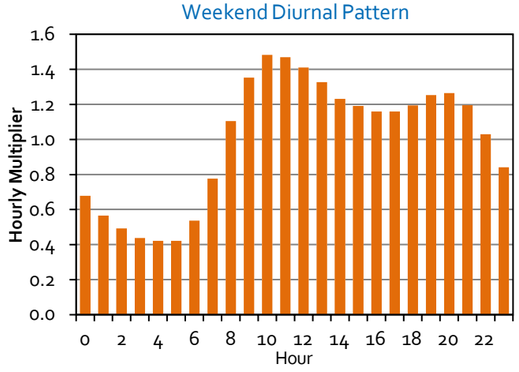
Level Calibration



Weekday Diurnal Pattern



Weekend Diurnal Pattern



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Flow Monitoring Site TC-13, Dry Weather Flow Calibration

Location: Along UPRR, e/o N MacArthur Dr & Krider Ct.
Pipeline Diameter: 18"
City Manhole ID: 1306
Model Pipe ID: 993

Flow Monitor Location







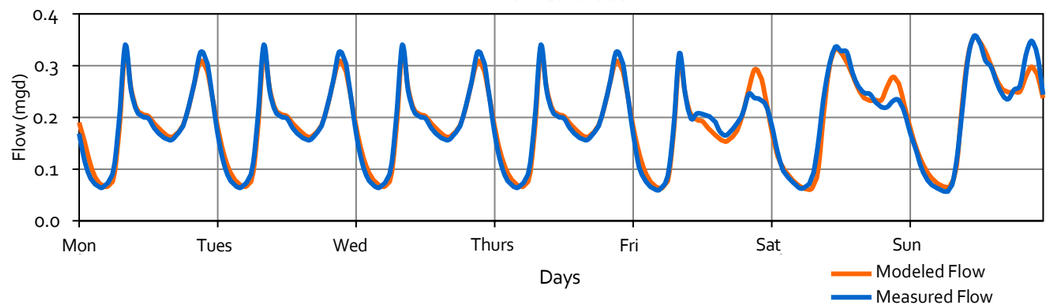
Model Calibration Summary

Day	Measured Data[1] Avg. Flow (mgd)	Measured Data[1] Peak Flow[2] (mgd)	Measured Data[1] Avg. Level (in)	Measured Data[1] Avg. Vel. (ft/s)	Modeled Data Avg. Flow (mgd)	Modeled Data Peak Flow[2] (mgd)	Modeled Data Avg. Level (in)	Modeled Data Avg. Vel. (ft/s)	Percent Error[3] Avg. Flow (%)	Percent Error[3] Peak Flow (%)	Percent Error[3] Avg. Level (%)	Percent Error[3] Avg. Vel. (%)
Mon.	0.19	0.34	3.3	1.21	0.19	0.33	3.20	1.30	0.6%	-3.8%	-3.7%	7.1%
Tues.	0.19	0.34	3.3	1.21	0.19	0.33	3.20	1.30	0.6%	-3.8%	-3.7%	7.1%
Wed.	0.19	0.34	3.3	1.21	0.19	0.33	3.20	1.30	0.6%	-3.8%	-3.7%	7.1%
Thur.	0.19	0.34	3.3	1.21	0.19	0.33	3.20	1.30	0.6%	-3.8%	-3.7%	7.1%
Fri.	0.18	0.32	3.3	1.17	0.18	0.31	3.13	1.27	0.8%	-4.1%	-5.1%	9.0%
Sat.	0.20	0.34	3.4	1.24	0.20	0.33	3.26	1.32	-0.5%	-1.1%	-5.2%	6.6%
Sun.	0.22	0.36	3.5	1.29	0.21	0.36	3.36	1.36	-0.3%	-0.3%	-2.9%	5.4%
Summary												
Weekday	0.18	--	3.3	1.20	0.19	--	3.2	1.29	0.6%	--	-4.0%	7.5%
Weekend	0.21	--	3.4	1.26	0.21	--	3.3	1.34	-0.4%	--	-4.0%	6.0%
ADWF[4]	0.19	--	3.4	1.22	0.19	--	3.2	1.31	0.3%	--	-4.0%	7.0%

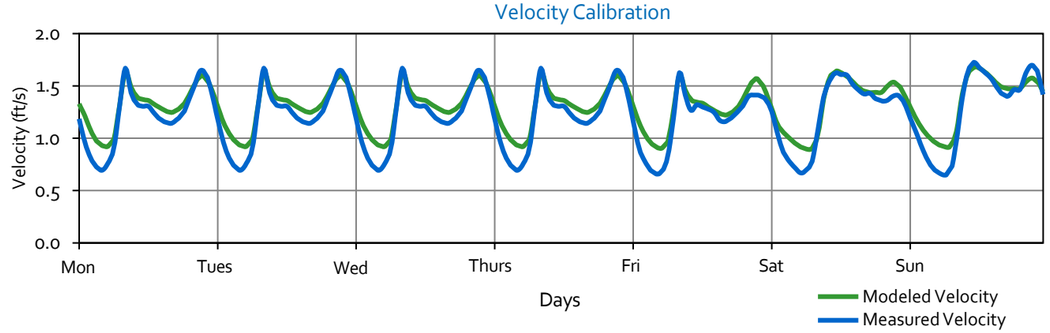
Notes:

1. Source: V&A Temporary Flow Monitoring Program
2. Peak flow is the hourly average hourly peak flow, which was derived based on the 15-minute flow data from V&A.
3. Percent Error = (Modeled - Measured) /Measured x 100
4. ADWF = (5xWeekday Average + 2xWeekend Average)/7

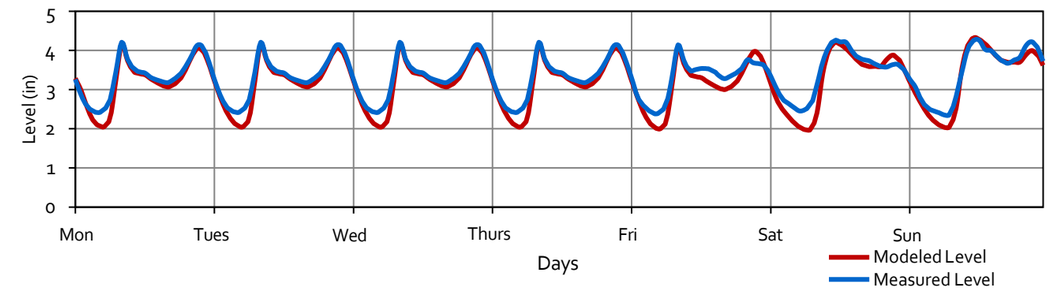
Flow Calibration



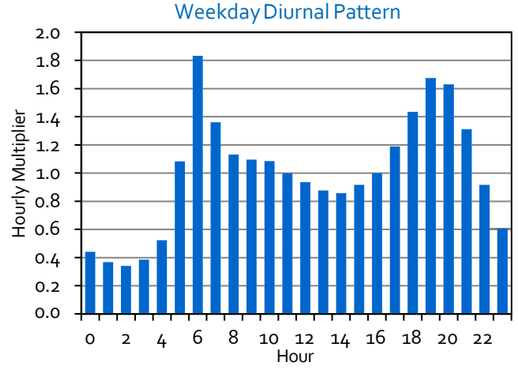
Velocity Calibration



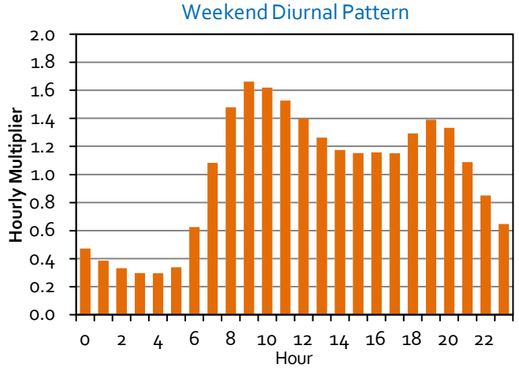
Level Calibration



Weekday Diurnal Pattern



Weekend Diurnal Pattern

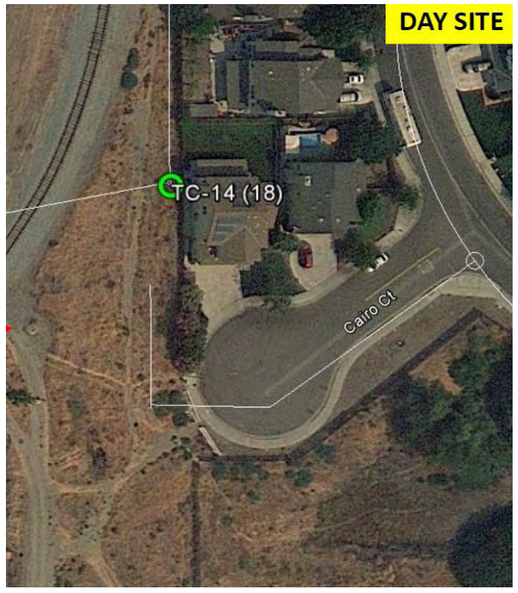


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Flow Monitoring Site TC-14, Dry Weather Flow Calibration

Location: e/o De Bord Dr. & Cairo Ct.
Pipeline Diameter: 18"
City Manhole ID: 805
Model Pipe ID: 1630

Flow Monitor Location





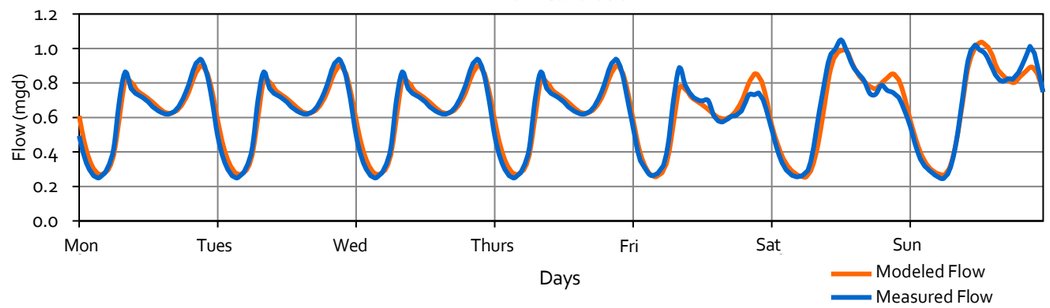
Model Calibration Summary

Day	Measured Data[1] Avg. Flow (mgd)	Measured Data[1] Peak Flow[2] (mgd)	Measured Data[1] Avg. Level (in)	Measured Data[1] Avg. Vel. (ft/s)	Modeled Data Avg. Flow (mgd)	Modeled Data Peak Flow[2] (mgd)	Modeled Data Avg. Level (in)	Modeled Data Avg. Vel. (ft/s)	Percent Error[3] Avg. Flow (%)	Percent Error[3] Peak Flow (%)	Percent Error[3] Avg. Level (%)	Percent Error[3] Avg. Vel. (%)
Mon.	0.62	0.94	6.0	1.86	0.63	0.90	5.68	1.97	0.6%	-4.2%	-5.9%	5.7%
Tues.	0.62	0.94	6.0	1.86	0.63	0.90	5.68	1.97	0.6%	-4.2%	-5.9%	5.7%
Wed.	0.62	0.94	6.0	1.86	0.63	0.90	5.68	1.97	0.6%	-4.2%	-5.9%	5.7%
Thur.	0.62	0.94	6.0	1.86	0.63	0.90	5.68	1.97	0.6%	-4.2%	-5.9%	5.7%
Fri.	0.59	0.89	6.1	1.76	0.60	0.85	5.54	1.94	0.8%	-4.2%	-9.7%	10.0%
Sat.	0.66	1.05	6.4	1.78	0.66	0.99	5.78	1.98	0.2%	-5.9%	-9.0%	11.1%
Sun.	0.69	1.02	6.4	1.85	0.69	1.03	5.92	2.01	0.3%	1.5%	-6.8%	8.7%
Summary												
Weekday	0.62	--	6.1	1.84	0.62	--	5.7	1.96	0.7%	--	-6.7%	6.5%
Weekend	0.67	--	6.4	1.81	0.67	--	5.9	1.99	0.2%	--	-7.9%	9.9%
ADWF[4]	0.63	--	6.1	1.84	0.64	--	5.7	1.97	0.5%	--	-7.1%	7.5%

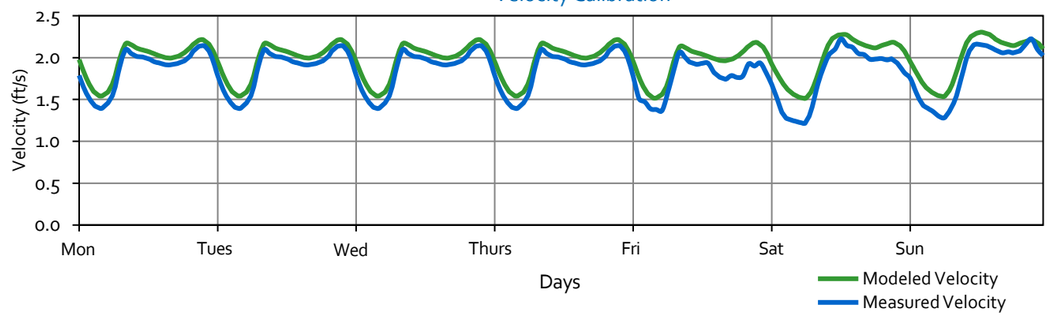
Notes:

1. Source: V&A Temporary Flow Monitoring Program
2. Peak flow is the hourly average hourly peak flow, which was derived based on the 15-minute flow data from V&A.
3. Percent Error = (Modeled - Measured) /Measured x 100
4. ADWF = (5xWeekday Average + 2xWeekend Average)/7

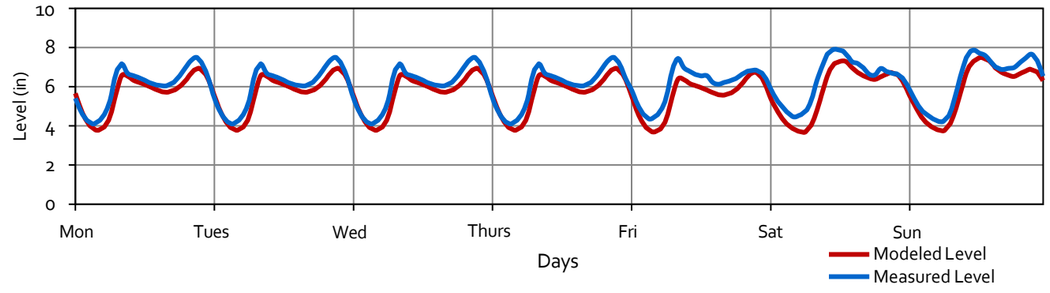
Flow Calibration



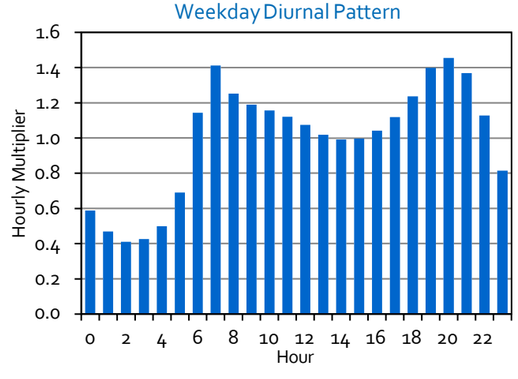
Velocity Calibration



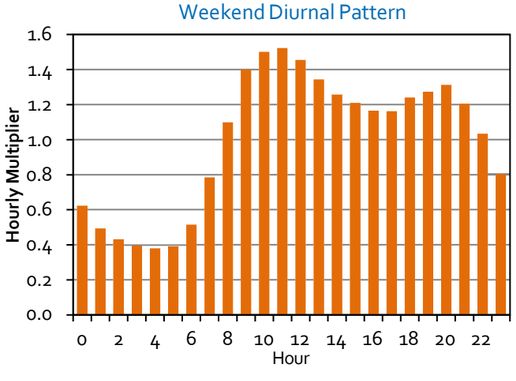
Level Calibration



Weekday Diurnal Pattern



Weekend Diurnal Pattern



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Flow Monitoring Site TC-15, Dry Weather Flow Calibration

Location: N Corral Hollow Rd. & Alegre Dr.
Pipeline Diameter: 21.5"
City Manhole ID: 2838
Model Pipe ID: 3608

Flow Monitor Location

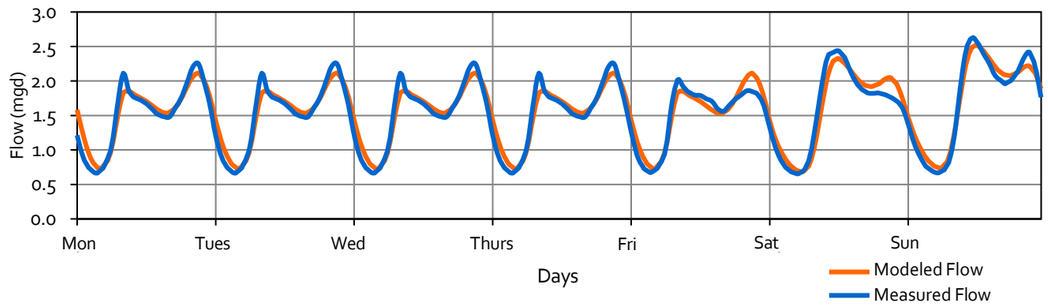
Model Calibration Summary

Day	Measured Data[1] Avg. Flow (mgd)	Measured Data[1] Peak Flow[2] (mgd)	Measured Data[1] Avg. Level (in)	Measured Data[1] Avg. Vel. (ft/s)	Modeled Data Avg. Flow (mgd)	Modeled Data Peak Flow[2] (mgd)	Modeled Data Avg. Level (in)	Modeled Data Avg. Vel. (ft/s)	Percent Error[3] Avg. Flow (%)	Percent Error[3] Peak Flow (%)	Percent Error[3] Avg. Level (%)	Percent Error[3] Avg. Vel. (%)
Mon.	1.51	2.25	7.1	3.11	1.53	2.11	7.83	2.84	1.2%	-6.3%	9.5%	-8.9%
Tues.	1.51	2.25	7.1	3.11	1.53	2.11	7.83	2.84	1.2%	-6.3%	9.5%	-8.9%
Wed.	1.51	2.25	7.1	3.11	1.53	2.11	7.83	2.84	1.2%	-6.3%	9.5%	-8.9%
Thur.	1.51	2.25	7.1	3.11	1.53	2.11	7.83	2.84	1.2%	-6.3%	9.5%	-8.9%
Fri.	1.50	2.02	7.1	3.12	1.53	2.11	7.81	2.83	1.6%	4.7%	9.9%	-9.0%
Sat.	1.59	2.44	7.3	3.13	1.61	2.32	8.00	2.86	1.6%	-4.6%	9.4%	-8.6%
Sun.	1.72	2.63	7.7	3.17	1.74	2.52	8.33	2.93	1.1%	-4.2%	8.6%	-7.6%
Summary												
Weekday	1.51	--	7.1	3.11	1.53	--	7.8	2.84	1.3%	--	9.6%	-8.9%
Weekend	1.66	--	7.5	3.15	1.68	--	8.2	2.89	1.4%	--	9.0%	-8.1%
ADWF[4]	1.55	--	7.2	3.12	1.57	--	7.9	2.85	1.3%	--	9.4%	-8.7%

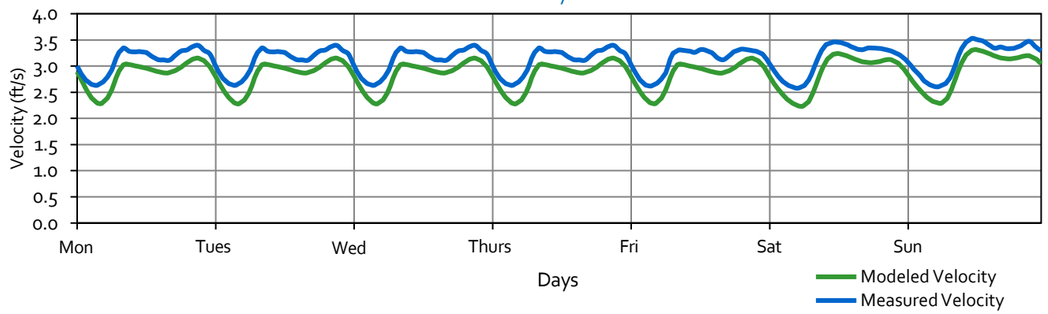
Notes:

1. Source: V&A Temporary Flow Monitoring Program
2. Peak flow is the hourly average hourly peak flow, which was derived based on the 15-minute flow data from V&A.
3. Percent Error = (Modeled - Measured) /Measured x 100
4. ADWF = (5xWeekday Average + 2xWeekend Average)/7

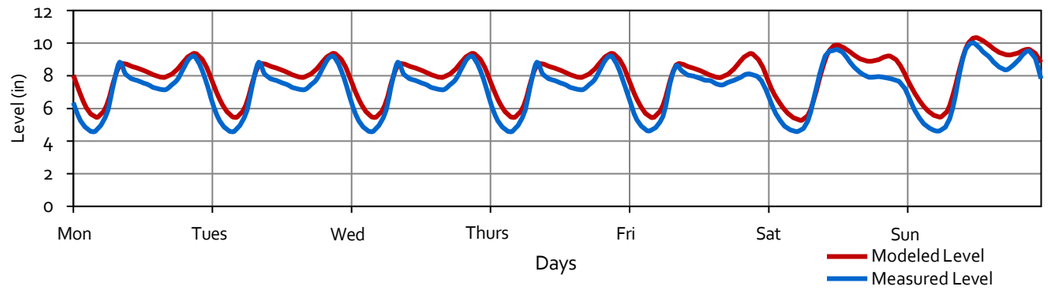
Flow Calibration



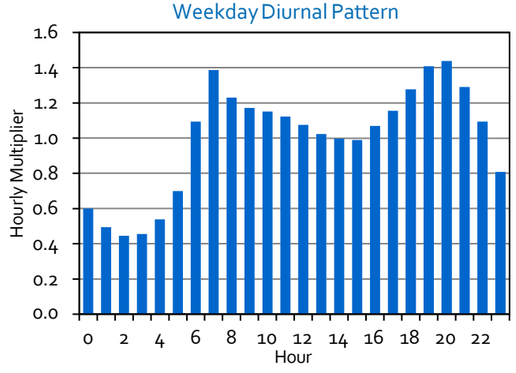
Velocity Calibration



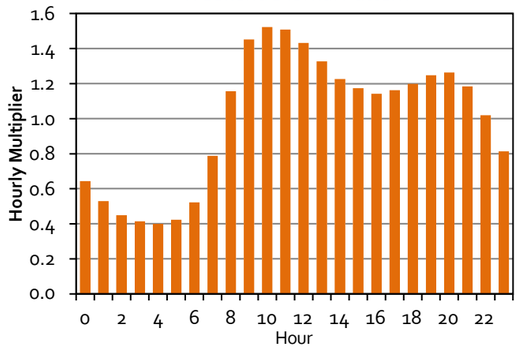
Level Calibration



Weekday Diurnal Pattern



Weekend Diurnal Pattern



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Flow Monitoring Site TC-16, Dry Weather Flow Calibration

Location: W 23rd St. & Bessie Ave.
Pipeline Diameter: 12"
City Manhole ID: 1023
Model Pipe ID: 2062

Flow Monitor Location

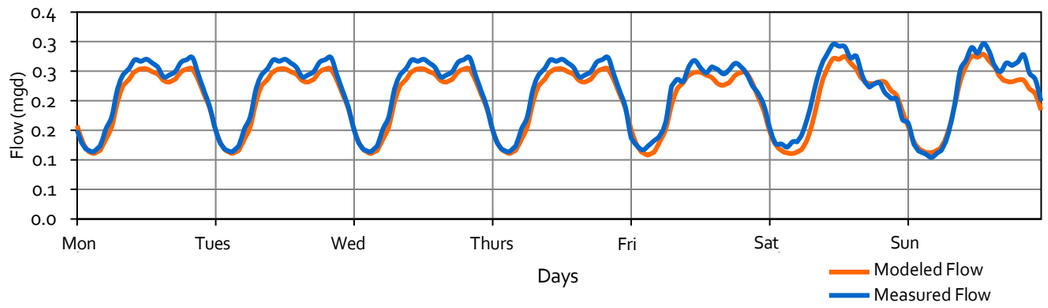
Model Calibration Summary

Day	Measured Data[1] Avg. Flow (mgd)	Measured Data[1] Peak Flow[2] (mgd)	Measured Data[1] Avg. Level (in)	Measured Data[1] Avg. Vel. (ft/s)	Modeled Data Avg. Flow (mgd)	Modeled Data Peak Flow[2] (mgd)	Modeled Data Avg. Level (in)	Modeled Data Avg. Vel. (ft/s)	Percent Error[3] Avg. Flow (%)	Percent Error[3] Peak Flow (%)	Percent Error[3] Avg. Level (%)	Percent Error[3] Avg. Vel. (%)
Mon.	0.22	0.27	5.7	0.89	0.20	0.25	5.80	0.83	-5.3%	-7.0%	1.3%	-6.4%
Tues.	0.22	0.27	5.7	0.89	0.20	0.25	5.80	0.83	-5.3%	-7.0%	1.3%	-6.4%
Wed.	0.22	0.27	5.7	0.89	0.20	0.25	5.80	0.83	-5.3%	-7.0%	1.3%	-6.4%
Thur.	0.22	0.27	5.7	0.89	0.20	0.25	5.80	0.83	-5.3%	-7.0%	1.3%	-6.4%
Fri.	0.21	0.27	5.7	0.88	0.20	0.25	5.72	0.83	-5.3%	-7.6%	0.9%	-6.2%
Sat.	0.21	0.30	5.6	0.88	0.20	0.28	5.69	0.82	-5.5%	-6.9%	0.9%	-6.6%
Sun.	0.21	0.30	5.6	0.88	0.20	0.28	5.74	0.82	-5.3%	-6.1%	1.7%	-6.4%
Summary												
Weekday	0.22	--	5.7	0.88	0.20	--	5.8	0.83	-5.3%	--	1.2%	-6.3%
Weekend	0.21	--	5.6	0.88	0.20	--	5.7	0.82	-5.4%	--	1.3%	-6.5%
ADWF[4]	0.21	--	5.7	0.88	0.20	--	5.8	0.83	-5.3%	--	1.2%	-6.4%

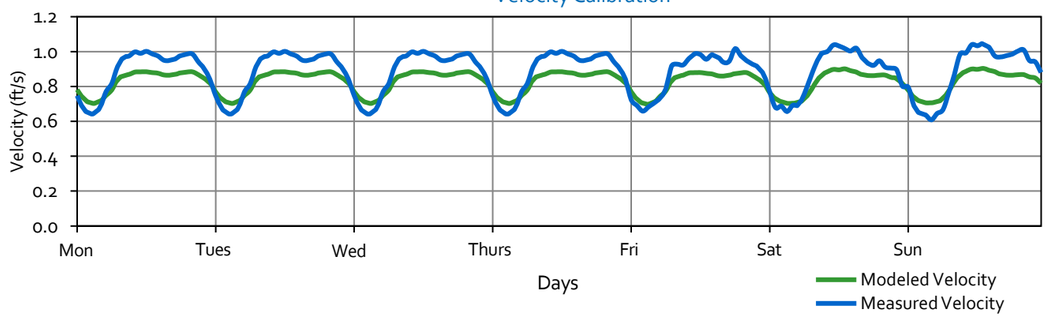
Notes:

1. Source: V&A Temporary Flow Monitoring Program
2. Peak flow is the hourly average hourly peak flow, which was derived based on the 15-minute flow data from V&A.
3. Percent Error = (Modeled - Measured) /Measured x 100
4. ADWF = (5xWeekday Average + 2xWeekend Average)/7

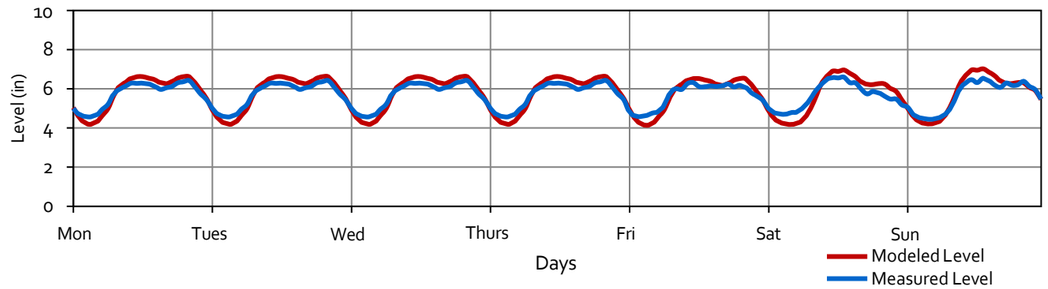
Flow Calibration



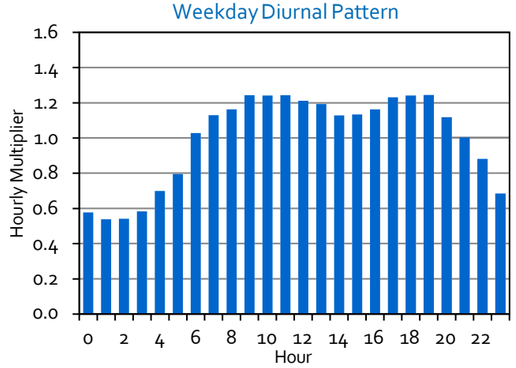
Velocity Calibration



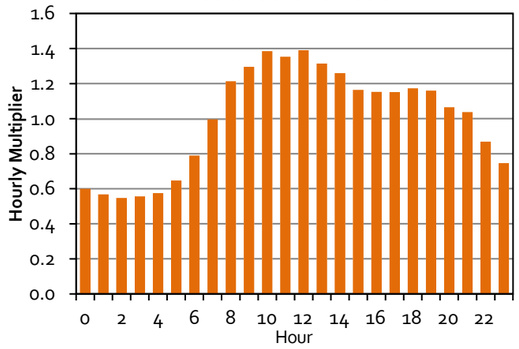
Level Calibration



Weekday Diurnal Pattern



Weekend Diurnal Pattern

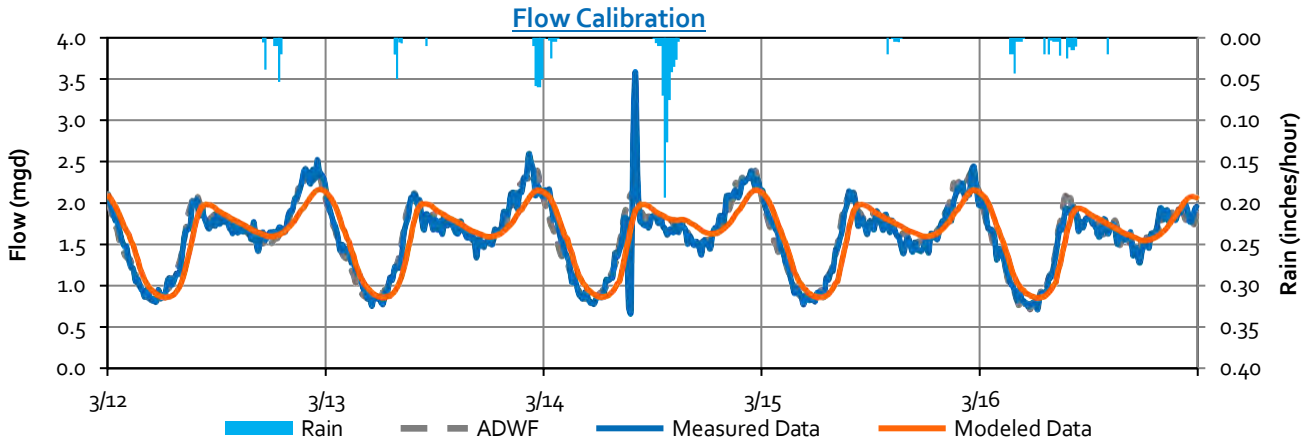


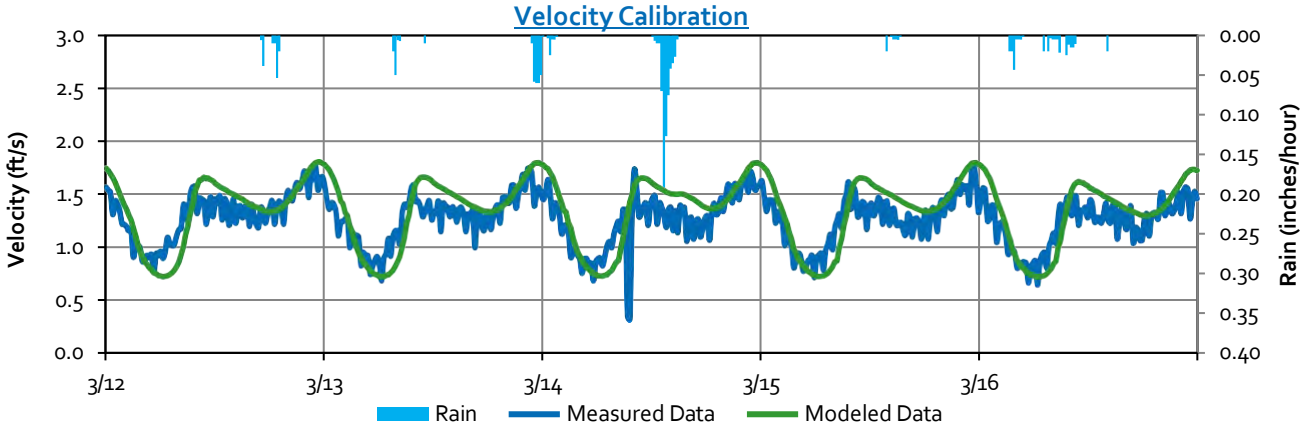
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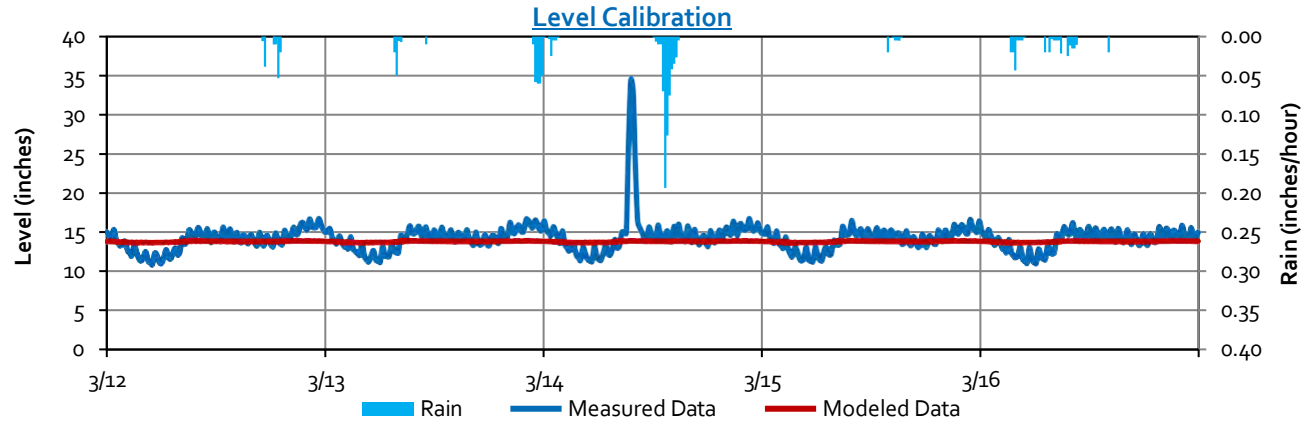
Appendix D

WET WEATHER FLOW CALIBRATION SHEETS

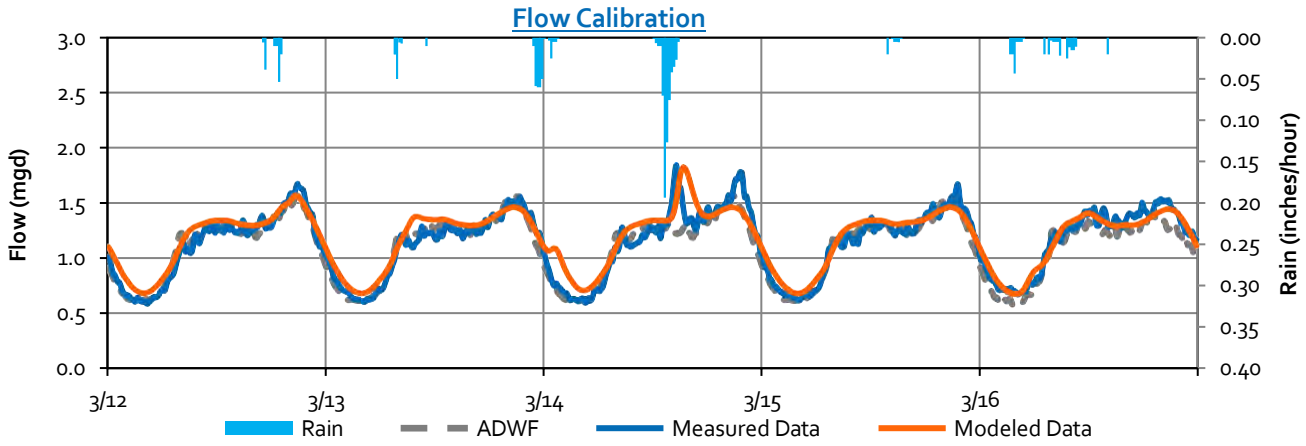
Flow Monitoring Site TC-01 Wet Weather Calibration
Location: E Larch Rd. & Spurline RR
Pipeline diameter: 24.5"
City Manhole ID: 2068
Model Pipe ID: 2198
Silt Level at Site: 0.5"

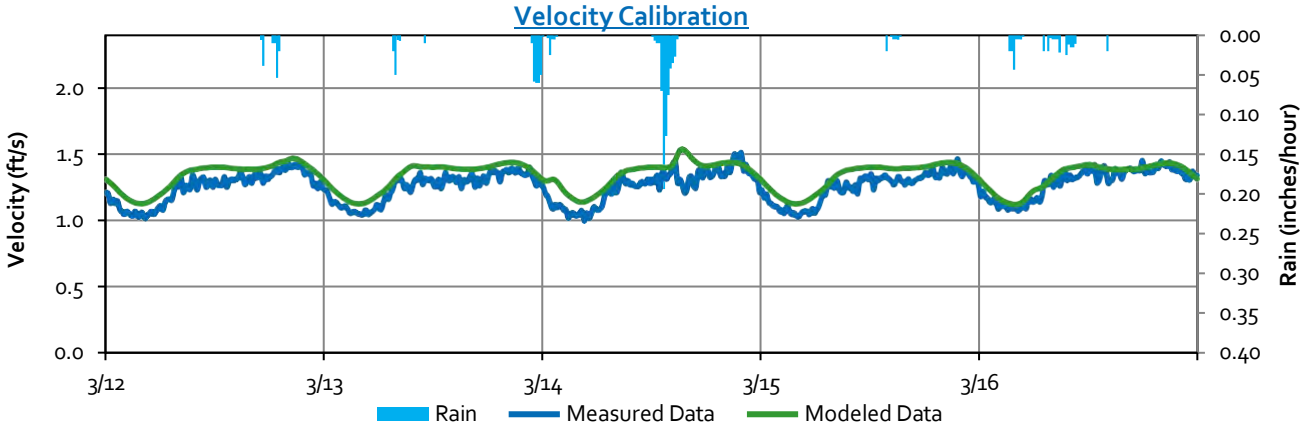


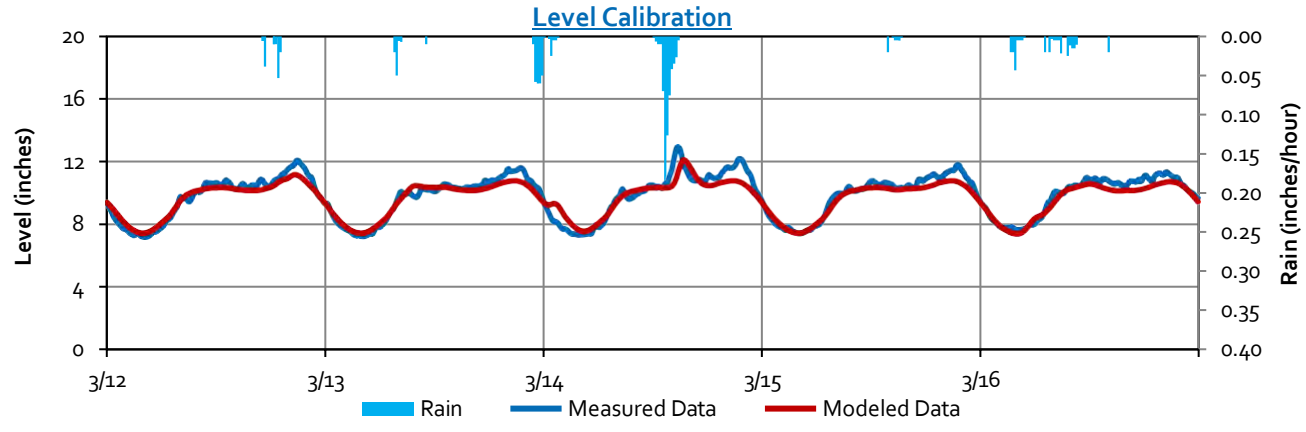




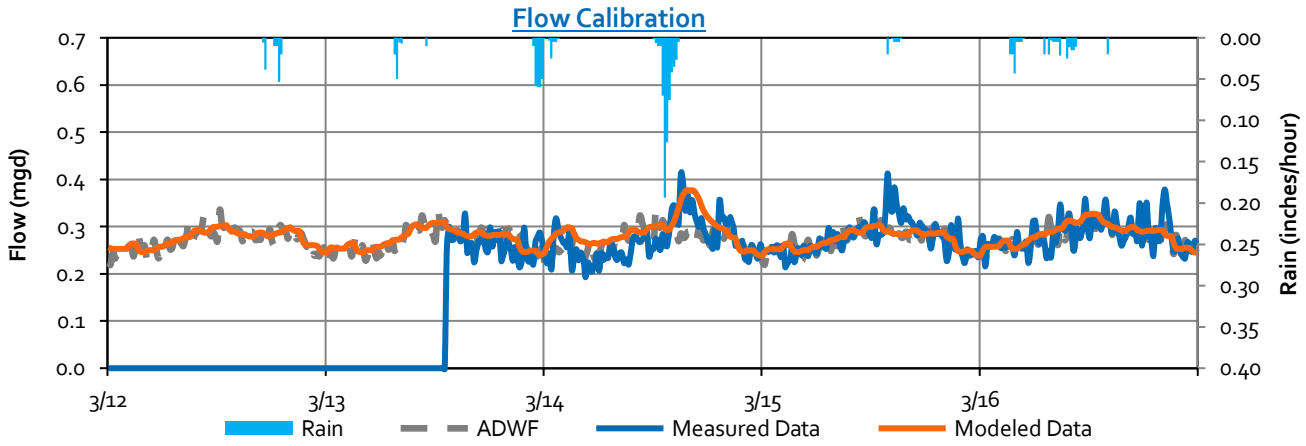
Flow Monitoring Site TC-02 Wet Weather Calibration
Location: E Grant Line Rd. b/w Colony Dr. & Entrada Way
Pipeline diameter: 29.75"
City Manhole ID: 777
Model Pipe ID: 470
Silt Level at Site: 0.5"

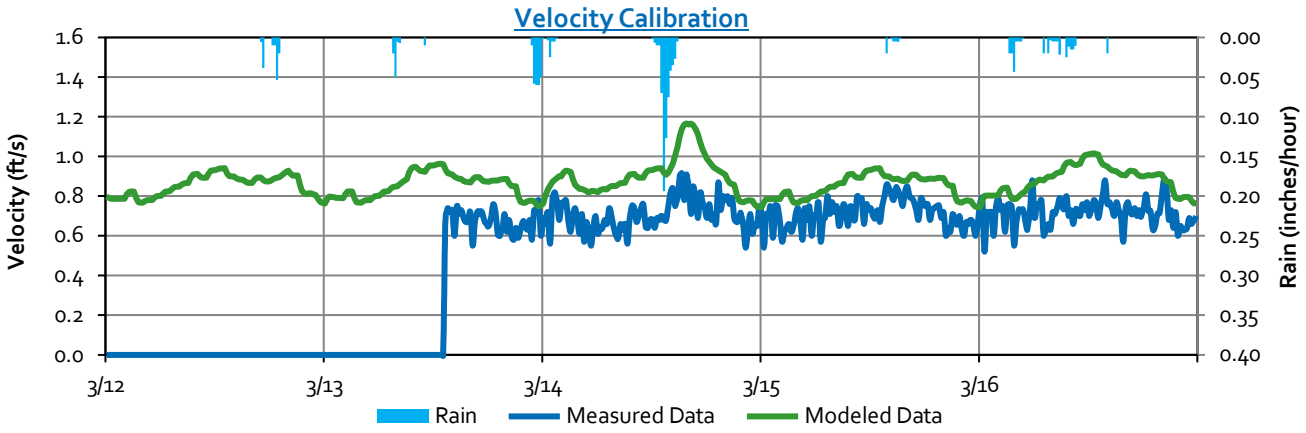


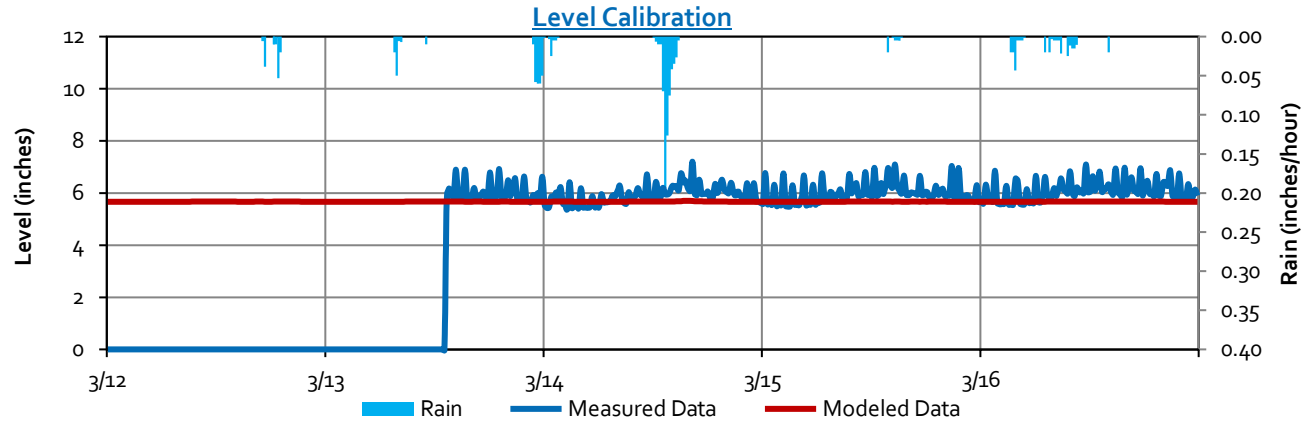




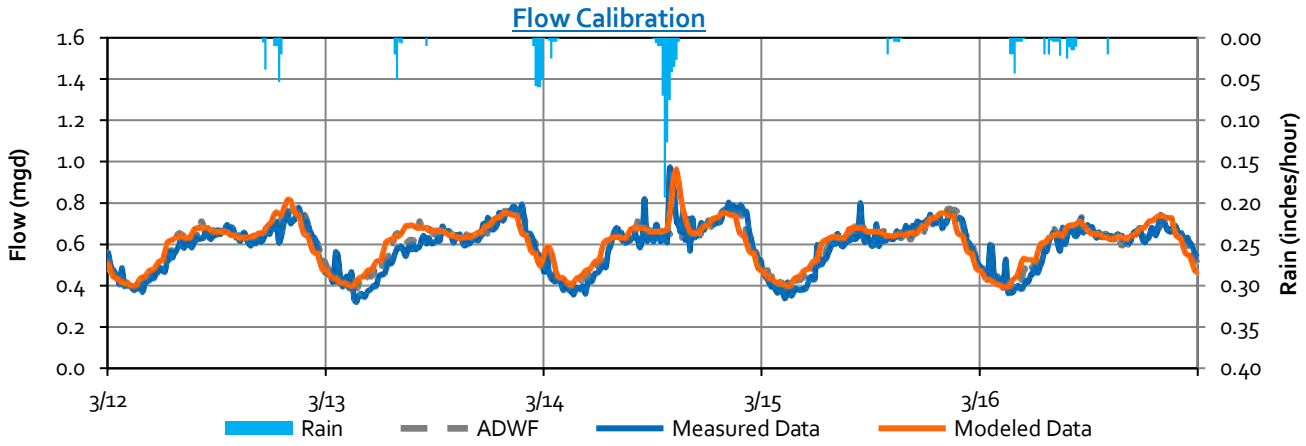
Flow Monitoring Site TC-03 Wet Weather Calibration
Location: N MacArthur Dr. n/o Interstate 205
Pipeline diameter: 24"
City Manhole ID:
Model Pipe ID: CDT-719
Silt Level at Site: 0.5"

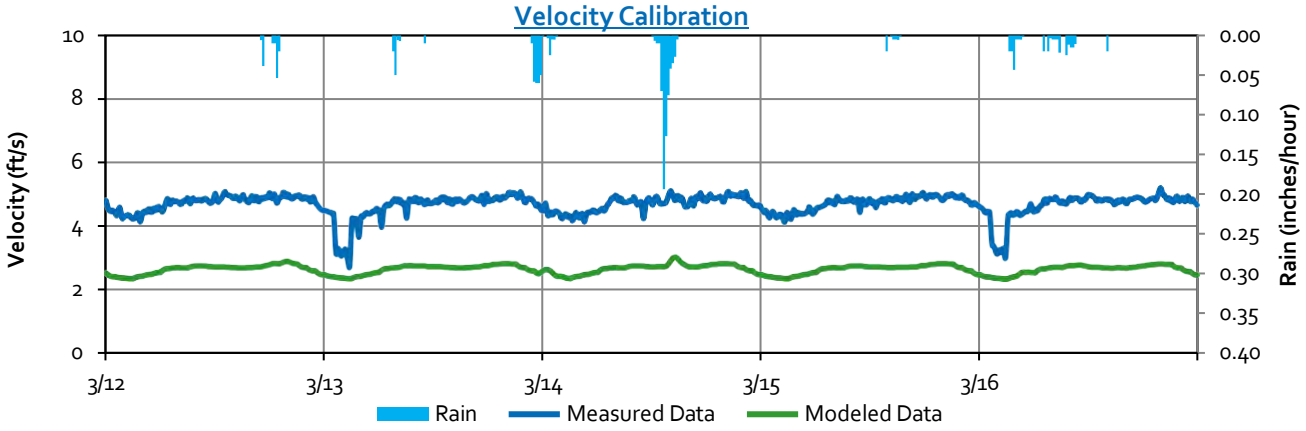


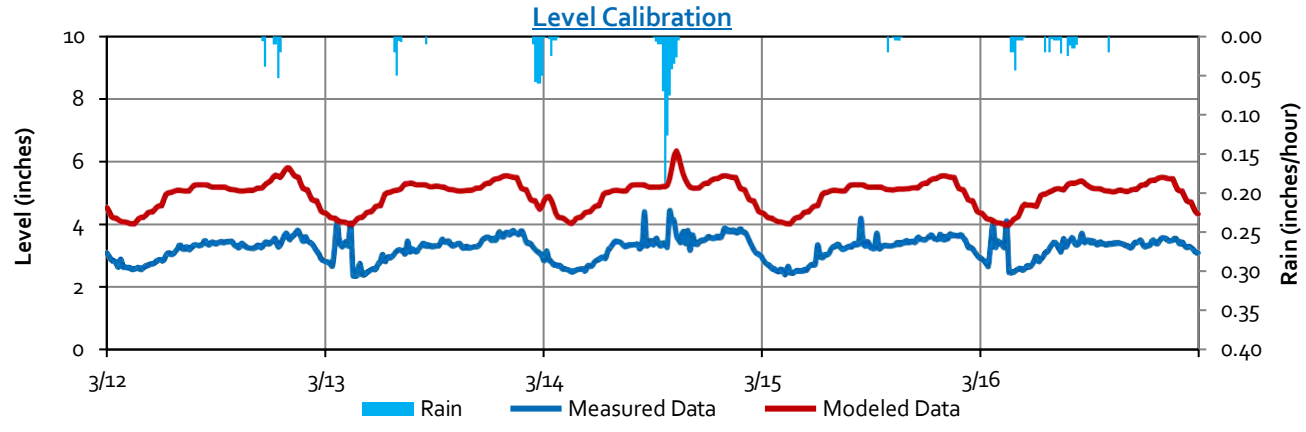




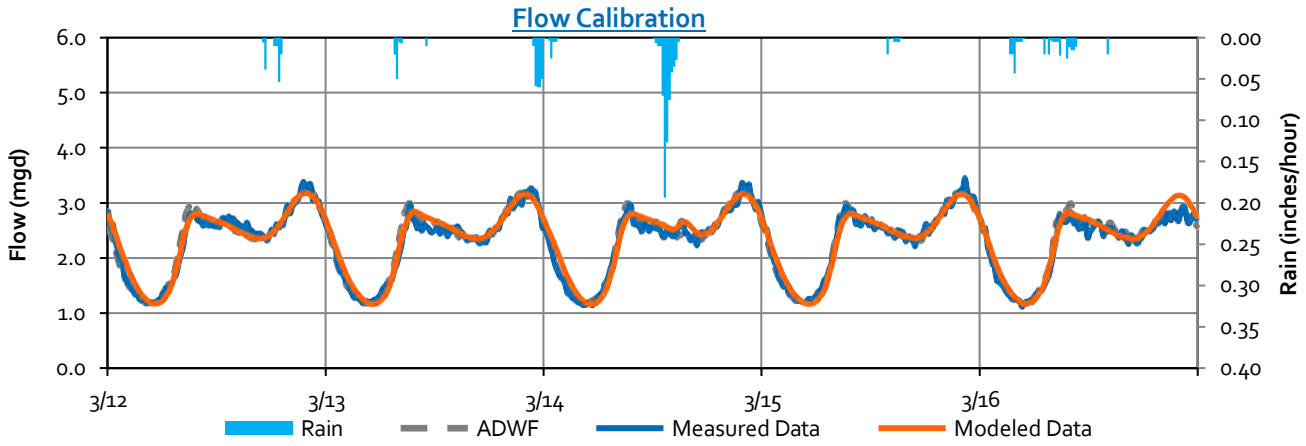
Flow Monitoring Site TC-04 Wet Weather Calibration
Location: N Tracy Blvd. n/o Interstate 205
Pipeline diameter: 15"
City Manhole ID: 1009
Model Pipe ID: 157
Silt Level at Site: none"

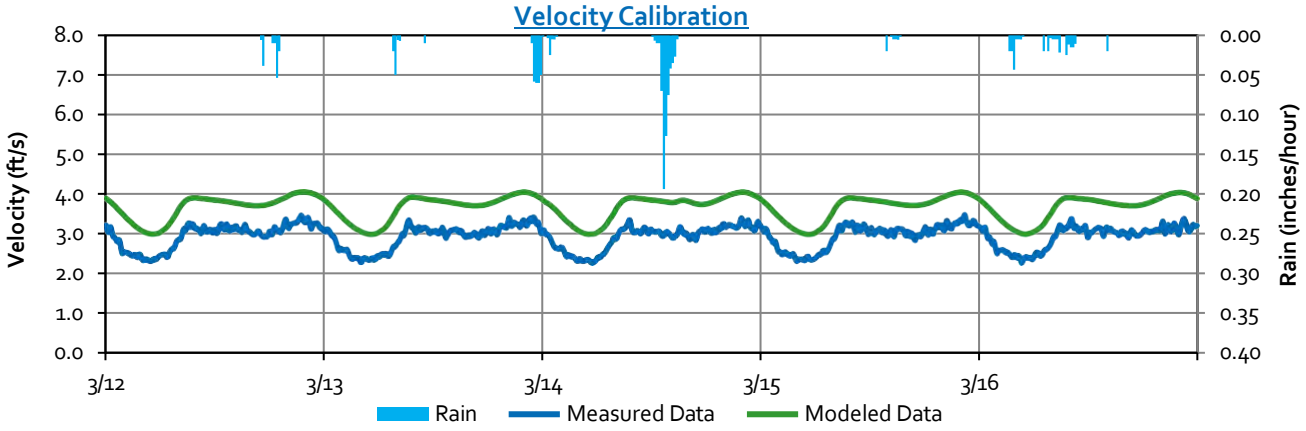


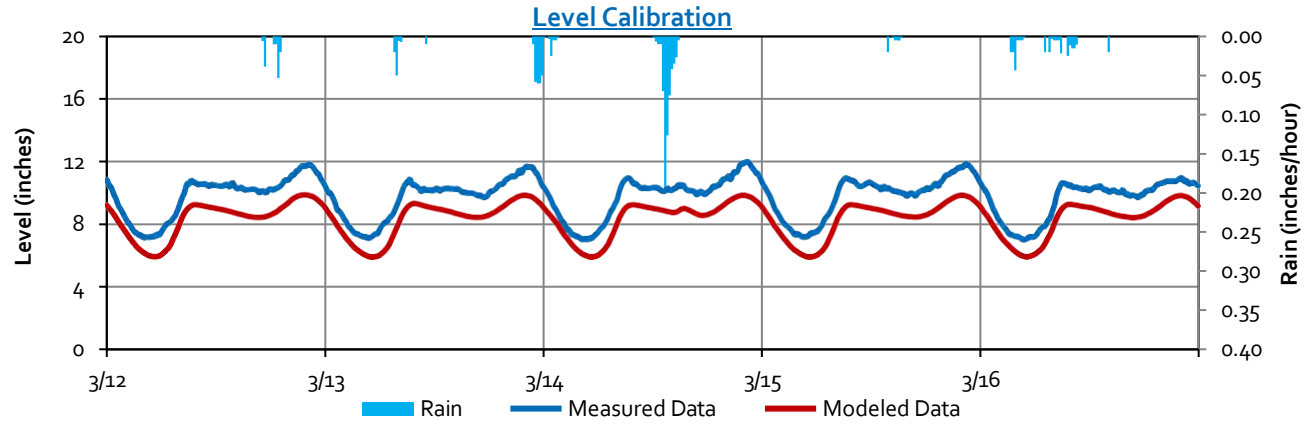




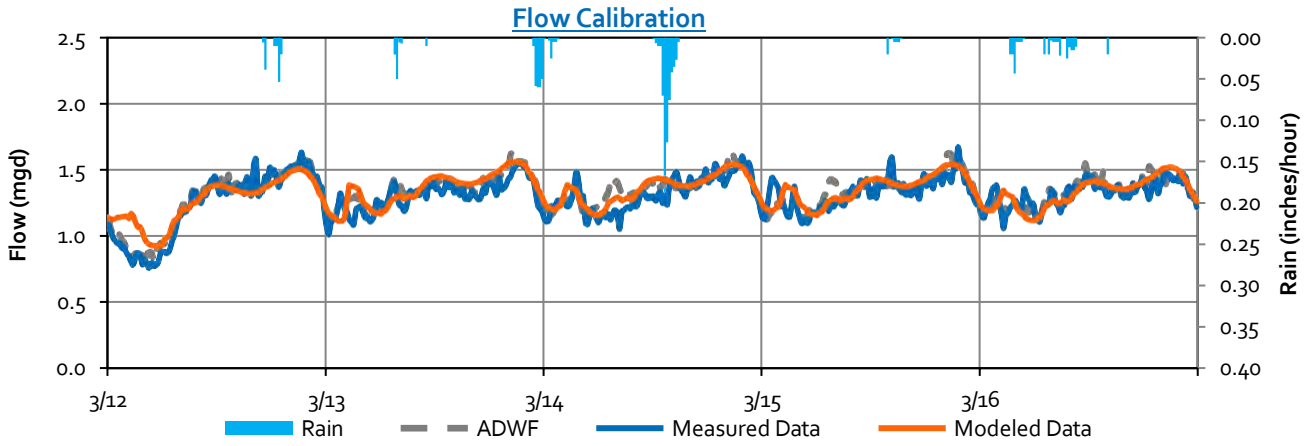
Flow Monitoring Site TC-05 Wet Weather Calibration
Location: N Tracy Blvd. n/o Interstate 205
Pipeline diameter: 24"
City Manhole ID: 1005
Model Pipe ID: 154
Silt Level at Site: none"

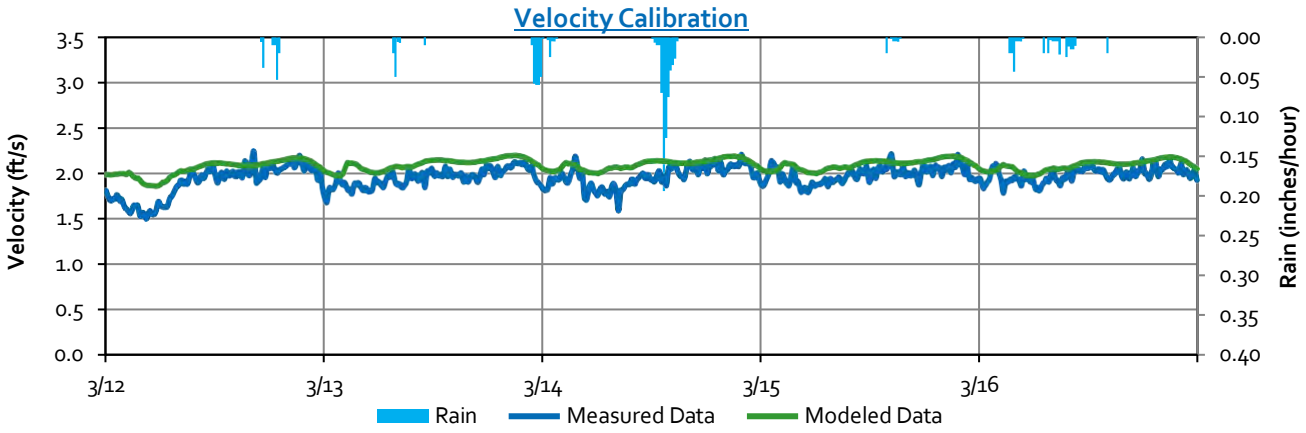


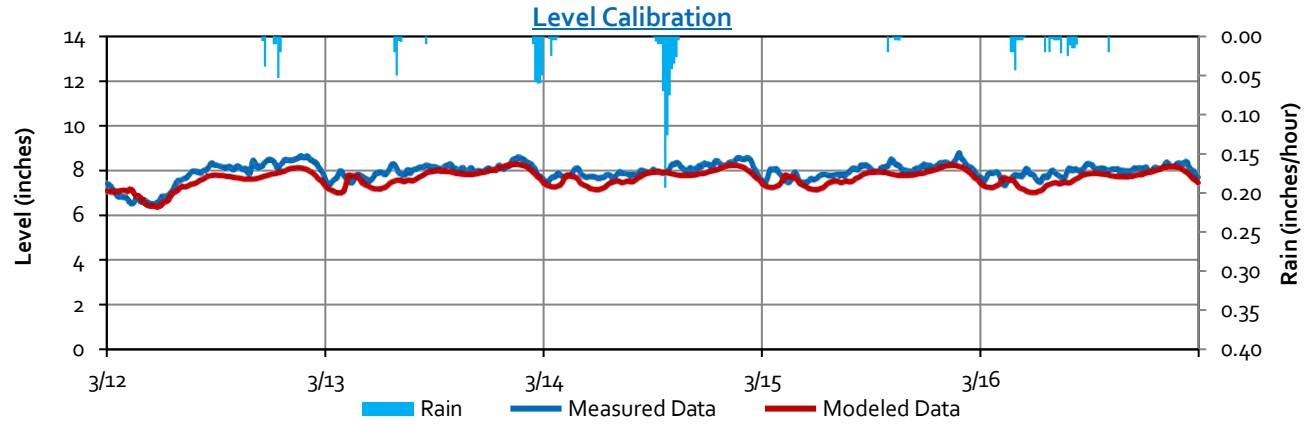




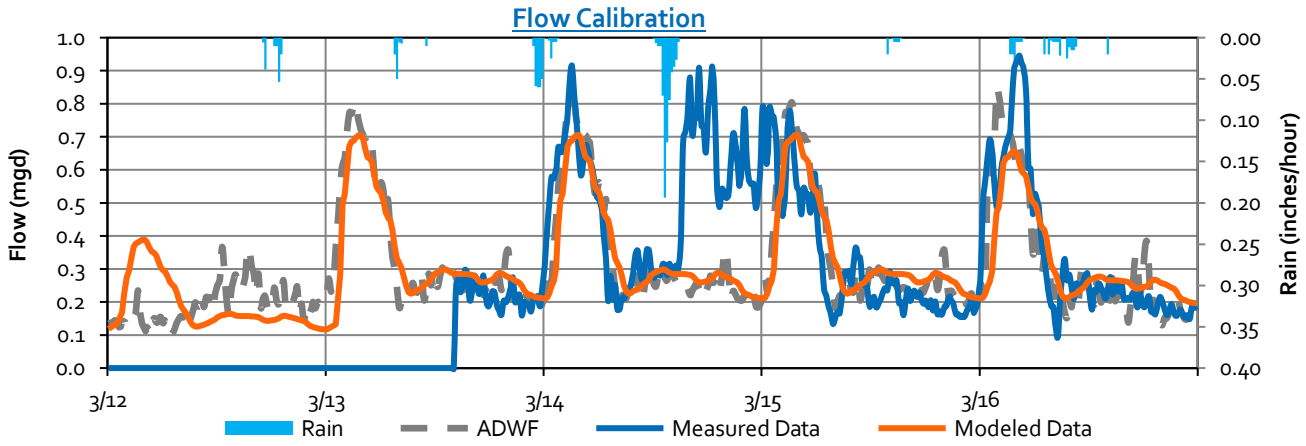
Flow Monitoring Site TC-06 Wet Weather Calibration
Location: West Valley Mall n/o Auto Plaza Dr.
Pipeline diameter: 29.25"
City Manhole ID: 3378
Model Pipe ID: CDT-263
Silt Level at Site: none"

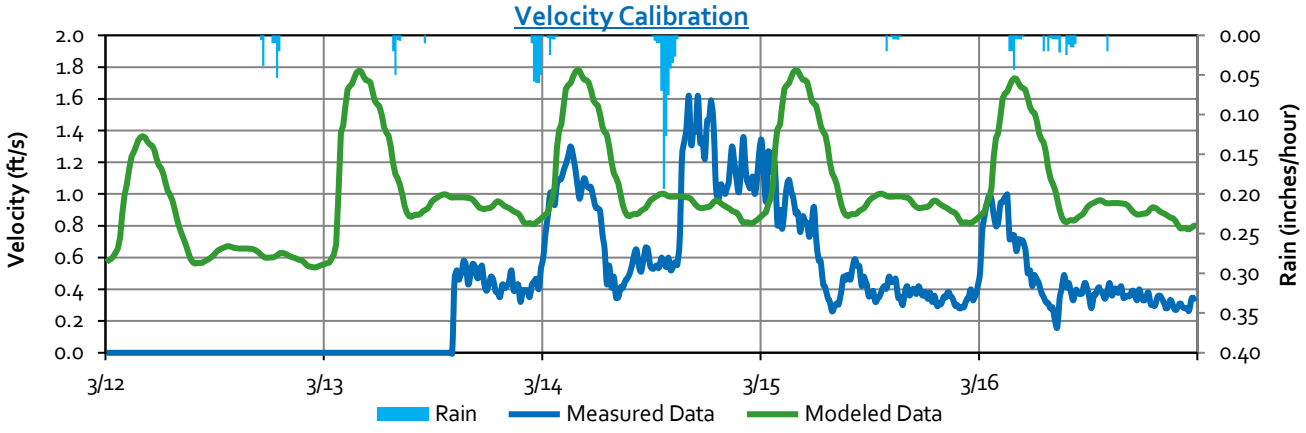


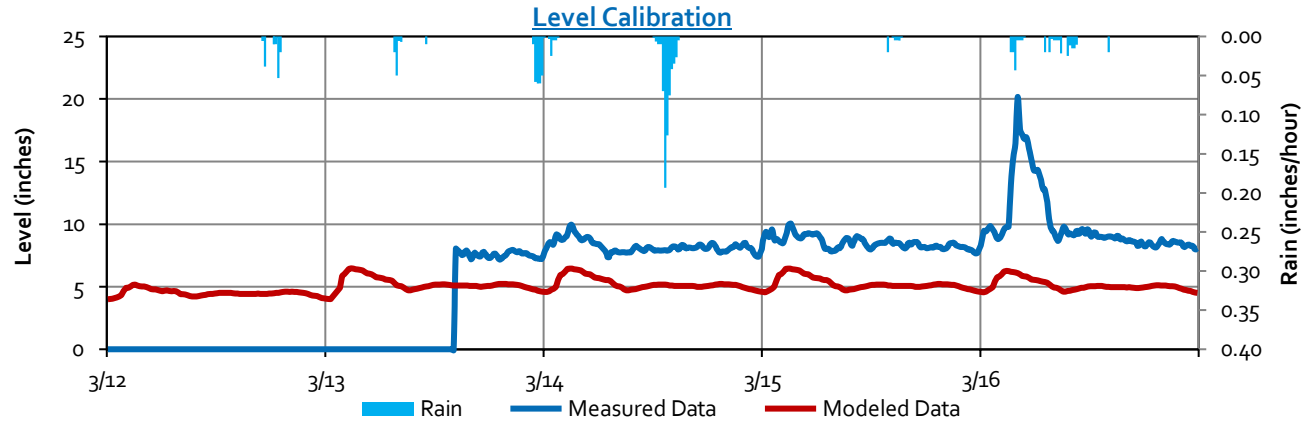




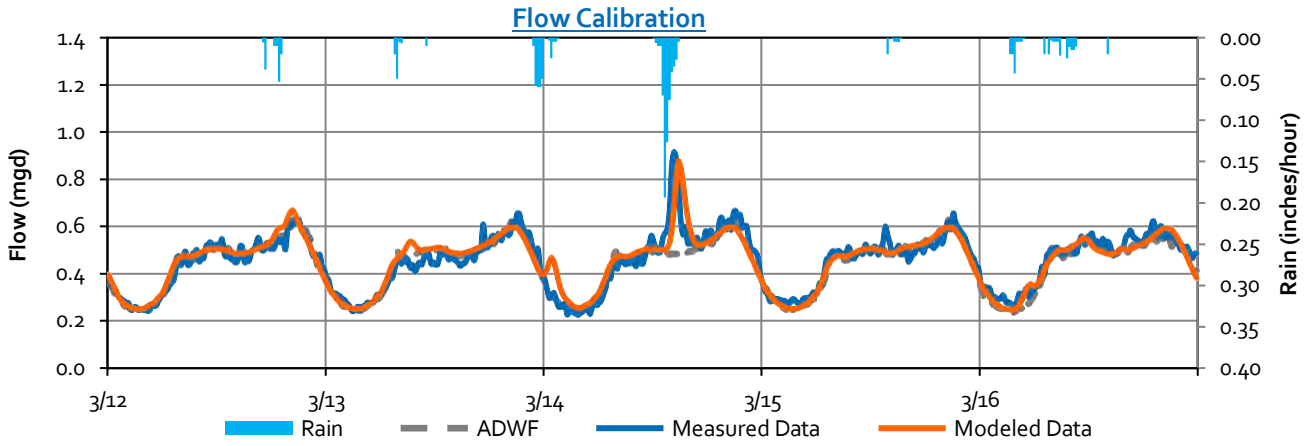
Flow Monitoring Site TC-07 Wet Weather Calibration
Location: W Byrin Rd. e/o Von Sosten Rd.
Pipeline diameter: 20.25"
City Manhole ID: 3362
Model Pipe ID: CDT-231
Silt Level at Site: none"

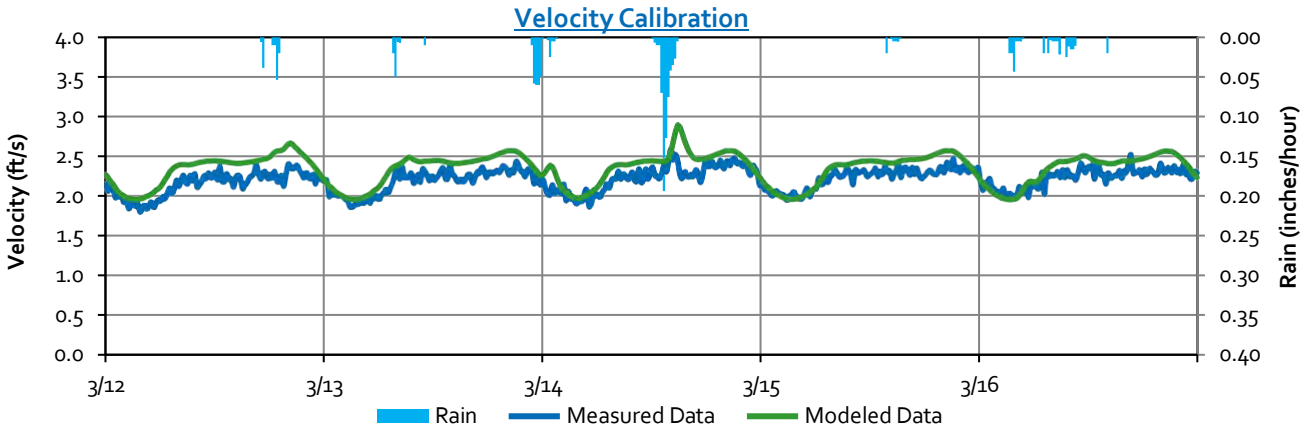


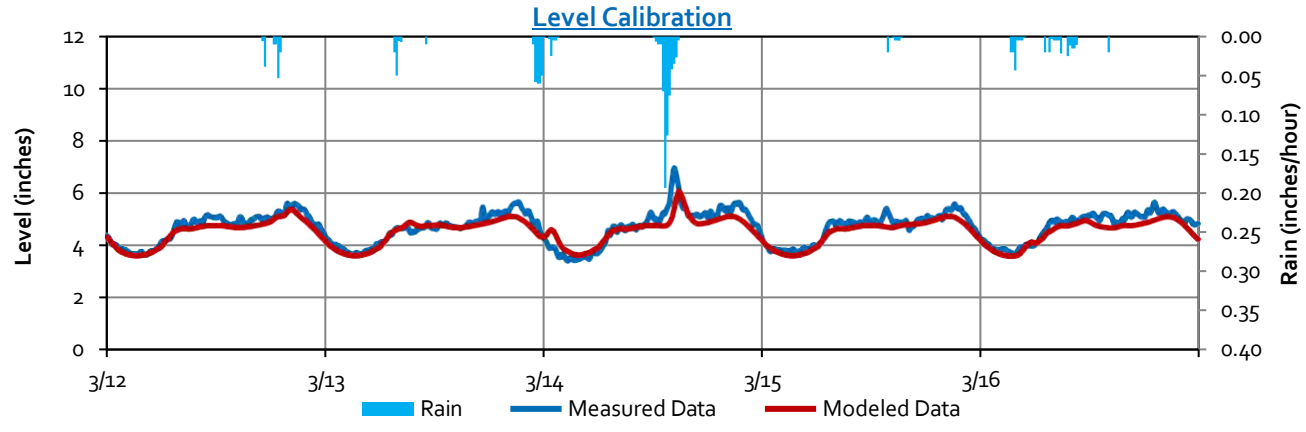




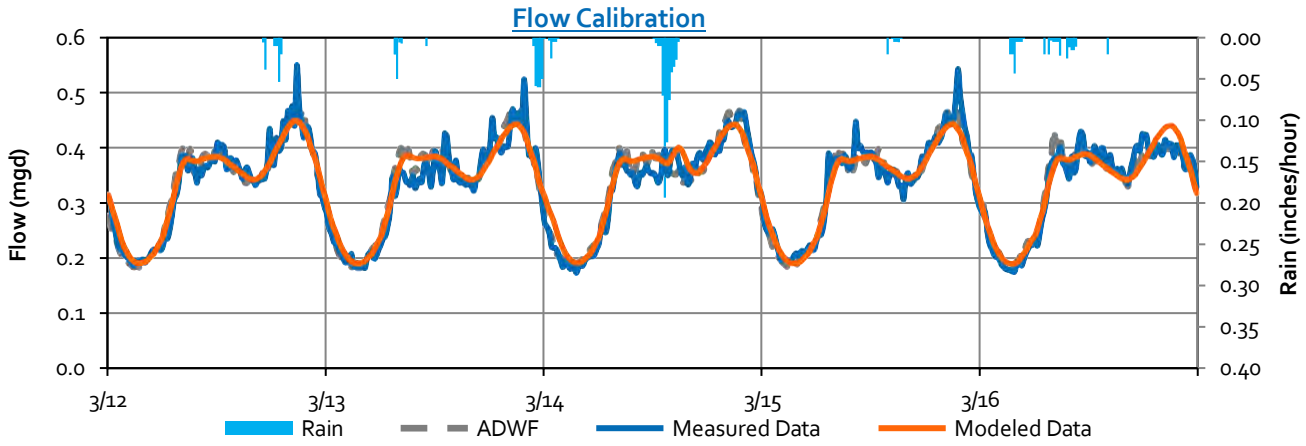
Flow Monitoring Site TC-08 Wet Weather Calibration
Location: Holly Dr. b/w E 22nd St. & W Grant Line Rd.
Pipeline diameter: 18"
City Manhole ID: 752
Model Pipe ID: 450
Silt Level at Site: 1.25"

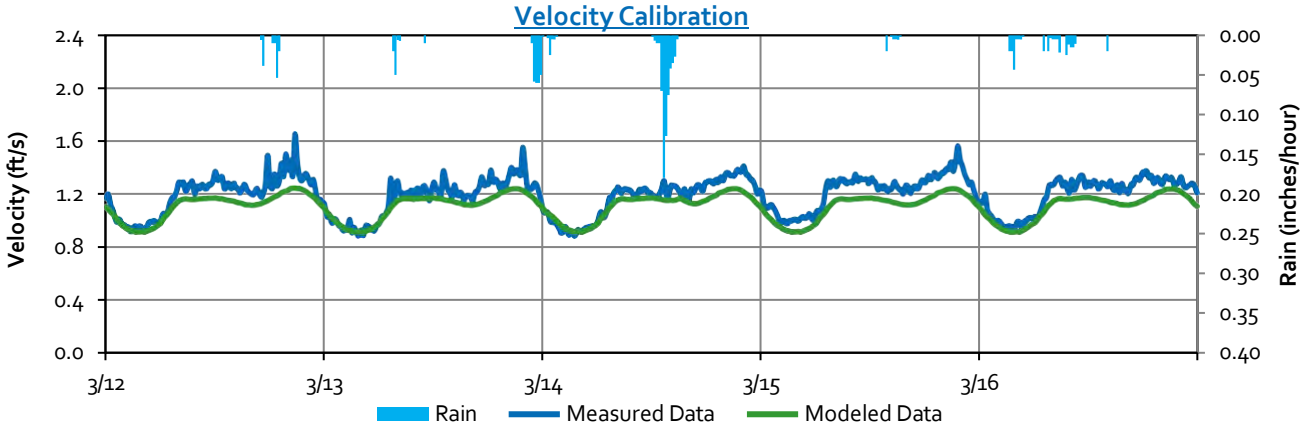


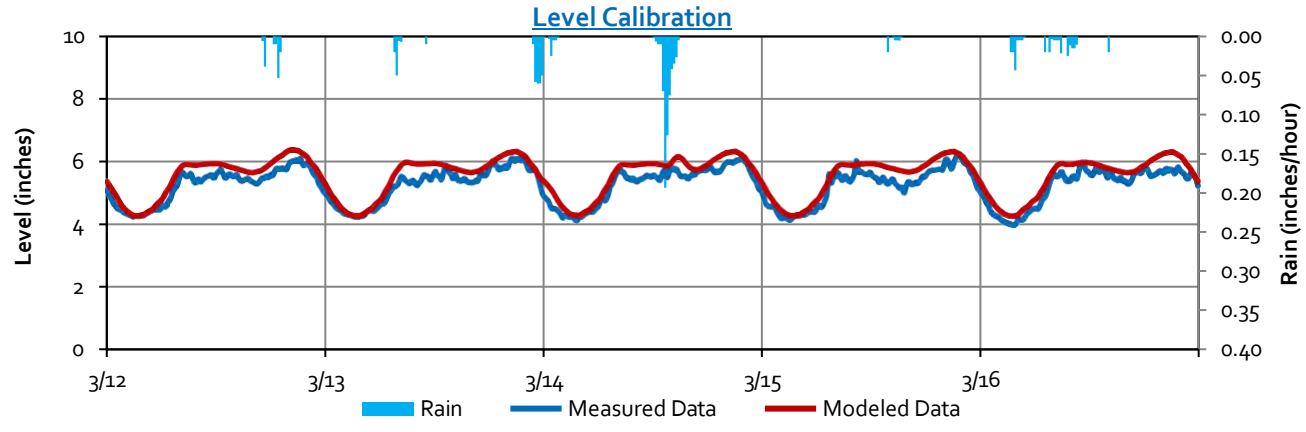




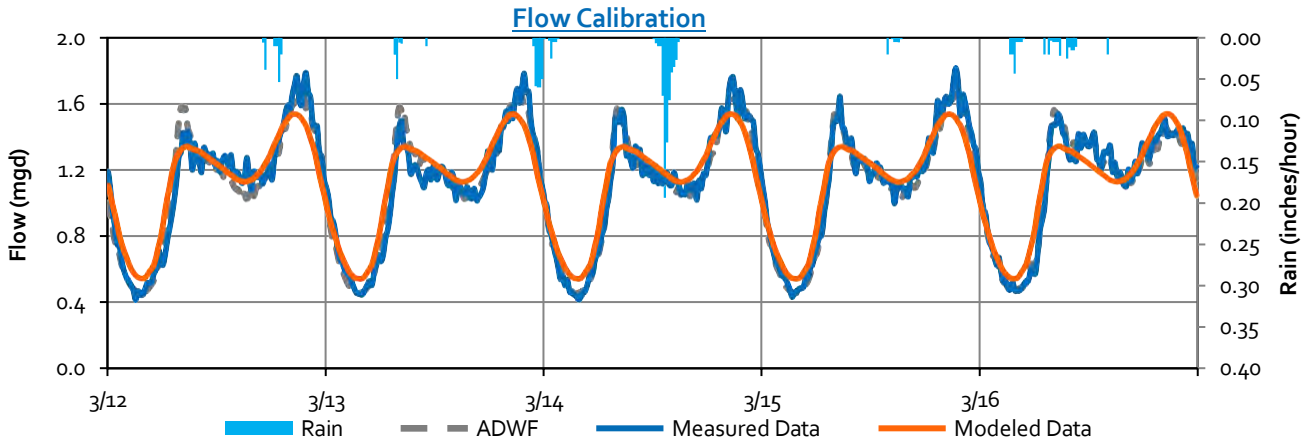
Flow Monitoring Site TC-09 Wet Weather Calibration
Location: Summergate Dr. & Westbury Ct.
Pipeline diameter: 18"
City Manhole ID: 951
Model Pipe ID: 237
Silt Level at Site: none"

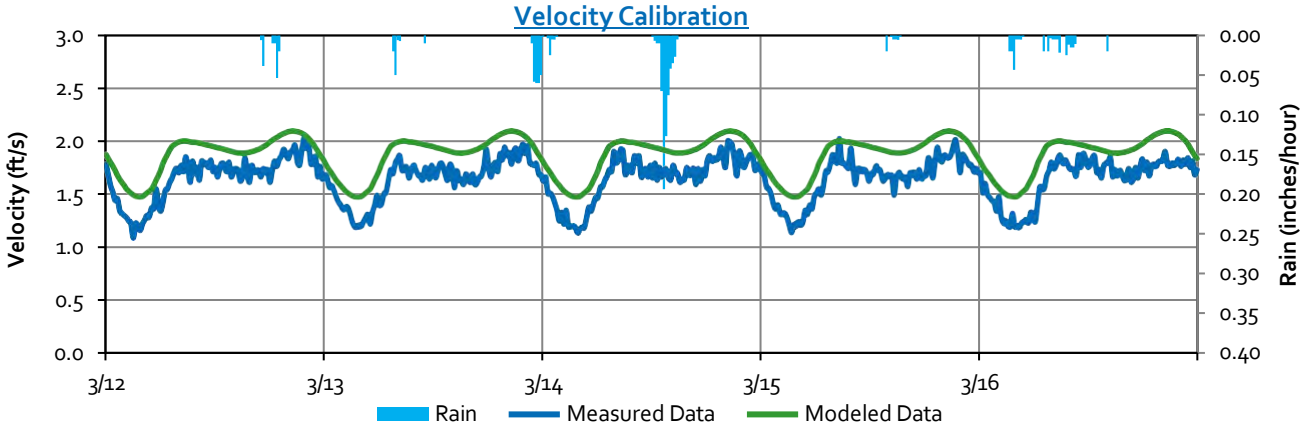


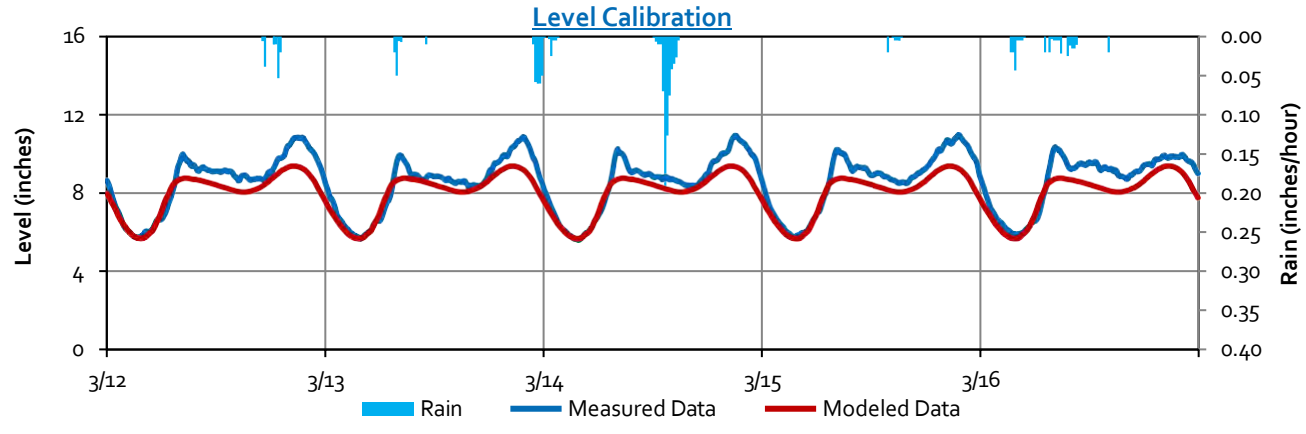




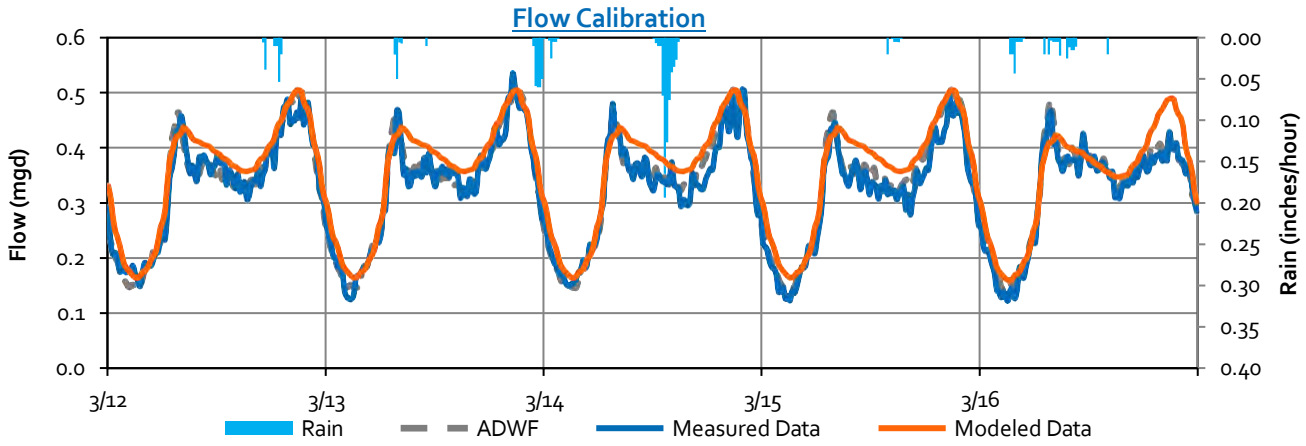
Flow Monitoring Site TC-10 Wet Weather Calibration
Location: N Corral Hollow Rd. b/w Crohn Rd. & W 11th St.
Pipeline diameter: 24"
City Manhole ID: 1819
Model Pipe ID: 861
Silt Level at Site: none"

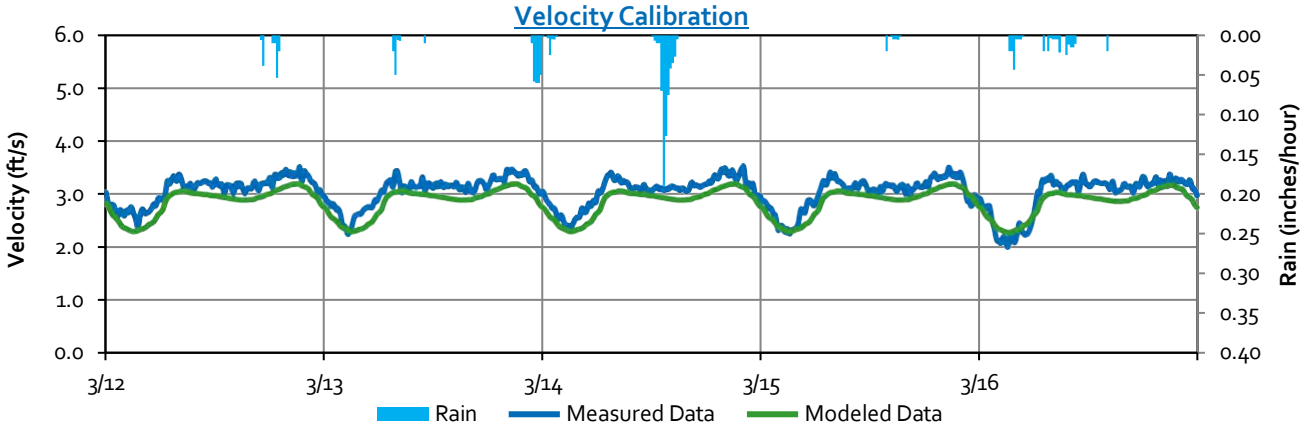


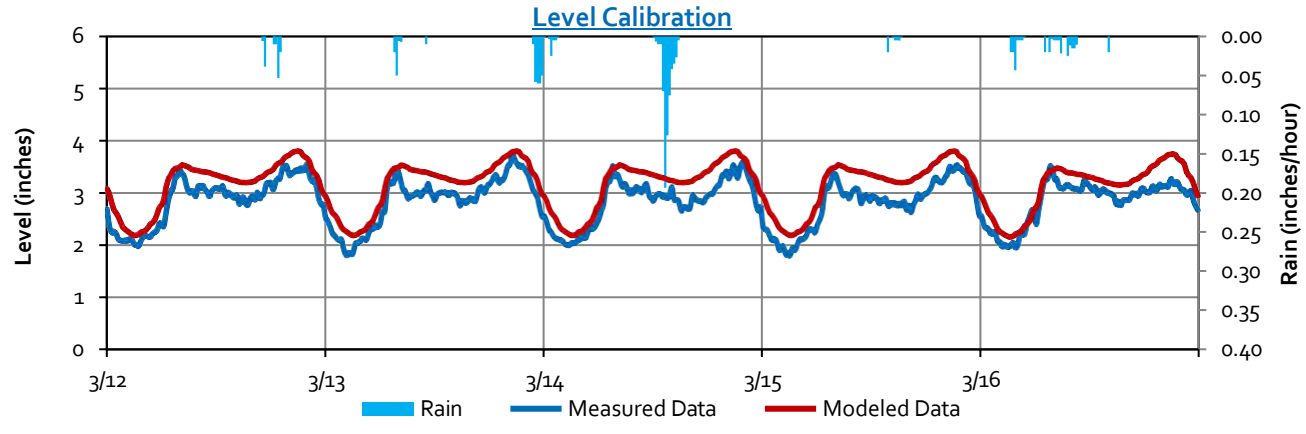




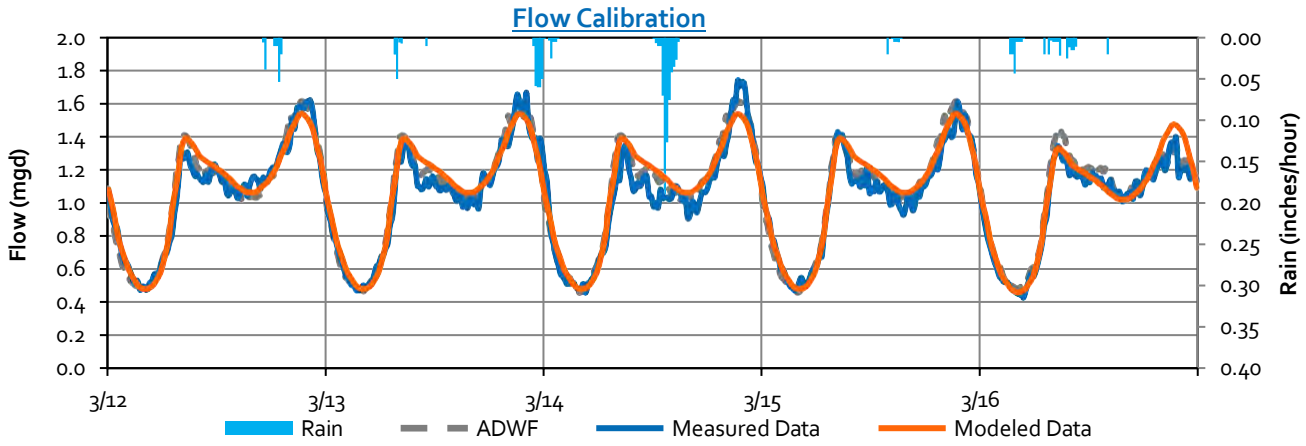
Flow Monitoring Site TC-11 Wet Weather Calibration
Location: Sienna Park Dr. & Sycamore Pkwy.
Pipeline diameter: 15"
City Manhole ID: 2955
Model Pipe ID: 3029
Silt Level at Site: none"

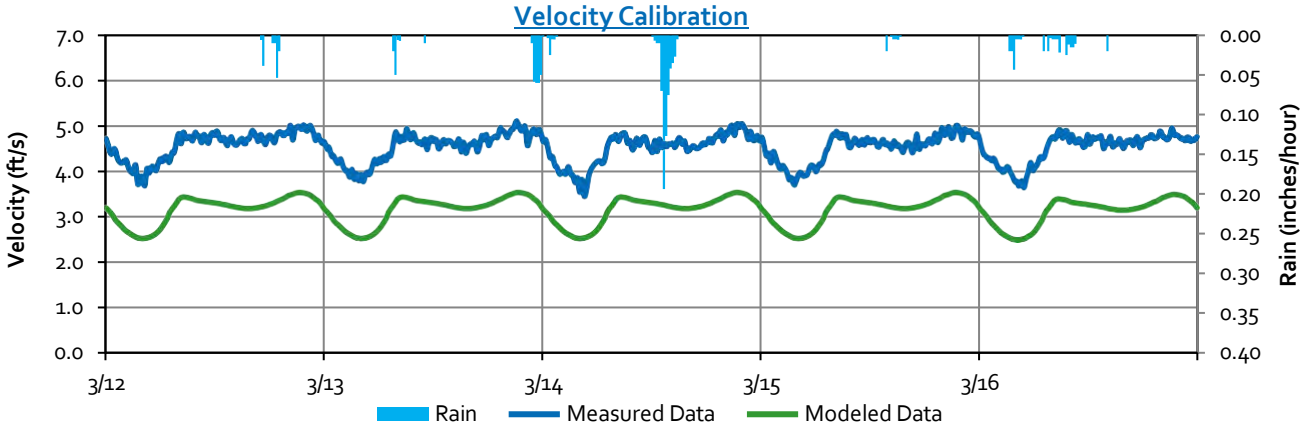


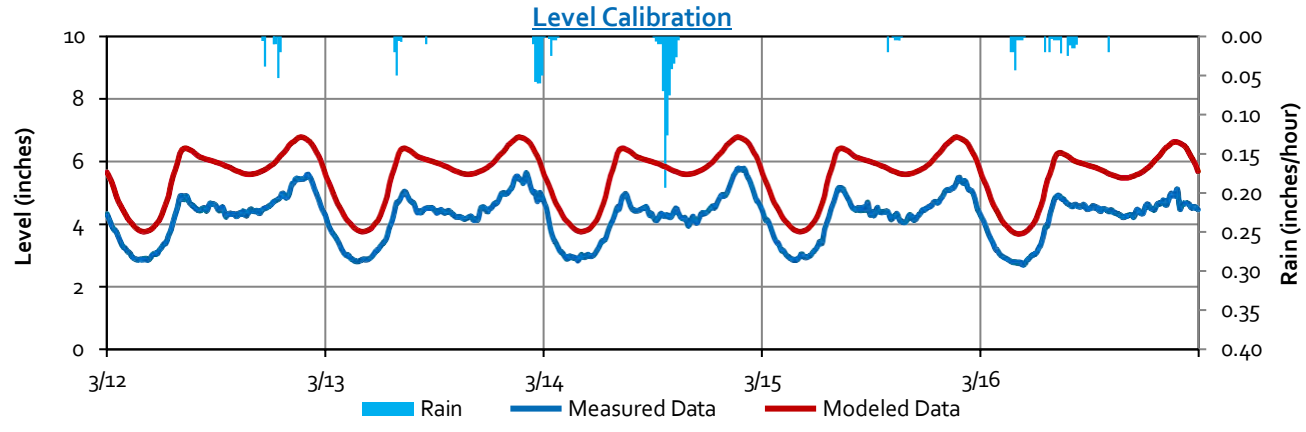




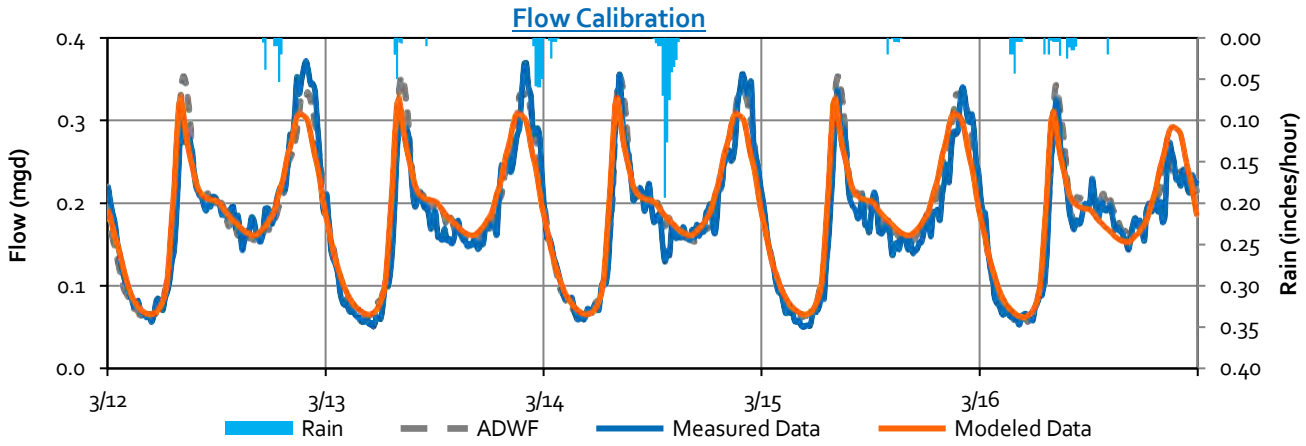
Flow Monitoring Site TC-12 Wet Weather Calibration
Location: Leamon St. & Avila St.
Pipeline diameter: 20.75"
City Manhole ID: 2382
Model Pipe ID: 2324
Silt Level at Site: none"

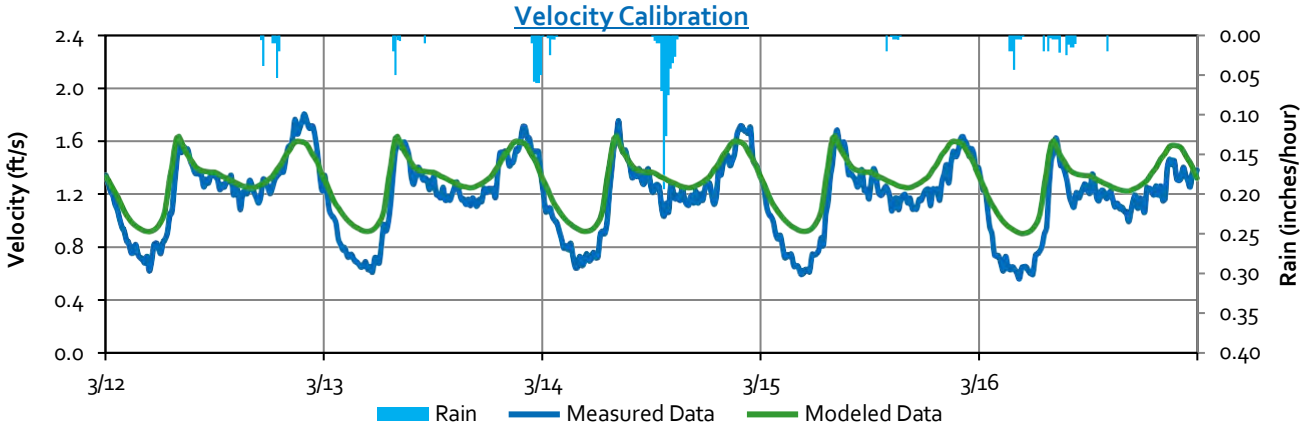


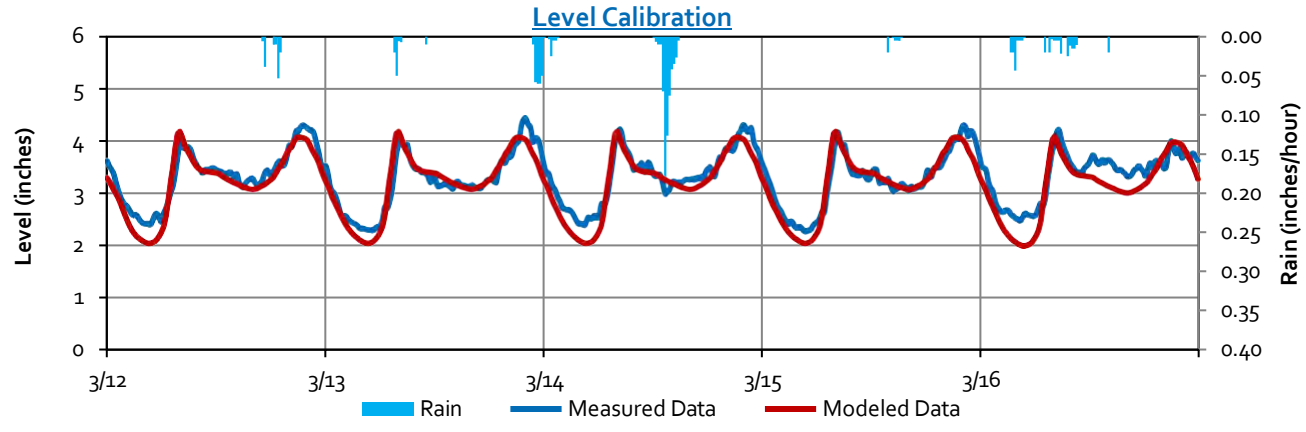




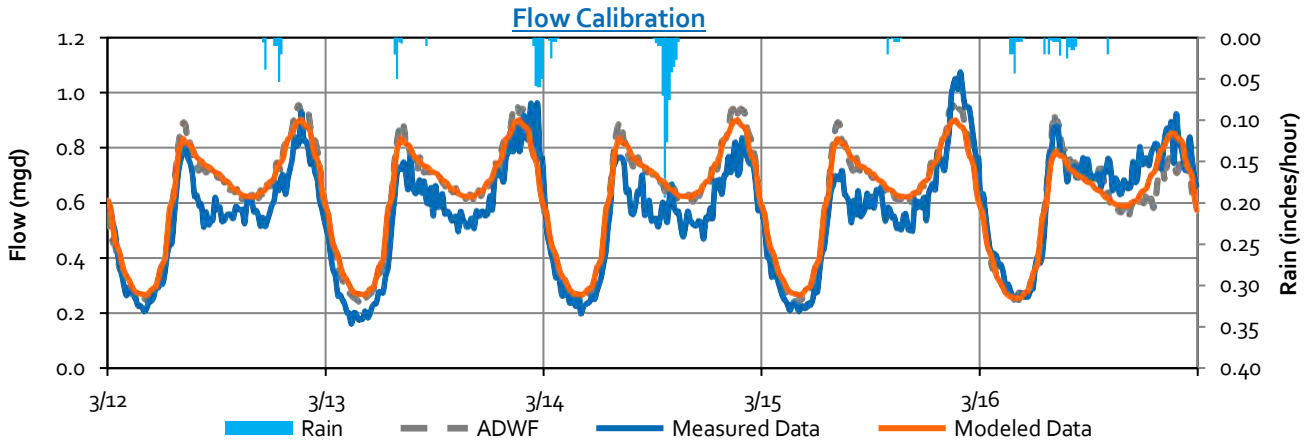
Flow Monitoring Site TC-13 Wet Weather Calibration
Location: Along UPRR, e/o N MacArthur Dr & Krider Ct.
Pipeline diameter: 18"
City Manhole ID: 1306
Model Pipe ID: 993
Silt Level at Site: none"

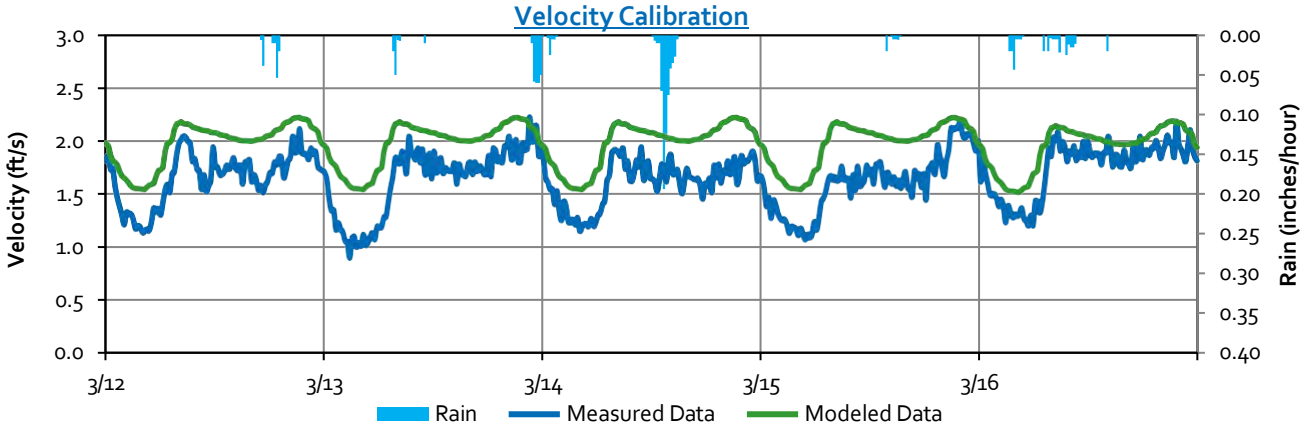


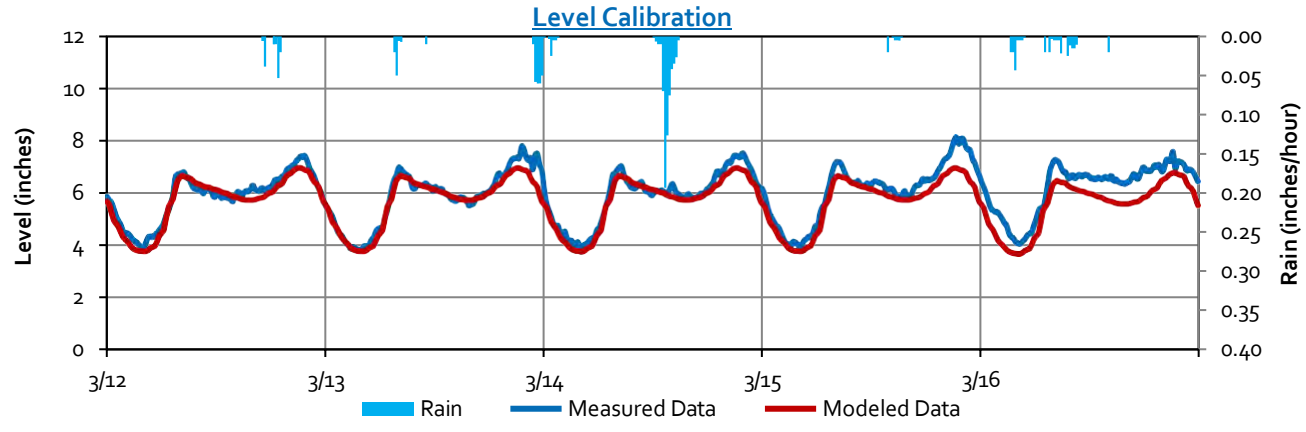




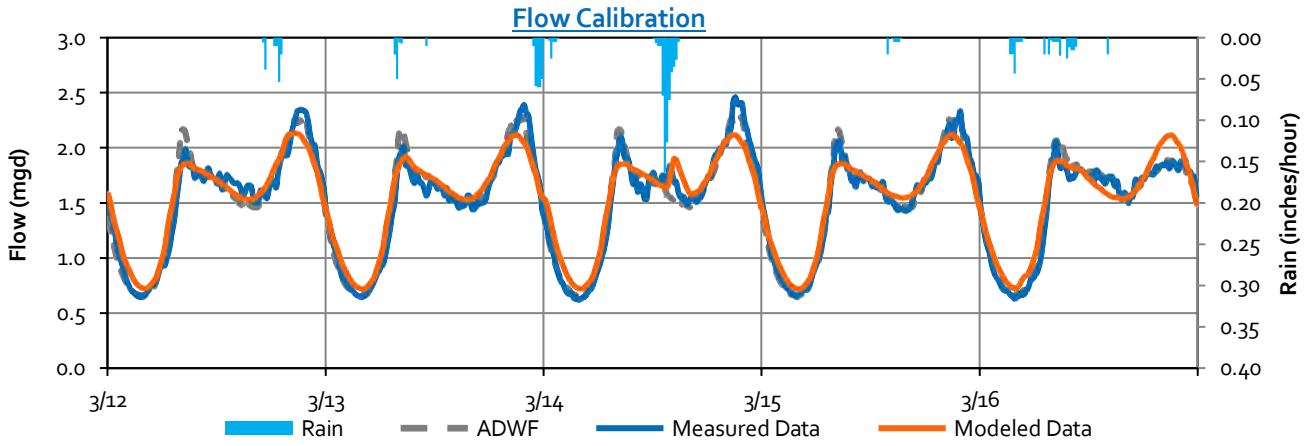
Flow Monitoring Site TC-14 Wet Weather Calibration
Location: e/o De Bord Dr. & Cairo Ct.
Pipeline diameter: 18"
City Manhole ID: 805
Model Pipe ID: 1630
Silt Level at Site: none"

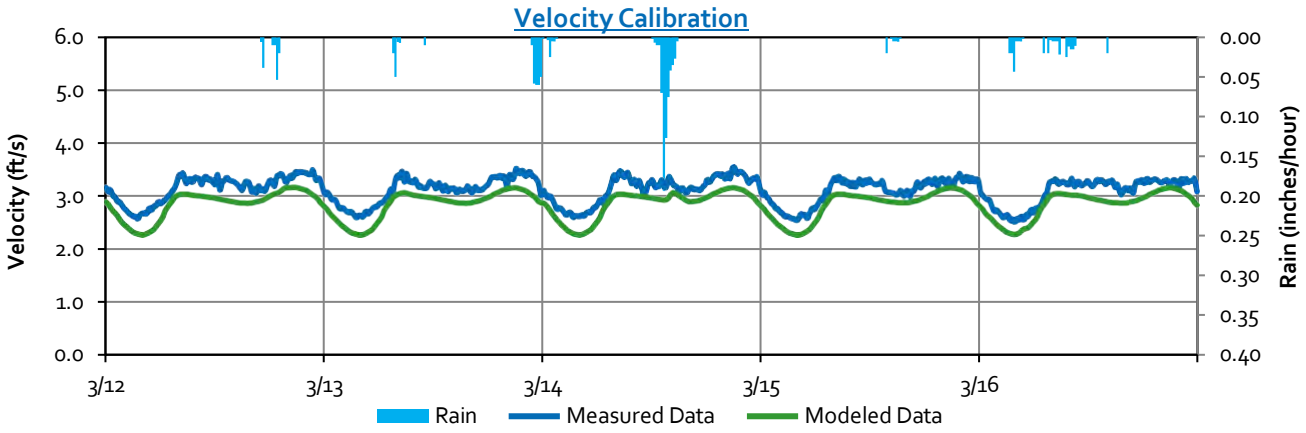


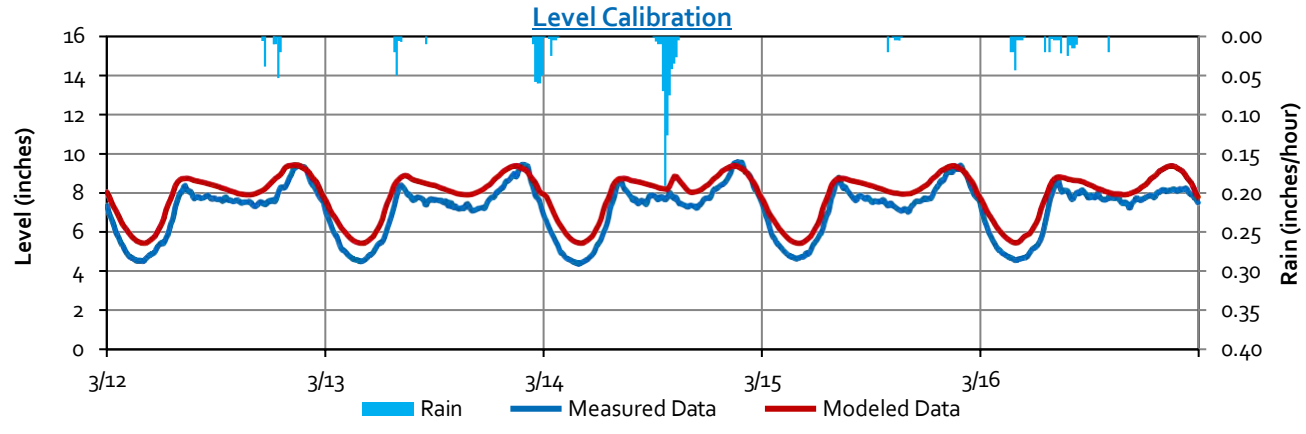




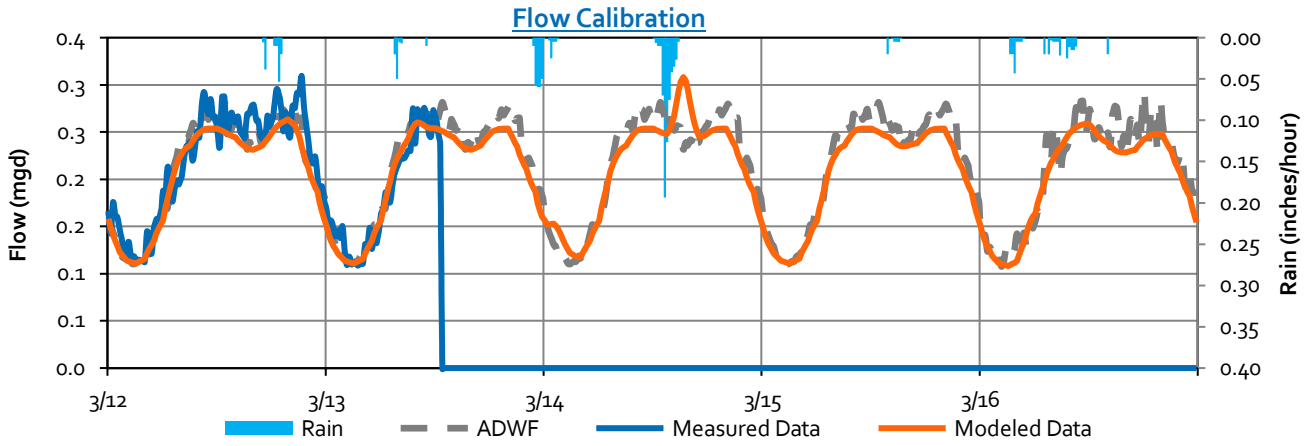
Flow Monitoring Site TC-15 Wet Weather Calibration
Location: N Corral Hollow Rd. & Alegre Dr.
Pipeline diameter: 21.5"
City Manhole ID: 2838
Model Pipe ID: 3608
Silt Level at Site: none"

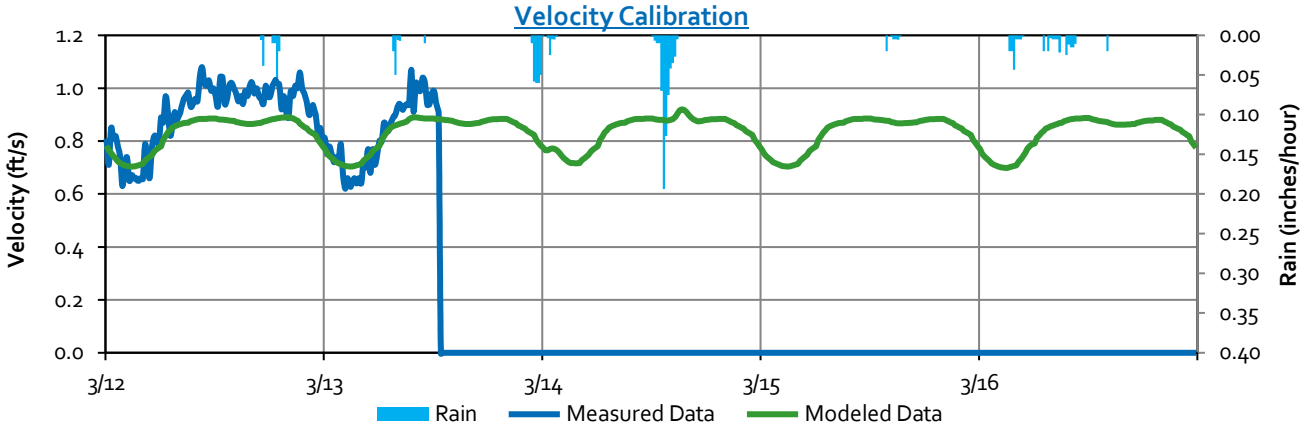


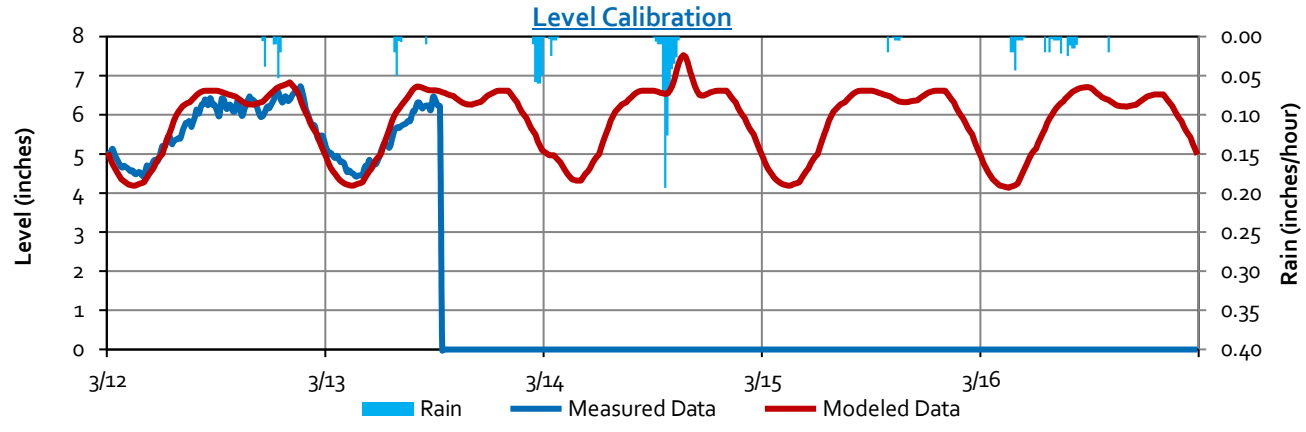




Flow Monitoring Site TC-16 Wet Weather Calibration
Location: W 23rd St. & Bessie Ave.
Pipeline diameter: 12"
City Manhole ID: 1023
Model Pipe ID: 2062
Silt Level at Site: none"







Appendix E

WASTEWATER IMPROVEMENT DETAIL SHEETS

Project Number: WWGM-1
Project Name: Gravity Main along Bessie Avenue
System Type: Wastewater Collection System



Project Description:

This project includes the replacement of approximately 440 feet of 8-inch diameter gravity main along Bessie Avenue, between Whittier Avenue and 20th Street. To mitigate capacity deficiencies under existing PWWF conditions, it is recommended that the existing 8-inch diameter gravity main be replaced with a 12-inch diameter gravity main.

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost ($)	Baseline Construction Cost[1] ($)	Capital Improvement Cost[2] ($)	Project Schedule
Gravity Main	8	12	Replace	440	$ 285	$ 125,000	$ 169,000	2023

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

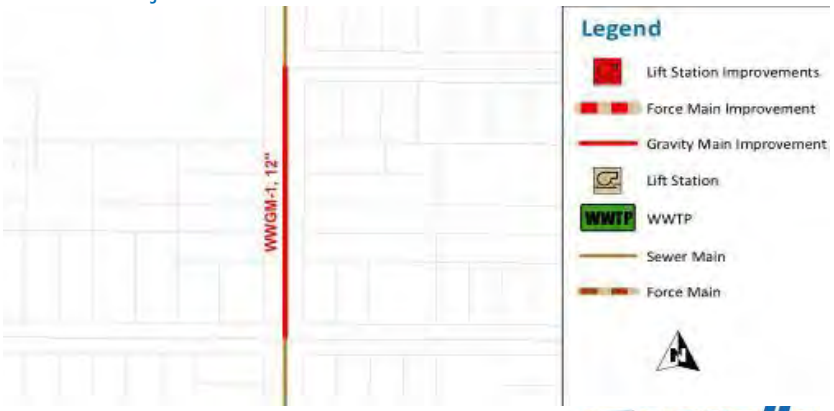
Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	100%	$ 169,000
Future Users	0%	$ -
Total	100%	$ 169,000

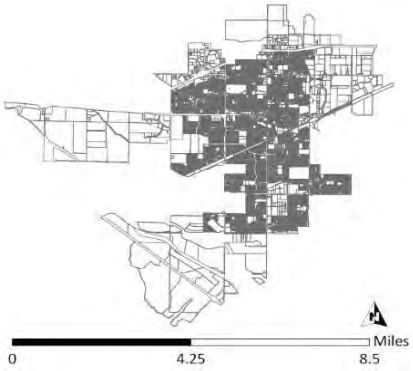
Notes on Cost Estimation:

As an existing deficiency, existing users are assigned 100-percent of the project's cost.

Project Detail:



Project Number: WWGM-2
Project Name: Gravity Main along Bessie Avenue
System Type: Wastewater Collection System



Project Description:

This project includes the replacement of approximately 510 feet of 10-inch diameter gravity main along Bessie Avenue, between 23rd Street and West Grant Line Road. To mitigate capacity deficiencies under existing PWWF conditions, it is recommended that the existing 10-inch diameter gravity main be replaced with a 12-inch diameter gravity main.

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost ($)	Baseline Construction Cost[1] ($)	Capital Improvement Cost[2] ($)	Project Schedule
Gravity Main	10	12	Replace	510	$ 285	$ 145,000	$ 196,000	2024

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	100%	$ 196,000
Future Users	0%	$ -
Total	100%	$ 196,000

Notes on Cost Estimation:

As an existing deficiency, existing users are assigned 100-percent of the project's cost.

Project Detail:



Project Number: WWGM-3
Project Name: Gravity Main along North Central Avenue
System Type: Wastewater Collection System



Project Description:

This project includes the replacement of approximately 450 feet of 8-inch and 12-inch diameter gravity main along North Central Avenue, 10th Street and 11th Street. To mitigate capacity deficiencies under existing PWWF conditions, it is recommended that the existing 8-inch and 12-inch diameter gravity mains be replaced with a 15-inch diameter gravity main.

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost ($)	Baseline Construction Cost[1] ($)	Capital Improvement Cost[2] ($)	Project Schedule
Gravity Main	8	15	Replace	450	$ 305	$ 137,000	$ 185,000	2025

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

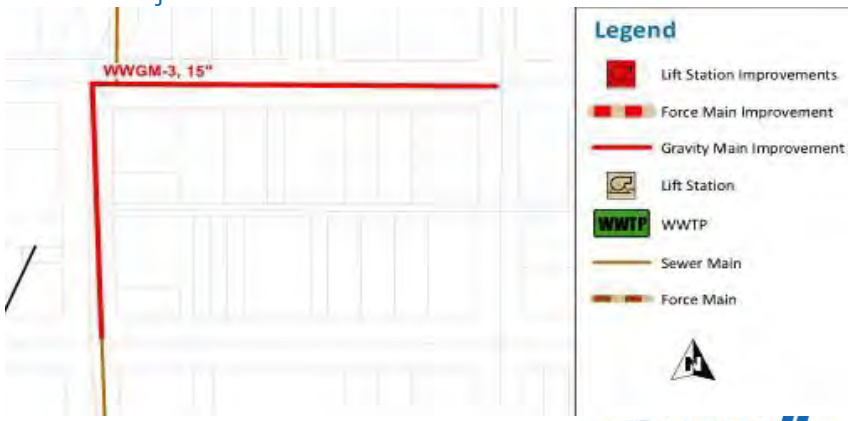
Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	100%	$ 185,000
Future Users	0%	$ -
Total	100%	$ 185,000

Notes on Cost Estimation:

As an existing deficiency, existing users are assigned 100-percent of the project's cost.

Project Detail:



Project Number: Phase 2
Project Name: Corral Hollow Phase 2
System Type: Wastewater Collection System



Project Description:

This project includes the addition of a parallel gravity main along Corral Hallow Road between Parkside Drive and Fieldview Drive. This project will compromise of approximately 8,450 feet of 18-inch diameter gravity main.

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost ($)	Baseline Construction Cost[1] ($)	Capital Improvement Cost[2] ($)	Project Schedule
Gravity Main	-	18	New	8,450	$ 330	$ 2,789,000	$ 3,765,000	2031-2040

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

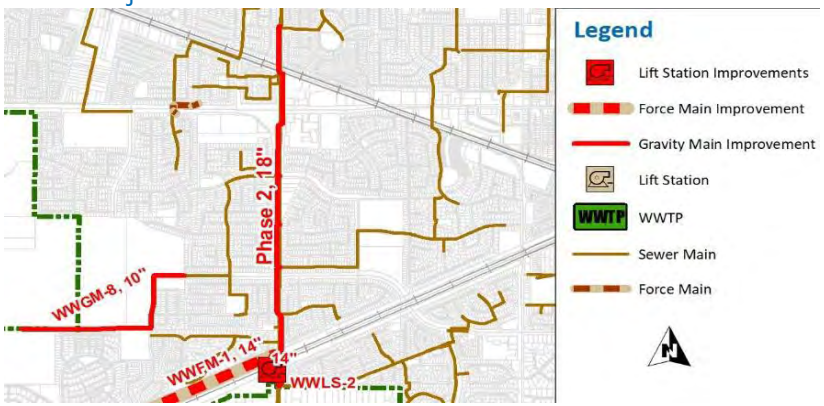
Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	0%	$ -
Future Users	100%	$ 3,765,000
Total	100%	$ 3,765,000

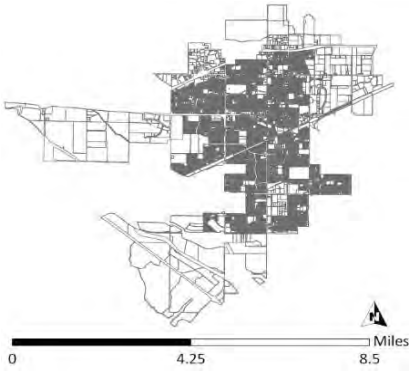
Notes on Cost Estimation:

As a future deficiency, future users are assigned 100-percent of the project's cost.

Project Detail:



Project Number: WWGM-4
Project Name: Gravity Main along MacArthur Drive
System Type: Wastewater Collection System



Project Description:

This project includes the replacement of approximately 600 feet of 12-inch diameter gravity main along MacArthur Drive, south of East Grant Line Road. To mitigate capacity deficiencies under 2040 PWWF conditions, it is recommended that the existing 12-inch diameter gravity main be replaced with a 21-inch diameter gravity main.

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost ($)	Baseline Construction Cost[1] ($)	Capital Improvement Cost[2] ($)	Project Schedule
Gravity Main	12	21	Replace	600	$ 420	$ 252,000	$ 340,000	2031-2040

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	0%	$ -
Future Users	100%	$ 340,000
Total	100%	$ 340,000

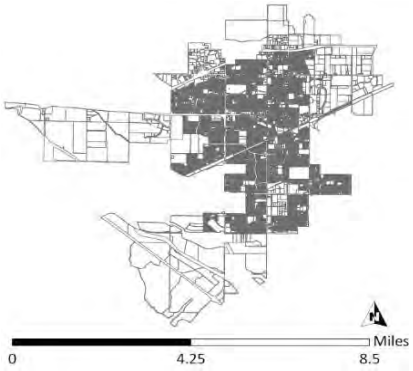
Notes on Cost Estimation:

As a future deficiency, future users are assigned 100-percent of the project's cost.

Project Detail:



Project Number: WWGM-5
Project Name: Gravity Main along Lammers Road
System Type: Wastewater Collection System



Project Description:

This project includes the addition of approximately 3,310 feet of 18-inch diameter gravity main along Lammers Road, north of West Schulte Road. To mitigate capacity deficiencies under 2040 PWWF conditions, it is recommended that this gravity main is implemented convey flow from Corral Hollow Road to Lammers Road. ***This project is needed to convey from the new force main and lift station projects (WWFM-1 and WWLS-2)***

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost ($)	Baseline Construction Cost[1] ($)	Capital Improvement Cost[2] ($)	Project Schedule
Gravity Main	--	18	New	3,310	$ 330	$ 1,092,000	$ 1,474,000	2027

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	0%	$ -
Future Users	100%	$ 1,474,000
Total	100%	$ 1,474,000

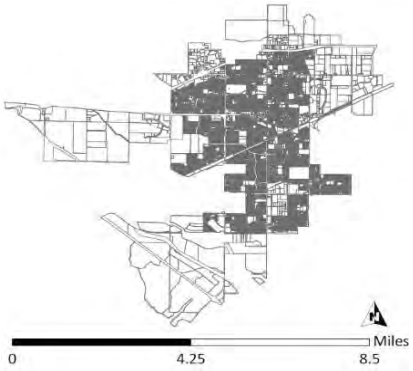
Notes on Cost Estimation:

As a future deficiency, future users are assigned 100-percent of the project's cost.

Project Detail:



Project Number: WWGM-6
Project Name: Gravity Main to Serve Holly Sugar Industrial
System Type: Wastewater Collection System



Project Description:

This project includes the addition of approximately 1,520 feet of 12-inch diameter gravity main west of MacArthur drive and south of Arbor Avenue. To anticipate development in this area (Holly Sugar Industrial) by 2040, it is recommended that these 12-inch diameter pipelines be added.

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost ($)	Baseline Construction Cost[1] ($)	Capital Improvement Cost[2] ($)	Project Schedule
Gravity Main	--	12	New	1,520	$ 285	$ 433,000	$ 585,000	2031-2040

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

Project Cost Allocation:

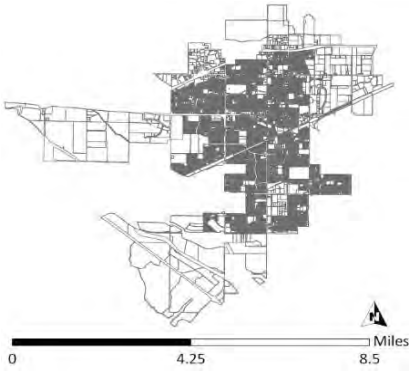
Reimbursement Category	Percent	Cost ($)
Existing Users	0%	$ -
Future Users	100%	$ 585,000
Total	100%	$ 585,000

Notes on Cost Estimation:

Project Detail:



Project Number: WWGM-7
Project Name: Gravity Main to Serve Ellis
System Type: Wastewater Collection System



Project Description:

This project includes the addition of approximately 1,760 feet of 12-inch diameter gravity main along Ellis Town Drive, between Corral Hollow Road and Middlefield Drive. To anticipate development in this area (Ellis) by 2040, it is recommended that these 12-inch diameter pipelines be added.

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost ($)	Baseline Construction Cost[1] ($)	Capital Improvement Cost[2] ($)	Project Schedule
Gravity Main	--	12	New	1,760	$ 285	$ 502,000	$ 678,000	2031-2040

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

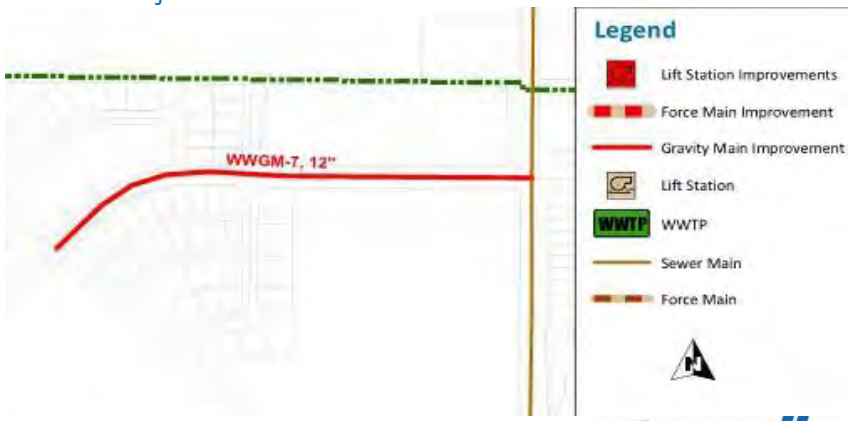
(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	0%	$ -
Future Users	100%	$ 678,000
Total	100%	$ 678,000

Notes on Cost Estimation:

Project Detail:



Project Number: WWGM-8
Project Name: Gravity Main to Serve Rocking Horse and UR7 Bright/Castro
System Type: Wastewater Collection System



Project Description:

This project includes the addition of approximately 4,700 feet of 12-inch diameter gravity main along Schulte Road and Mabel Josephine Drive. To anticipate development in this area (Rocking Horse and UR7 Bright/Castro) by 2040, it is recommended that these 12-inch diameter pipelines be added.

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost ($)	Baseline Construction Cost[1] ($)	Capital Improvement Cost[2] ($)	Project Schedule
Gravity Main	--	12	New	4,700	$ 285	$ 1,340,000	$ 1,809,000	2031-2040

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	0%	$ -
Future Users	100%	$ 1,809,000
Total	100%	$ 1,809,000

Notes on Cost Estimation:

Project Detail:



Project Number: WWGM-9
Project Name: Gravity Main to Serve Avenues and SWC Valpico & Corral Hollow
System Type: Wastewater Collection System



Project Description:

This project includes the addition of approximately 2,650 feet of 12-inch diameter gravity main along Valpico Road, west of Corral Hollow Road. To anticipate development in this area (Avenues and SWC Valpico & Corral Hollow) by 2040, it is recommended that these 12-inch diameter pipelines be added.

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost ($)	Baseline Construction Cost[1] ($)	Capital Improvement Cost[2] ($)	Project Schedule
Gravity Main	--	12	New	2,650	$ 285	$ 755,000	$ 1,019,000	2031-2040

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	0%	$ -
Future Users	100%	$ 1,019,000
Total	100%	$ 1,019,000

Notes on Cost Estimation:

Project Detail:



Project Number: WWGM-10
Project Name: Gravity Main to Serve Tracy Village
System Type: Wastewater Collection System



Project Description:

This project includes the addition of approximately 1,720 feet of 12-inch diameter gravity main along Valpico Road, east of Corral Hollow Road. To anticipate development in this area (Tracy Village) by 2040, it is recommended that these 12-inch diameter pipelines be added.

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost ($)	Baseline Construction Cost[1] ($)	Capital Improvement Cost[2] ($)	Project Schedule
Gravity Main	--	12	New	1,720	$ 285	$ 490,000	$ 662,000	2031-2040

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

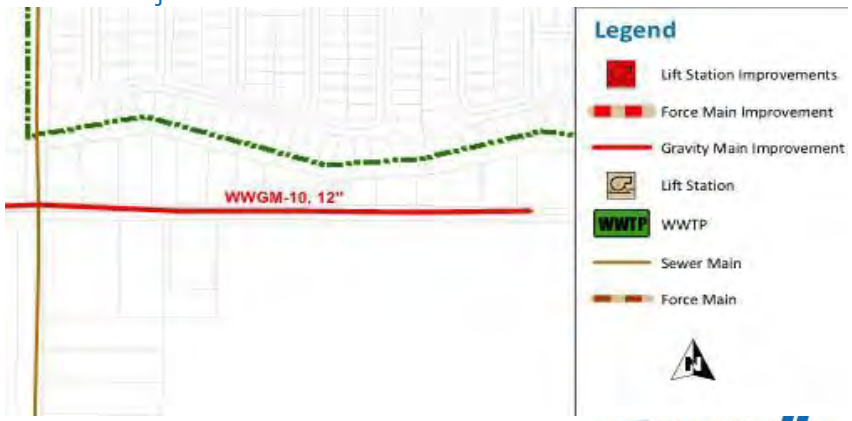
(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	0%	$ -
Future Users	100%	$ 662,000
Total	100%	$ 662,000

Notes on Cost Estimation:

Project Detail:



Project Number: WWGM-11
Project Name: Gravity Main along Lammers Road and Byron Road
System Type: Wastewater Collection System



Project Description:

This project includes the replacement of approximately 2,710 feet of 21-inch diameter gravity main along Lammers Road, south of Byron Road, and along Byron Road, west of Lammers Road. To mitigate capacity deficiencies under buildout PWWF conditions, it is recommended that the existing 21-inch diameter gravity main be replaced with a 27-inch diameter gravity main.

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost ($)	Baseline Construction Cost[1] ($)	Capital Improvement Cost[2] ($)	Project Schedule
Gravity Main	21	27	Replace	2,710	$ 520	$ 1,409,000	$ 1,902,000	2041 & beyond

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

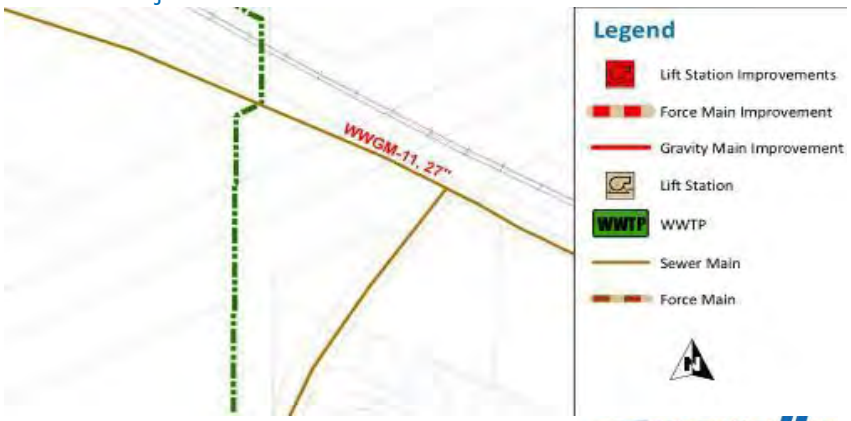
Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	0%	$ -
Future Users	100%	$ 1,902,000
Total	100%	$ 1,902,000

Notes on Cost Estimation:

As a future deficiency, future users are assigned 100-percent of the project's cost.

Project Detail:



Project Number: WWGM-12
Project Name: Gravity Main along Corral Hollow Road
System Type: Wastewater Collection System



Project Description:

This project includes the replacement of approximately 380 feet of 18-inch gravity main along Corral Hollow Road, between Parkside Drive and project WWLS-2.To mitigate capacity deficiencies under buildout PWWF conditions, it is recommended that the existing 18-inch diameter gravity main be replaced with a 24-inch diameter gravity main.

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost ($)	Baseline Construction Cost[1] ($)	Capital Improvement Cost[2] ($)	Project Schedule
Gravity Main	18	24	Replace	380	$ 460	$ 175,000	$ 236,000	2041 & beyond

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	0%	$ -
Future Users	100%	$ 236,000
Total	100%	$ 236,000

Notes on Cost Estimation:

As a future deficiency, future users are assigned 100-percent of the project's cost.

Project Detail:



Project Number: WWGM-13
Project Name: Gravity Main to Serve Chrisman
System Type: Wastewater Collection System



Project Description:

This project includes the addition of approximately 5,750 feet of 12-inch diameter gravity main along Paradise Road, south of West Grant Line and along Chrisman Road, south of Paradise Road. To anticipate development in this area (Chrisman Road) by 2040, it is recommended that these 12-inch diameter pipelines be added.

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost ($)	Baseline Construction Cost[1] ($)	Capital Improvement Cost[2] ($)	Project Schedule
Gravity Main	--	12	New	5,750	$ 285	$ 1,639,000	$ 2,213,000	2041 & beyond

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	0%	$ -
Future Users	100%	$ 2,213,000
Total	100%	$ 2,213,000

Notes on Cost Estimation:

Project Detail:



Project Number: WWGM-14
Project Name: Gravity Main to Serve Rocha
System Type: Wastewater Collection System



Project Description:

This project includes the addition of approximately 1,420 feet of 12-inch diameter gravity main east of Spur Line Railroad and south of Yosemite Drive. To anticipate development in this area (Rocha) by 2040, it is recommended that these 12-inch diameter pipelines be added.

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost ($)	Baseline Construction Cost[1] ($)	Capital Improvement Cost[2] ($)	Project Schedule
Gravity Main	--	12	New	1,420	$ 285	$ 405,000	$ 547,000	2041 & beyond

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	0%	$ -
Future Users	100%	$ 547,000
Total	100%	$ 547,000

Project Detail:

Notes on Cost Estimation:

Project Number: WWGM-15
Project Name: Gravity Main to Serve Acacia Street and Franklin Avenue
System Type: Wastewater Collection System



Project Description:

This project includes the addition of approximately 750 feet of 18-inch diameter gravity main east of the intersection of Acacia Street and Franklin Avenue . To anticipate development in this area by 2040, it is recommended that these 21-inch diameter pipelines be added.

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost ($)	Baseline Construction Cost[1] ($)	Capital Improvement Cost[2] ($)	Project Schedule
Gravity Main	18	21	Replace	750	$ 420	$ 315,000	$ 425,000	2041 & beyond

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	71%	$ 302,000
Future Users	29%	$ 123,000
Total	100%	$ 425,000

Project Detail:

Notes on Cost Estimation:

Project Number: WWGM-16
Project Name: Gravity Main Along Macarthur Drive
System Type: Wastewater Collection System



Project Description:

This project includes the addition of approximately 1500 feet of 21-inch diameter gravity main Along Macarthur Drive between UP Railroad and Eleventh Street. To anticipate development in this area by 2040, it is recommended that these 24-inch diameter pipelines be added.

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost ($)	Baseline Construction Cost(1) ($)	Capital Improvement Cost(2) ($)	Project Schedule
Gravity Main	21	24	Replace	1,500	$ 460	$ 690,000	$ 932,000	2041 & beyond

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	71%	$ 662,000
Future Users	29%	$ 270,000
Total	100%	$ 932,000

Project Detail:

Notes on Cost Estimation:

Project Number: WWGM-17
Project Name: Gravity Main to Serve Chrisman Road
System Type: Wastewater Collection System



Project Description:

This project includes the addition of approximately 2700 feet of 12-15 inch diameter gravity main West of Chrisman Road between Tulloch Drive and Schulte Road. To anticipate development in this area by 2040, it is recommended that these 18-inch diameter pipelines be added.

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost ($)	Baseline Construction Cost[1] ($)	Capital Improvement Cost[2] ($)	Project Schedule
Gravity Main	12	18	Replace	2,700	$ 330	$ 891,000	$ 1,203,000	2041 & beyond

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	46%	$ 553,000
Future Users	54%	$ 650,000
Total	100%	$ 1,203,000

Project Detail:

Notes on Cost Estimation:

Project Number: Cordes Ranch
Project Name: Gravity Mains to Serve Cordes Ranch
System Type: Wastewater Collection System



Project Description:

This project includes the addition of approximately 1,420 feet of 12-inch diameter gravity main east of Spur Line Railroad and south of Yosemite Drive. To anticipate development in this area (Rocha) by 2040, it is recommended that these 12-inch diameter pipelines be added.

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost ($)	Baseline Construction Cost[1] ($)	Capital Improvement Cost[2] ($)	Project Schedule
Gravity Main	--	8	New	45,440	$ 260	$ 11,814,000	$ 15,949,000	2041 & beyond
Gravity Main	--	10	New	6,160	$ 270	$ 1,663,000	$ 2,245,000	2041 & beyond
Gravity Main	--	12	New	6,370	$ 285	$ 1,815,000	$ 2,450,000	2041 & beyond
Gravity Main	--	15	New	8,640	$ 305	$ 2,635,000	$ 3,557,000	2041 & beyond

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	0%	$ -
Future Users	100%	$24,201,000
Total	100%	$24,201,000

Project Detail:

Notes on Cost Estimation:

Project Number: WWLS-1
Project Name: Hansen Lift Station
System Type: Wastewater Collection System



Project Description:

This project includes the expansion of Hansen Lift Station. The firm capacity is not adequate to convey the buildout PWWF. It is recommended that the lift station capacity be upgraded from 9.01 mgd to 10.8 mgd to accommodate future flows.

Project Details:

Project Element	Existing Total Capacity (mgd)	Proposed Total Capacity (mgd)	Replace/ New	No. of Pumps (Units)	Unit Cost ($)	Baseline Construction Cost[1] ($)	Capital Improvement Cost[2] ($)	Project Schedule
Lift Station	9.01	10.42 mgd	Replace	TBD	--	$ 5,210,000	$ 7,034,000	2031-2040

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

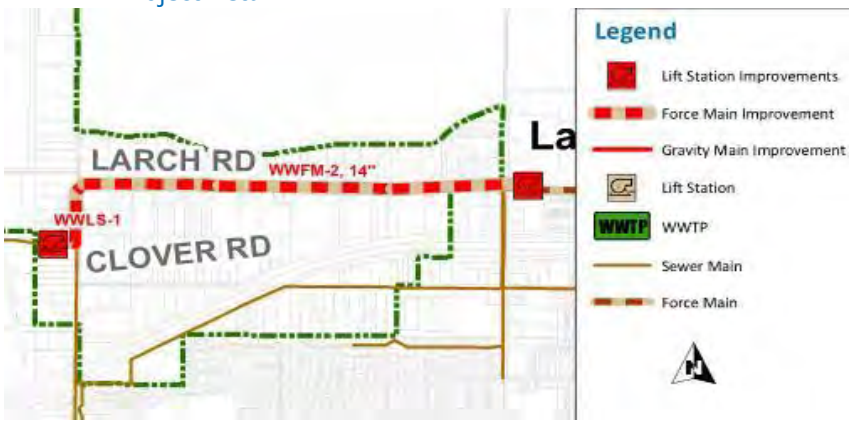
Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	0%	$ -
Future Users	100%	$ 7,034,000
Total	100%	$ 7,034,000

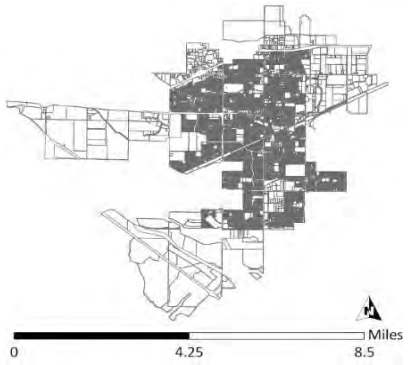
Notes on Cost Estimation:

As a future deficiency, future users are assigned 100-percent of the project's cost.

Project Detail:



Project Number: WWLS-2
Project Name: Lammers Lift Station
System Type: Wastewater Collection System



Project Description:

This project includes the construction of a new lift station to serve future growth and existing users in the southern area of the City. To relieve the high flows conveyed along Corral Hollow Road, this project is recommended to convey flows along Schulte Road, west of Corral Hollow Road. This project will have a firm capacity of 4.36 mgd.

Project Details:

Project Element	Existing Total Capacity (mgd)	Proposed Total Capacity (mgd)	Replace/ New	No. of Pumps (Units)	Unit Cost ($)	Baseline Construction Cost[1] ($)	Capital Improvement Cost[2] ($)	Project Schedule
Lift Station	-	4.36 mgd	New	TBD	--	$ 2,180,000	$ 2,943,000	2027
Land Acquisition							$ 125,000	2027

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	0%	$ -
Future Users	100%	$ 3,068,000
Total	100%	$ 3,068,000

Notes on Cost Estimation:

As a future deficiency, future users are assigned 100-percent of the project's cost.

Project Detail:



Project Number: WWLS-3
Project Name: Larch Lift Station
System Type: Wastewater Collection System



Project Description:

This project includes the expansion of Larch Lift Station. The firm capacity is not adequate to convey the 2040 and buildout PWWFs. It is recommended that the lift station capacity be upgraded from 12.96 mgd to 17.5 mgd to accommodate future buildout flows.

Project Details:

Project Element	Existing Total Capacity (mgd)	Proposed Total Capacity (mgd)	Replace/ New	No. of Pumps (Units)	Unit Cost ($)	Baseline Construction Cost[1] ($)	Capital Improvement Cost[2] ($)	Project Schedule
Lift Station	12.96	19.75 mgd	New	TBD	--	$ 9,875,000	$ 13,331,000	2041 & beyond

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

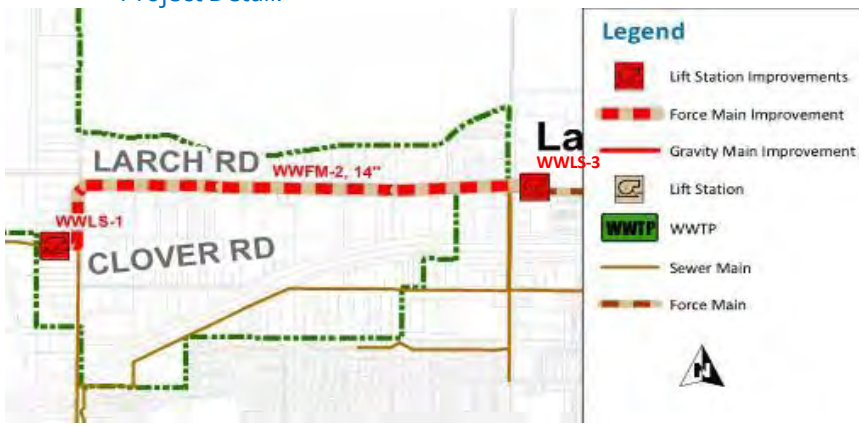
Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	0%	$ -
Future Users	100%	$ 13,331,000
Total	100%	$ 13,331,000

Notes on Cost Estimation:

As a future deficiency, future users are assigned 100-percent of the project's cost.

Project Detail:



Project Number: WWFM-1
Project Name: Schulte Road Force Main
System Type: Wastewater Collection System



Project Description:

This project is a force main for the Schulte Road Lift Station (WWLS-1). The force main consists of a 14-inch diameter force main that extends 7,790 feet along Schulte Road. ***This project is needed to convey flow from the new lift station project WWLS-2.***

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost[1] ($/ft)	Baseline Construction Cost ($)	Capital Improvement Cost[2] ($)	Project Schedule
Force Main	-	14	New	7,790	$ 445	$ 3,467,000	$ 4,680,000	2027

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	0%	$ -
Future Users	100%	$ 4,680,000
Total	100%	$ 4,680,000

Notes on Cost Estimation:

As a future deficiency, future users are assigned 100-percent of the project's cost.

Project Detail:



Project Number: WWFM-2
Project Name: Hansen Force Main
System Type: Wastewater Collection System



Project Description:

This project includes the replacement of approximately 6,240 feet of 12-inch diameter force main. To mitigate capacity deficiencies under buildout PWWF conditions, it is recommended the pipeline be replaced with a 16-inch diameter force main to accommodate future flows.

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost[1] ($/ft)	Baseline Construction Cost ($)	Capital Improvement Cost[2] ($)	Project Schedule
Force Main	12	16	Replace	6,420	$ 445	$ 2,857,000	$ 3,857,000	2041 & beyond

Notes:

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(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

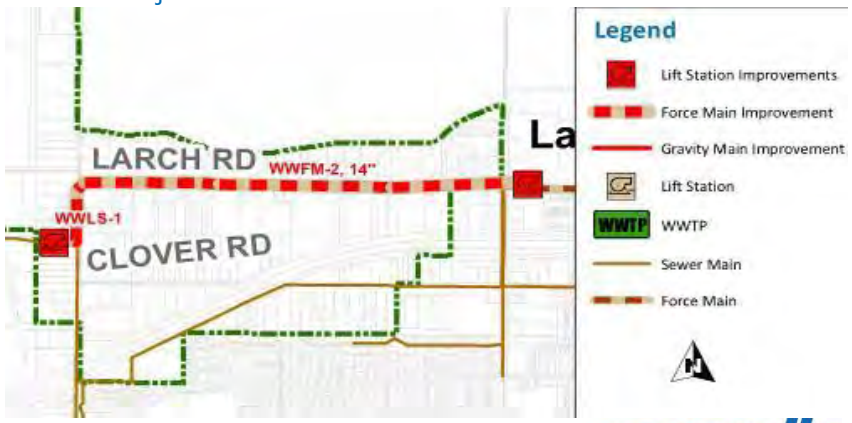
Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	0%	$ -
Future Users	100%	$ 3,857,000
Total	100%	$ 3,857,000

Notes on Cost Estimation:

As a future deficiency, future users are assigned 100-percent of the project's cost.

Project Detail:



Project Number: WWRR-1
Project Name: Annual Sewer Line Replacement Program
System Type: Wastewater Collection System

Project Description:
It is recommended that the City undergoes a Sewer Master Plan Update every 5-years to evaluate wastewater collection system.

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost[1] ($/ft)	Baseline Construction Cost ($)	Capital Improvement Cost[2] ($)	Project Schedule
Annual Sewer Line Replacement	--	--	--	--	--	--	$ 150,000	2023
Annual Sewer Line Replacement	--	--	--	--	--	--	$ 150,000	2024
Annual Sewer Line Replacement	--	--	--	--	--	--	$ 150,000	2025
Annual Sewer Line Replacement	--	--	--	--	--	--	$ 150,000	2026
Annual Sewer Line Replacement	--	--	--	--	--	--	$ 600,000	2027-2030
Annual Sewer Line Replacement	--	--	--	--	--	--	$ 1,500,000	2031-2040

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	100%	$ 2,700,000
Future Users	0%	$ -
Total	100%	$ 2,700,000

Notes on Cost Estimation:

Project Number: WWO-1
Project Name: Wastewater Master Plan Update
System Type: Wastewater Collection System

Project Description:

It is recommended that the City undergoes a Sewer Master Plan Update every 5-years to evaluate wastewater collection system.

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost(1) ($/ft)	Baseline Construction Cost ($)	Capital Improvement Cost(2) ($)	Project Schedule
Wastewater Master Plan Update	--	--	--	--	--	--	$ 150,000	2027
Wastewater Master Plan Update	--	--	--	--	--	--	$ 150,000	2031-2040
Wastewater Master Plan Update	--	--	--	--	--	--	$ 150,000	2031-2040

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	50%	$ 225,000
Future Users	50%	$ 225,000
Total	100%	$ 450,000

Notes on Cost Estimation:

Project Number: WWO-2
Project Name: Wastewater Treatment Plant Expansion Phase 2C
System Type: Wastewater Treatment Plant Expansion

Project Description:
Wastewater treatment plant expansion Phase 2C is fully designed but has yet to be completed.

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost(1) ($/ft)	Baseline Construction Cost ($)	Capital Improvement Cost(2) ($)	Project Schedule
Phase 2C	--	--	--	--	--	--	$ 35,000,000	2026

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	0%	$ -
Future Users	100%	$ 35,000,000
Total	100%	$ 35,000,000

Notes on Cost Estimation:

Project Number: WWO-3
Project Name: Wastewater Treatment Plant Expansion Phase 3
System Type: Wastewater Treatment Plant Expansion

Project Description:

It is recommended that the Phase 3 wastewater treatment plant expansion will include the following: Grit removal basin #3, circular clarifier #3, primary sludge pump station #2, primary effluent equalization tank #2, aeration basin #5, secondary clarifier #2, new WAS and mixed liquor pump station, anaerobic digester #4, removal of 1975 trickling filters, new centrate equalization tank and pump station, and new sludge drying bed #4.

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost[1] ($/ft)	Baseline Construction Cost ($)	Capital Improvement Cost[2] ($)	Project Schedule
Phase 3	--	--	--	--	--	$ 41,175,400	$ 55,587,000	2031-2040

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

Project Cost Allocation:

Reimbursement Category	Percent	Cost ($)
Existing Users	0%	$ -
Future Users	100%	$ 55,587,000
Total	100%	$ 55,587,000

Notes on Cost Estimation:

Project Number: WWO-4
Project Name: Wastewater Treatment Plant Expansion Phase 4
System Type: Wastewater Treatment Plant Expansion

Project Description:

It is recommended that the Phase 4 wastewater treatment plant expansion include an additional effluent screen and channel, new primary clarifier effluent equalization pump station, and new outfall pipeline.

Project Details:

Project Element	Existing Diameter (in)	Proposed Diameter (in)	Replace/ New	Length (ft)	Unit Cost[1] ($/ft)	Baseline Construction Cost ($)	Capital Improvement Cost[2] ($)	Project Schedule
Phase 4	--	--	--	--	--	$ 25,228,200	$ 34,058,000	2041 & beyond

Notes:

(1) ENR San Francisco Construction Cost Index for July 2022 is 15,640.

(2) Estimated Construction Cost includes a 15% general contingency, 10% for design costs, and 10% for construction management.

Project Cost Allocation:

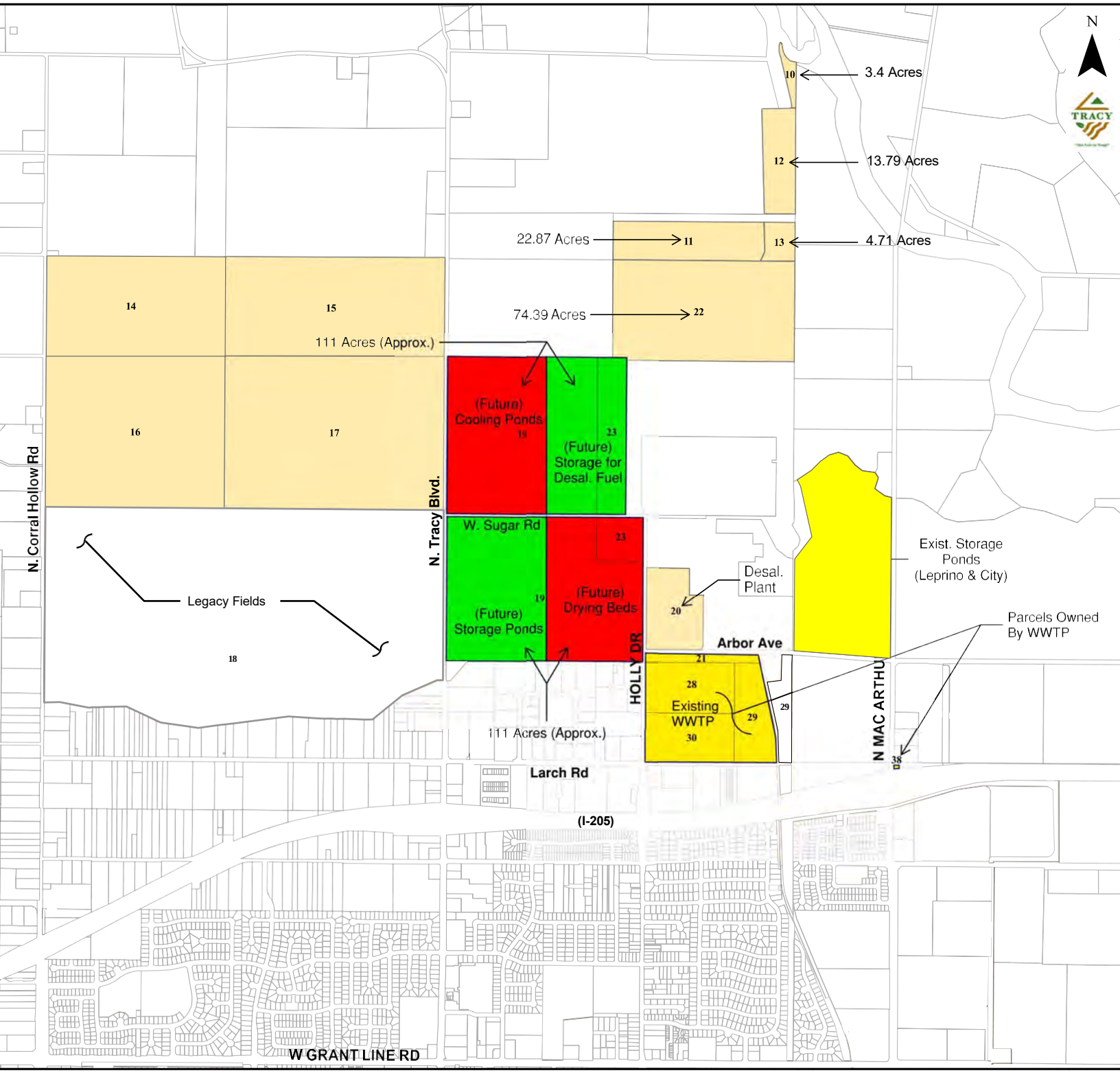
Reimbursement Category	Percent	Cost ($)
Existing Users	0%	$ -
Future Users	100%	$ 34,058,000
Total	100%	$ 34,058,000

Notes on Cost Estimation:

Appendix F

WASTEWATER TREATMENT PLANT EXPANSION AREAS

FUTURE EXPANSION AREAS OF THE WWTP



LEGEND

- CITY (WASTEWATER ENTERPRISE FUND) OWNED PARCELS
- FOR FUTURE EXPANSION & USES OF THE WWTP
- FOR FUTURE EXPANSION & USES OF THE WWTP

NOTE:
Most of the existing lands shown above is under leases to farms for Agricultural uses.

September 5, 2023

Agenda Item 3.C

RECOMMENDATION

Staff recommends that City Council review and discuss the Citywide Water System Master Plan Update.

EXECUTIVE SUMMARY

This item is for the City Council to review and discuss the Citywide Water System Master Plan Update (Master Plan Update). The proposed Master Plan Update will update the water infrastructure needed by the City to serve the new development identified in the City's General Plan and the growing population of the City.

BACKGROUND AND LEGISLATIVE HISTORY

The City's existing Water Master Plan was approved in January 2013 (Existing Master Plan). The Existing Master Plan was based on the City's 2011 General Plan (as amended, General Plan). The City has incorporated many general plan amendments since the 2011 adoption of the Existing Master Plan and has seen a significant increase in residential and commercial development throughout the City. The General Plan identifies existing and new areas of development within and around the existing City limits, including areas east of the City up to Chrisman Road, to the west of the City up to the Altamont Pass south of I-205, and the Larch Clover area both north and south of I-205.

ANALYSIS

The Master Plan Update provides an evaluation of the potable water and recycled water system facilities required to serve the City's existing and future needs. 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.

The evaluation of the City's water supplies in the Master Plan Update was coordinated with the City's 2020 Urban Water Management Plan, which was adopted by the Tracy City Council in June 2021. Due to unprecedented drought conditions from 2012 through 2017 and new flow restrictions resulting from the 2018 Water Quality Control Plan for the San Francisco Bay/Sacramento San Joaquin Delta Estuary, the projected water supply of the City's surface water from the Central Valley Project (CVP) and South San Joaquin Irrigation District (SSJID) have been significantly reduced, particularly in dry years. Water supply conditions in California continue to change and City staff are closely monitoring potential impacts to the City's water supplies.

Recommended infrastructure improvements for the City's potable water system include new storage tanks, new Aquifer Storage and Recovery (ASR) wells, new transmission and distribution pipelines to extend the City's water system to serve proposed new development areas, and an expansion of the City's John Jones Water Treatment Plant (JJWTP) to provide additional water treatment capacity and operational flexibility, including a new building to

provide additional administrative and maintenance space for future staffing needs. The City also intends to participate in Contra Costa Water District's proposed Los Vaqueros Reservoir Expansion Project and United States Bureau of Reclamation (USBR) B.F. Sisk Dam Raise and Reservoir Expansion Project, both of which would provide the City with reliable options for storage of excess water during wet seasons for use during drought conditions.

Recommended infrastructure improvements for the City's recycled water system include new pump stations, a new storage tank, and new transmission, and distribution pipelines to serve new development areas in the western, southern and eastern portions of the City. Because the conversion of existing irrigated areas can be costly and disruptive, the Master Plan Update focuses on the infrastructure needed to deliver recycled water supplies to new development areas where practical and taking advantage of the recycled water infrastructure that has been constructed to date.

The Master Plan Update also includes a proposed Recycled Water Exchange Agreement with the 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 JJWTP for potable use. 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.

Staff anticipates a decrease to the water development impact fees due to an overall decrease in water usage per household and drought conservation efforts.

FISCAL IMPACT

This item is to only to review and receive feedback regarding the Master Plan Update. The cost of completion of the Master Plan Update was funded from program management fees collected through our development impact fee program. The cost of construction of the physical infrastructure listed in the Master Plan Update would, if approved, be funded through development impact fees or other funding mechanisms without any impact to the City's General Fund.

PUBLIC OUTREACH / INTEREST

A Public Outreach Meeting was held for the Master Plan Update on February 14, 2022.

COORDINATION

The City's Engineering Division coordinated with our Operations and Utilities Department and West Yost & Associates to complete this update.

CEQA DETERMINATION

The project is an informational item only and exempt from the California Environmental Quality Act as no discretionary action is being taken by the City Council.

STRATEGIC PLAN

This agenda item supports the City of Tracy's Quality of Life Strategic Priority, which is to provide an outstanding quality of life by enhancing the City's amenities, business mix and services, and cultivating connections to promote positive change and progress in our community.

ACTION REQUESTED OF THE CITY COUNCIL

Staff recommends that the City Council review and discuss the Citywide Water System Master Plan Update.

Prepared by: Veronica Child, Management Analyst II

Reviewed by: Koosun Kim, PE, City Engineer / Assistant Director of Development Services
Sara Cowell, Finance Director
Bijal M. Patel, City Attorney
Karin Schnaider, Assistant City Manager

Approved by: Midori Lichtwardt, Interim City Manager

ATTACHMENTS

Attachment A – Citywide Water System Master Plan Update
Attachment B – Presentation – Citywide Water System Master Plan Update

Attachment A

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



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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.

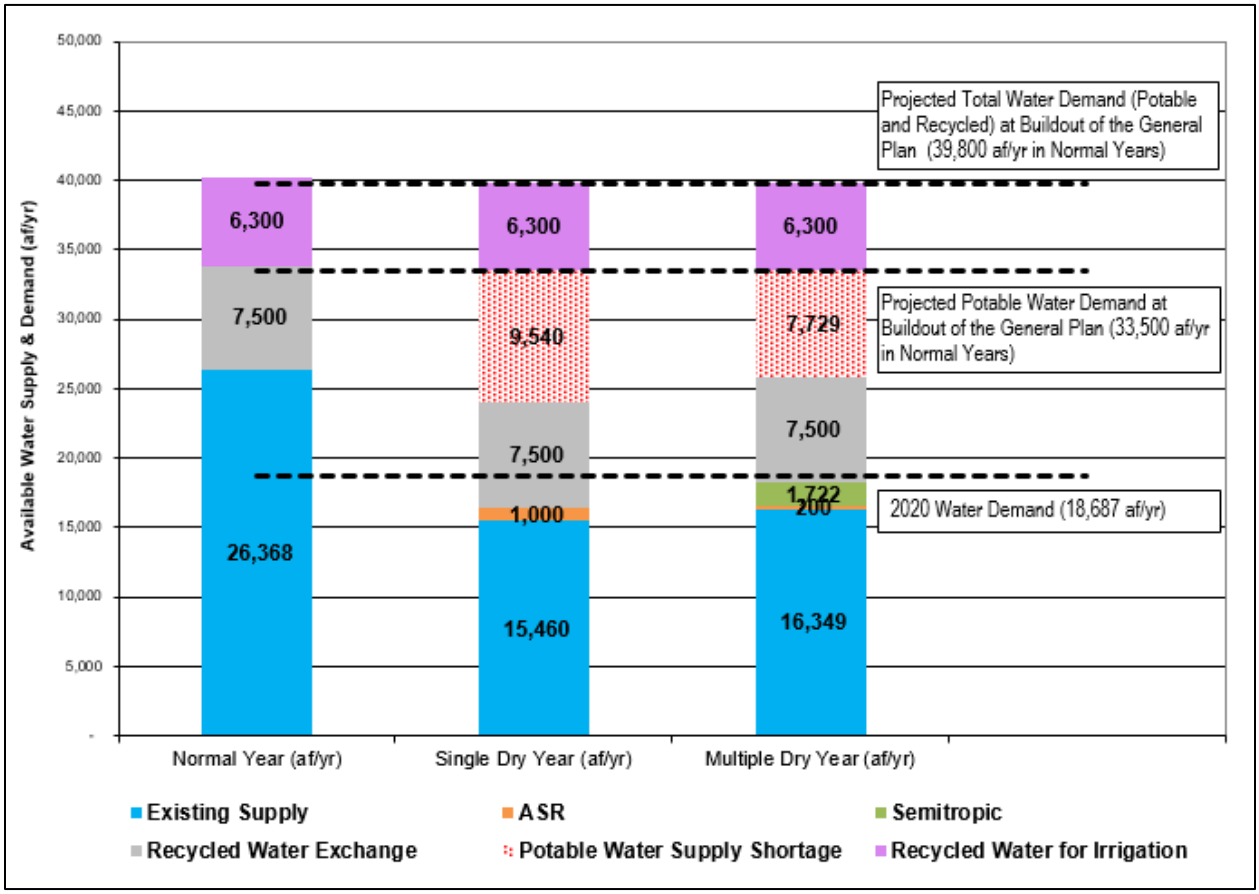


Figure ES-1. Existing and Planned Future Water Supplies vs. Water Demand at Buildout

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

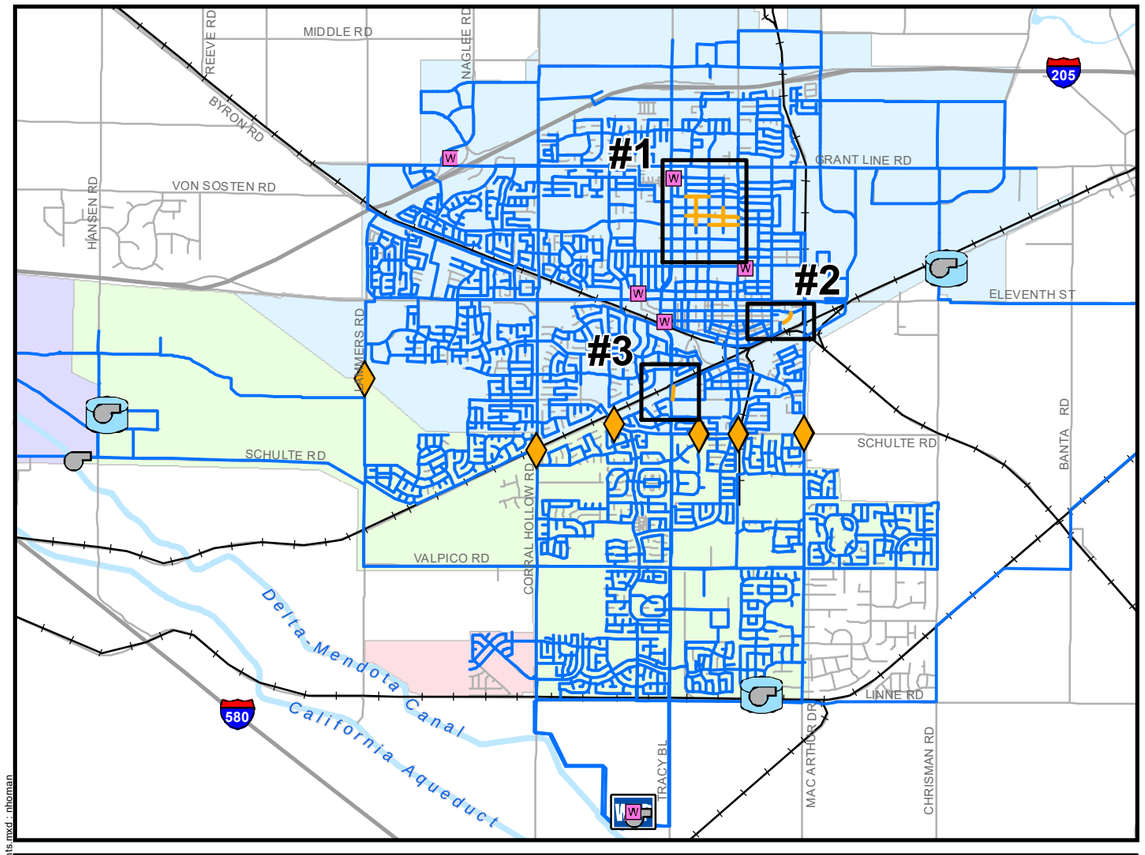
Program facility recommendations for the 2025 potable water system are shown on Figure ES-3 and described below. A complete listing of recommended potable water system improvements (both program and non-program) to serve projected 2025 potable water demands is provided in Chapter 8 along with recommendations for their timing.

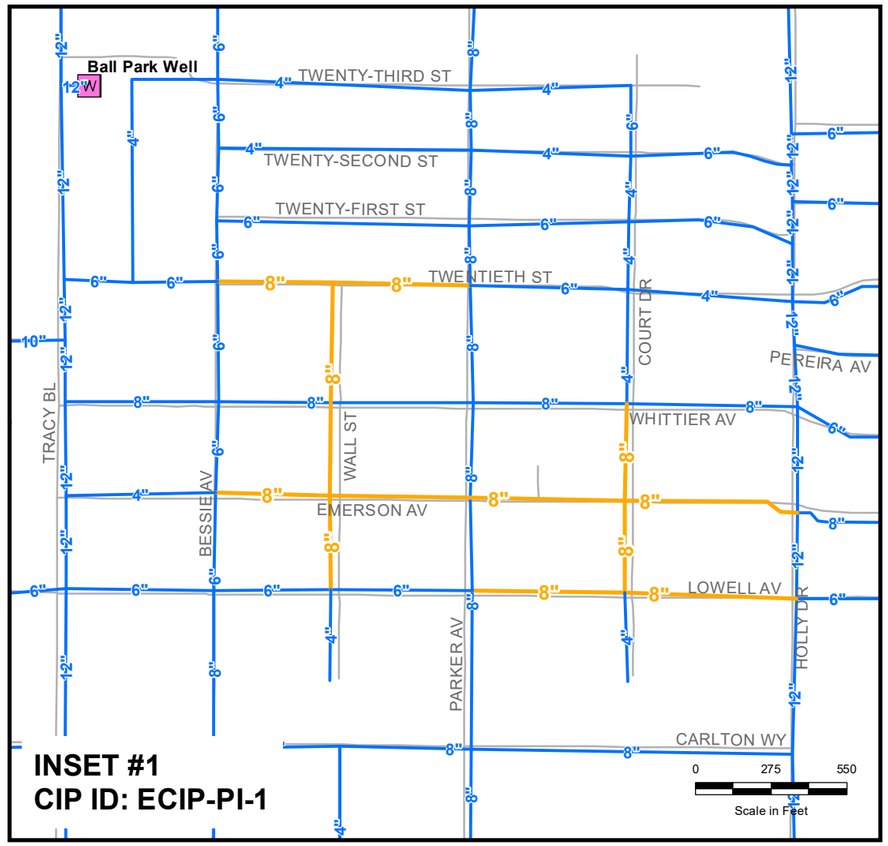
Pipeline Improvements

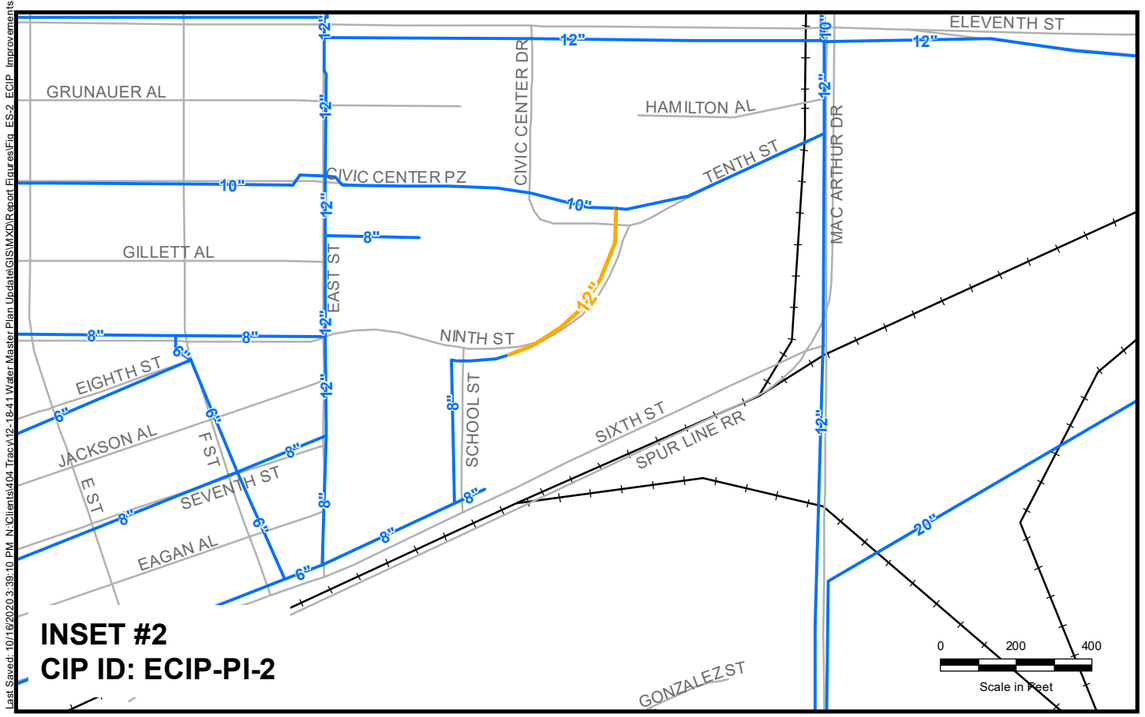
- To serve 2025 potable water demands, replace existing pipelines in Sixth Street, Tracy Boulevard, and Eleventh Street with approximately 1,390 linear feet of new 18-inch and 24-inch diameter pipelines.

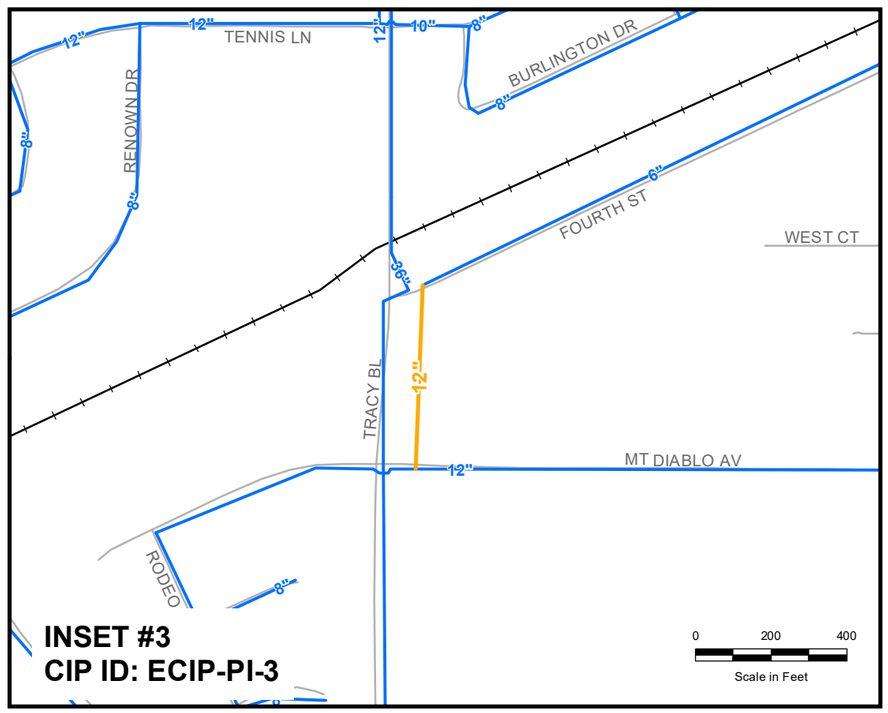
New Potable Water Pipelines

- 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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BETHANY RD
Old River
MOUNTAIN HOUSE PK
REEVE RD
LAMMERS RD
NAGLEE RD
HOLLY DR
BYRON RD
MIDDLE RD
HANSEN RD
VON SOSTEN RD
GRANT LINE RD
ELEVENTH ST
LOVELY RD
BANTA RD
BIRD RD
SCHULTE CT
SCHULTE RD
CORRAL HOLLOW RD
VALPICO RD
IMAC ARTHUR DR
580
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Scale in Feet

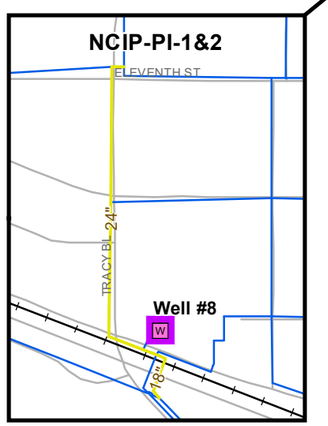
Equip wells with ammonia addition

From Mossdale BPS

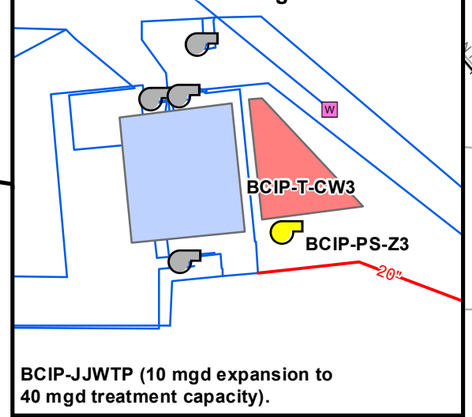
BCIP-T-WS
BCIP-PS-WSZ1&2
BCIP-PRS-WS
BCIP-W-WS
BCIP-W-WA
BCIP-W-LP
BCIP-W-EL
NCIP-PRV-1
NCIP-PRV-2
BCIP-PRV-AV
BCIP-PRV-C

California Aqueduct
Delta-Mendota Canal

NCIP-PI-1&2



JJWTP Buildout Program Facilities



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.

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 ES-3

Recommended Future Potable Water System Program Improvements

City of Tracy
Water System Master Plan Update

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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).

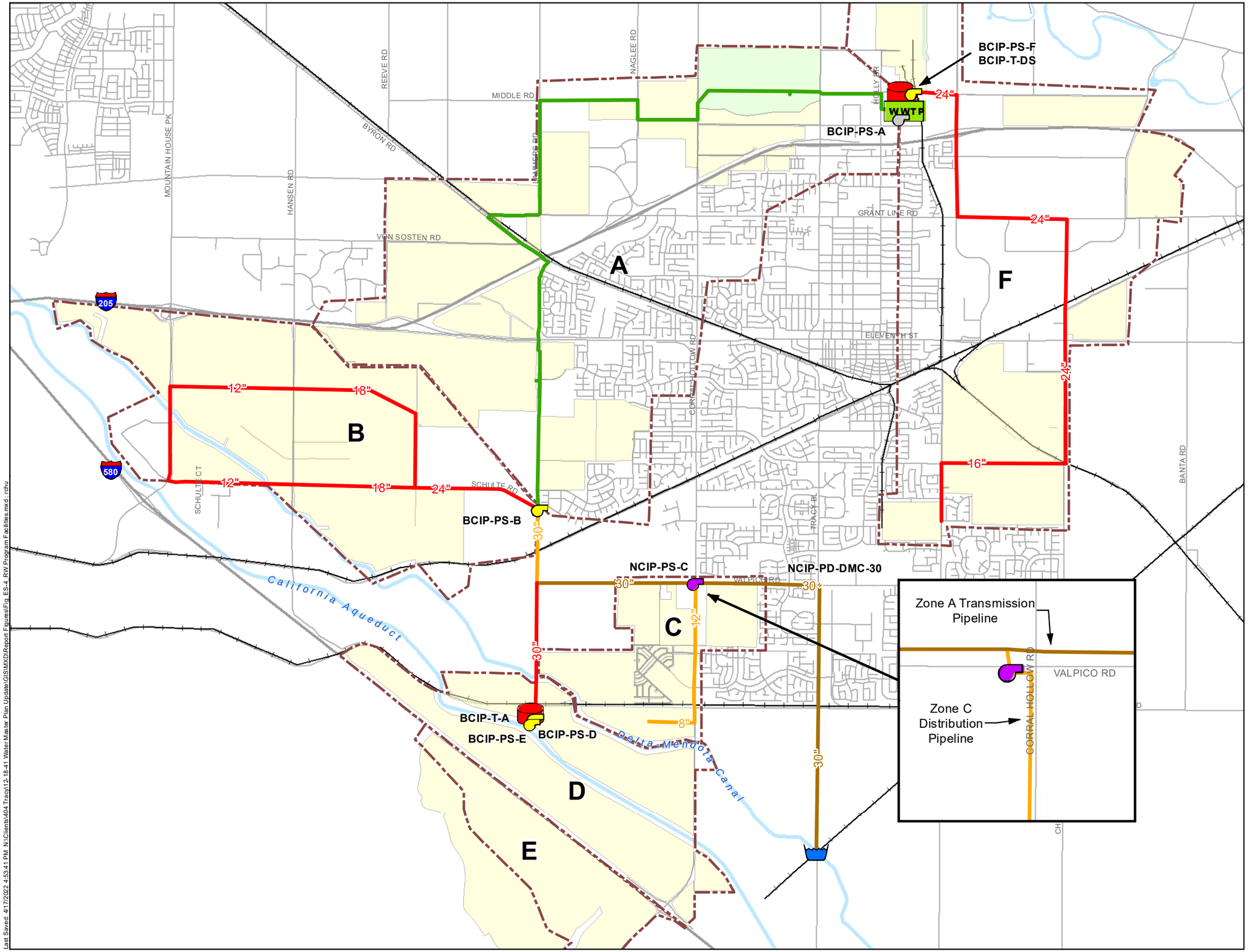
Buildout Recycled Water System

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.

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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

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- Robert Armijo, City Engineer/Assistant Director of Development Services
- Steve Bayley, Project Specialist
- Wayne Bogart, Public Works Superintendent
- 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 .

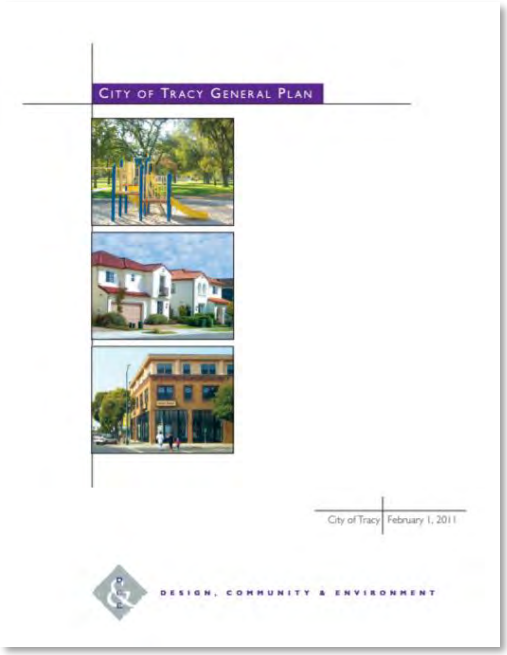
[3] "Common areas" shall include, but not be limited to, golf courses, parks, greenbelts, landscaped streets, and landscaped medians.

- 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

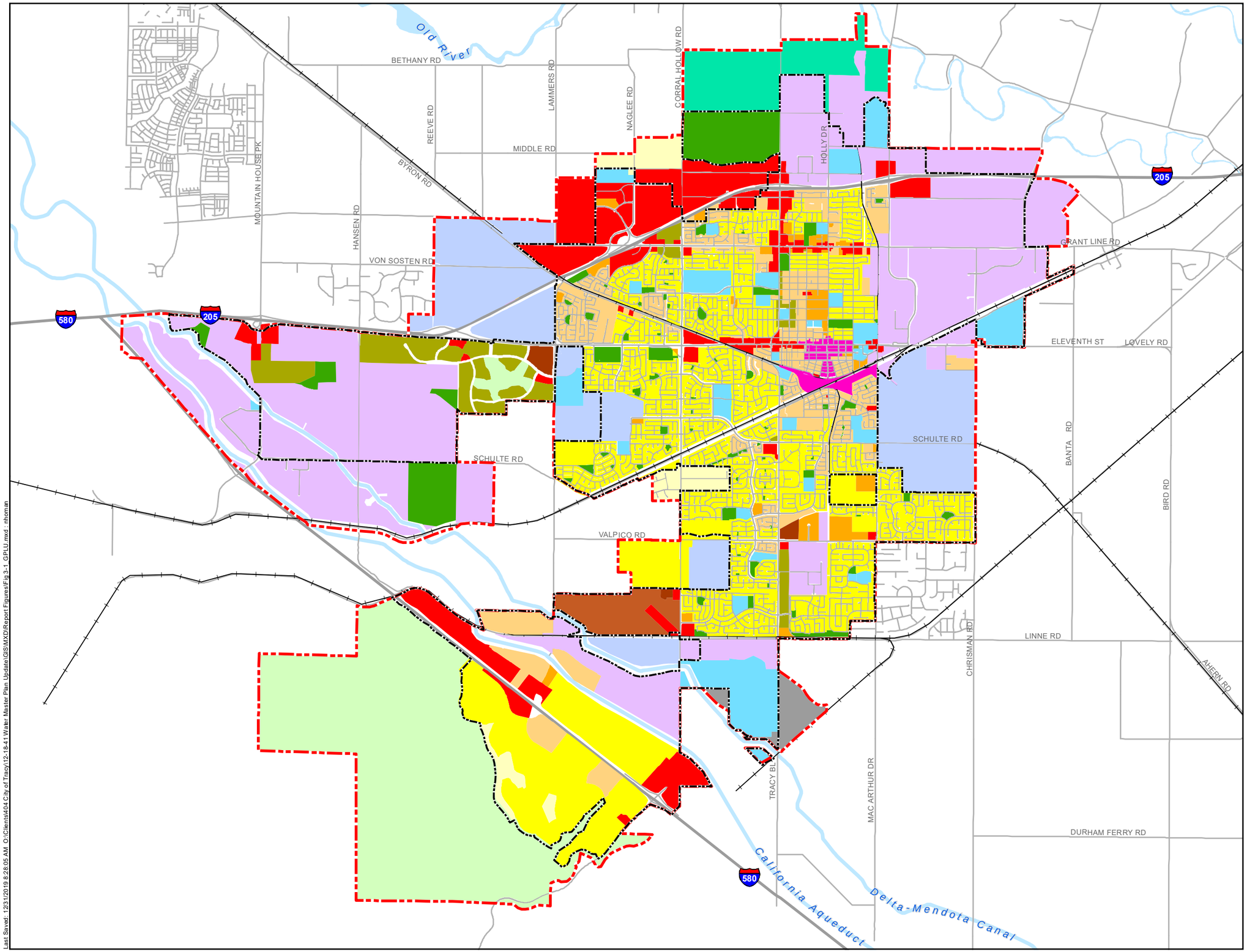
The purpose of this Citywide Water System Master Plan Update is to evaluate the required potable water and recycled water infrastructure to serve buildout of the City's General Plan and Sphere of Influence (SOI). In this Citywide Water System Master Plan Update, the term "buildout" is used to refer to 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.

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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.

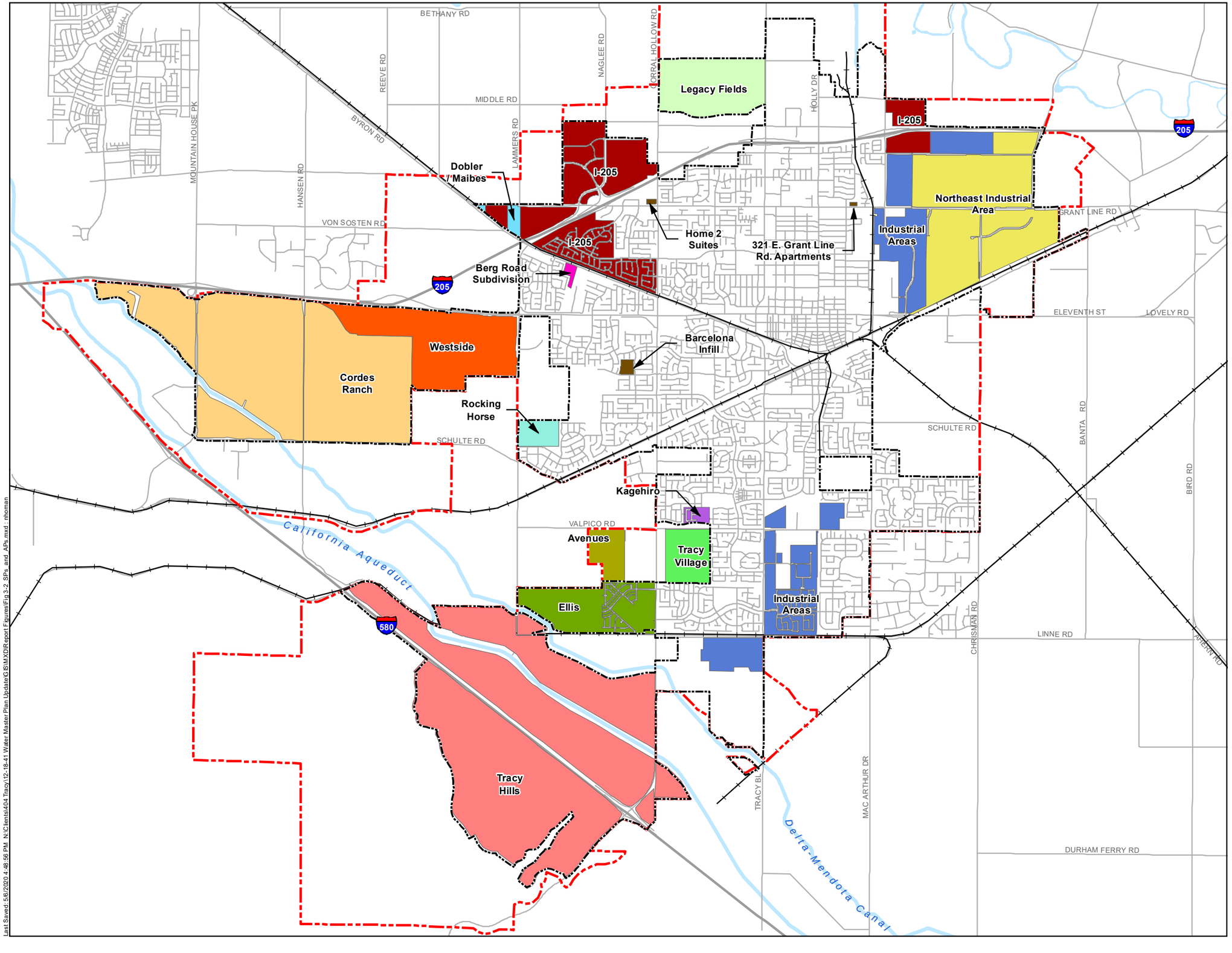
3.3.2 Approved Projects

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.



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.

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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.

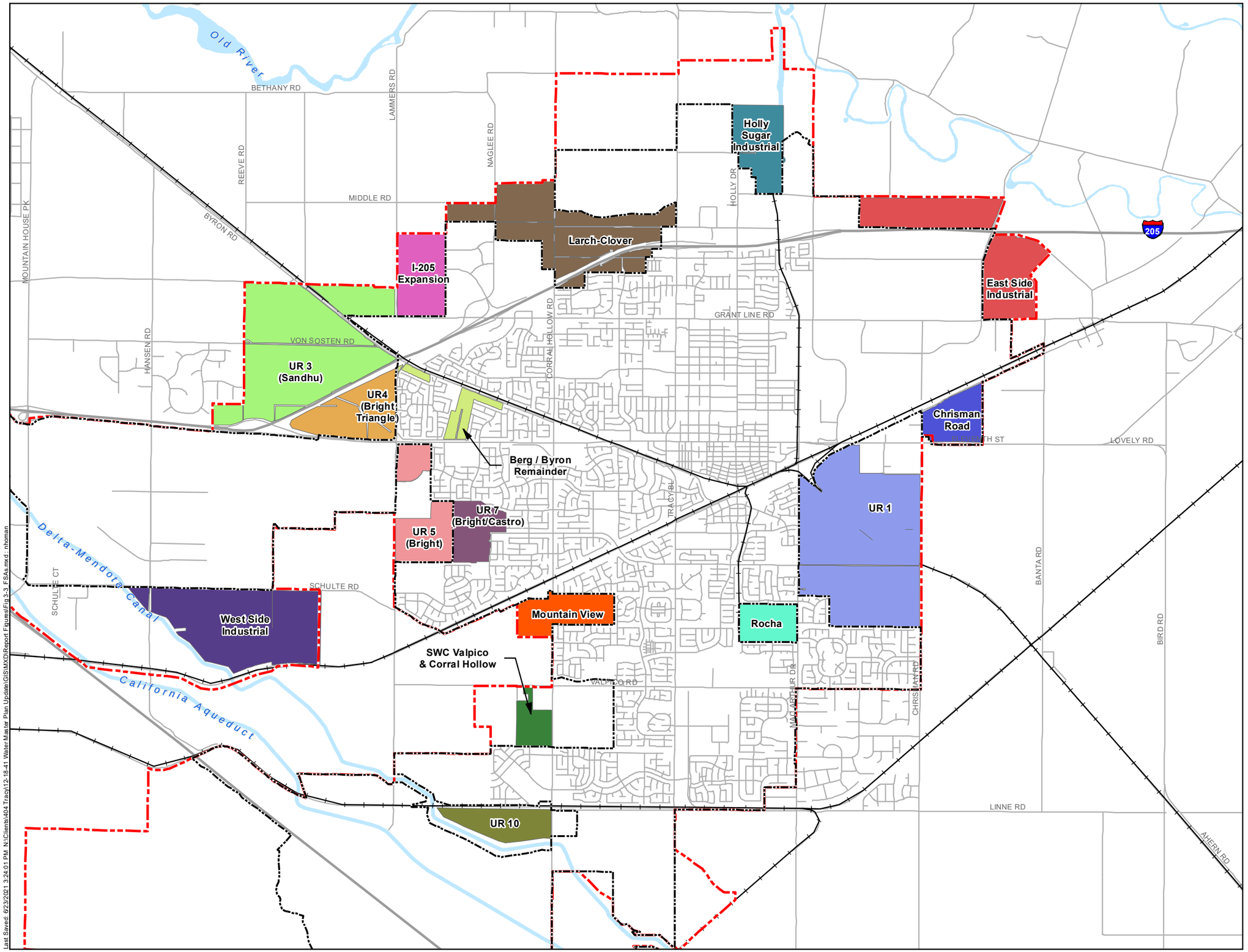
It should be noted that in more urbanized cities throughout California, there has been a recent increase in applications for Accessory Dwelling Units (ADUs), also known as guest houses or granny suites. An ADU is defined as an attached or detached residential dwelling unit built on the same parcel as 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.



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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.

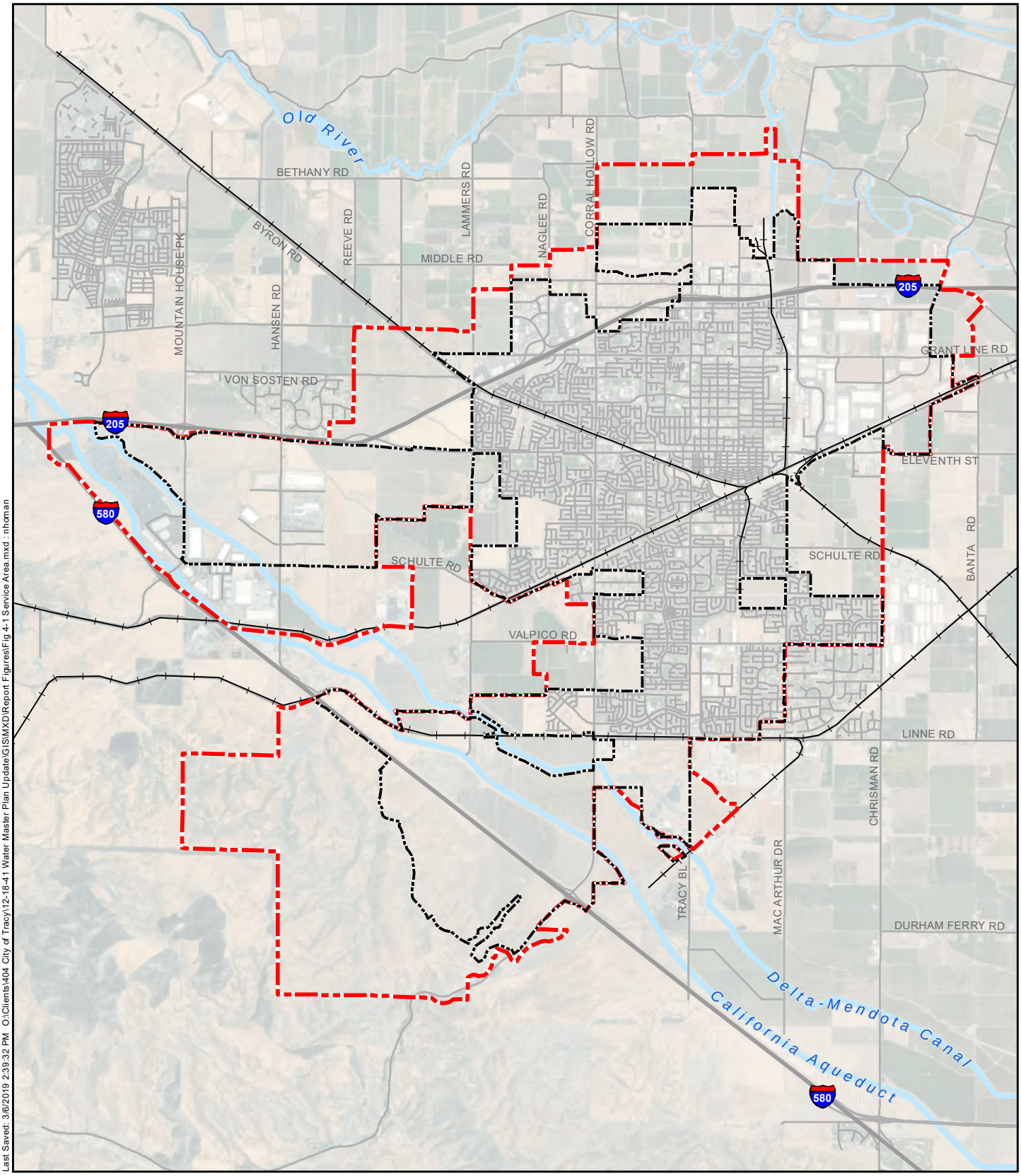
Accurate demand projections also play a key role in helping the City identify and secure sufficient water supplies to serve their customers under various hydrologic conditions. A discussion of the City's existing and future water supplies is provided in Chapter 5 of this Citywide Water System Master 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.



Last Saved: 3/6/2019 2:39:32 PM O:\Clients\404 City of Tracy\12-18-41 Water Master Plan Update\GIS\MXD\Report Figures\Fig 4-1 Service Area.mxd : nhoman

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.

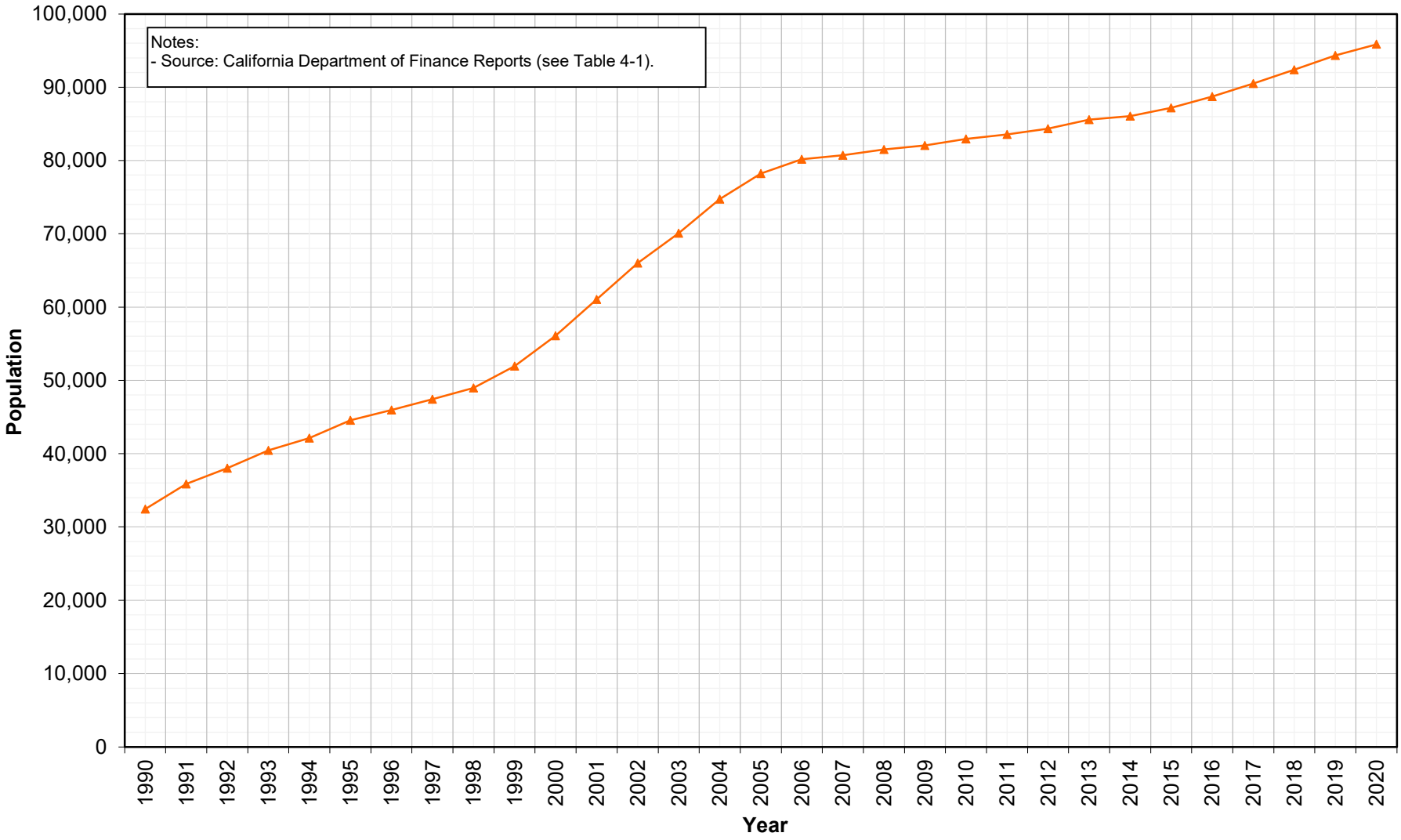
(b) Source: Department of Finance, E-4 Population Estimates for California Cities and Counties, January 1, 1981 to January 1, 1990.

(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)

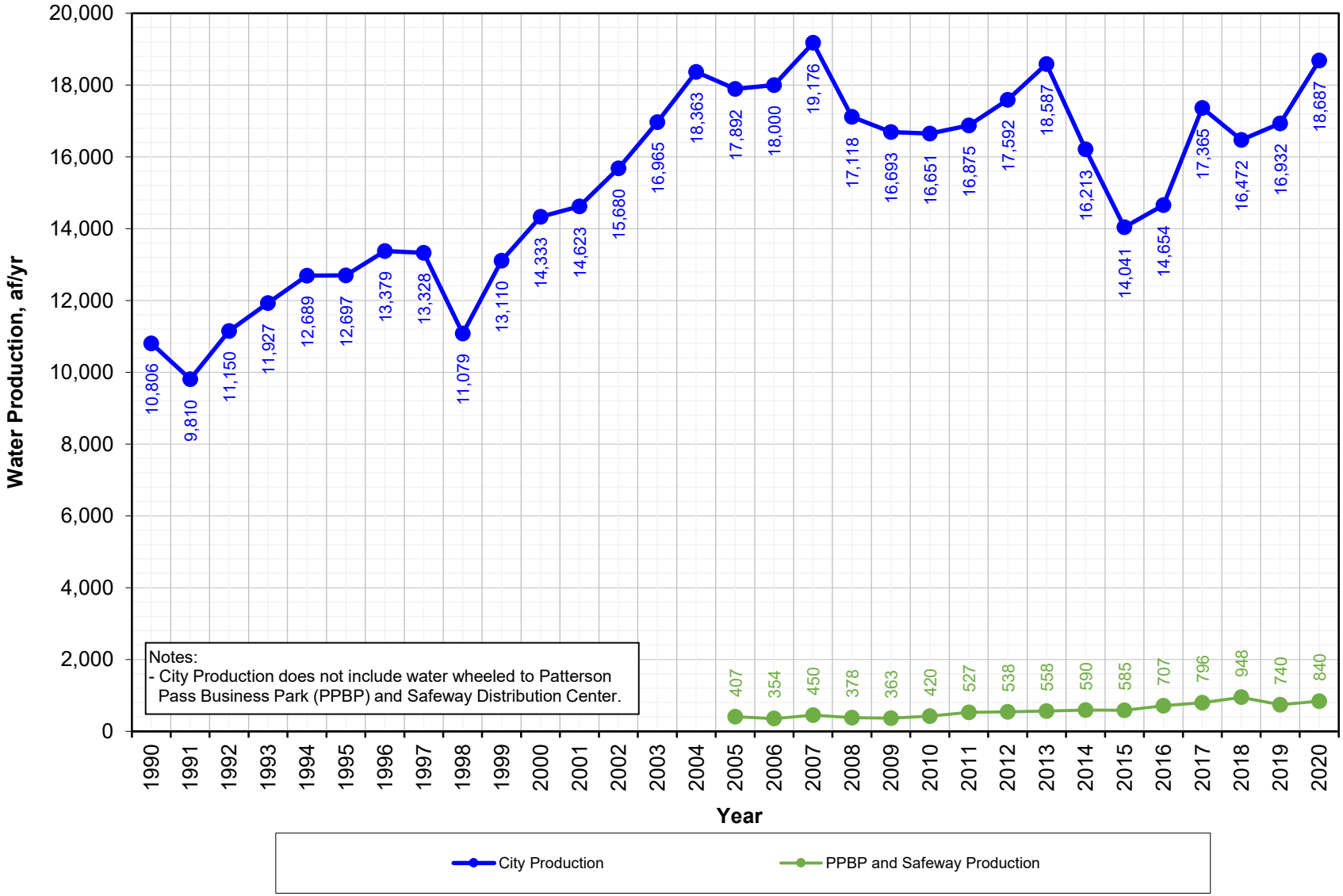


Table 4-3. Historical Annual Potable Water Production including Wheeled Water for Patterson Pass Business Park

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*.

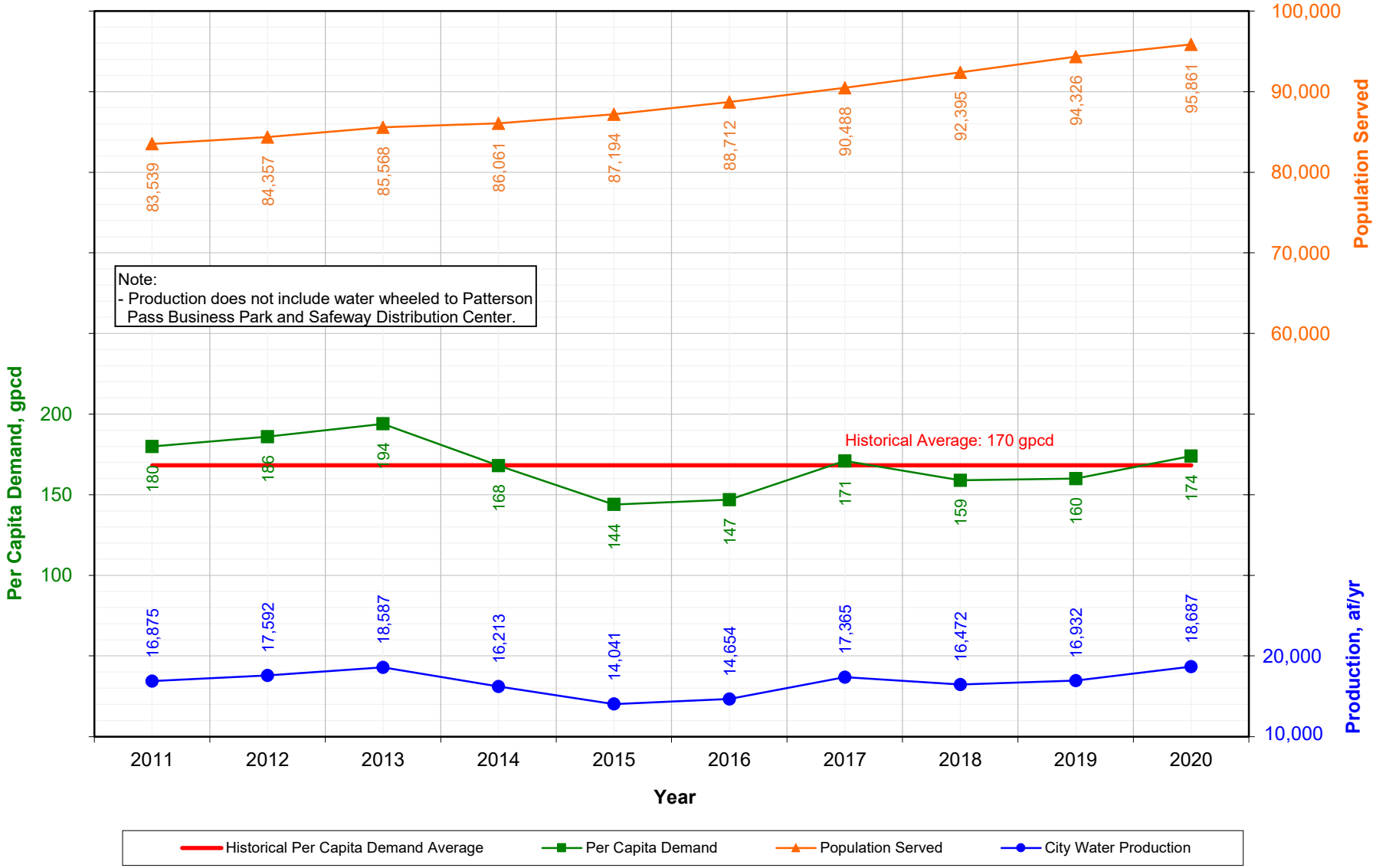
Table 4-7. Historical Per Capita Potable Water Demand

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.

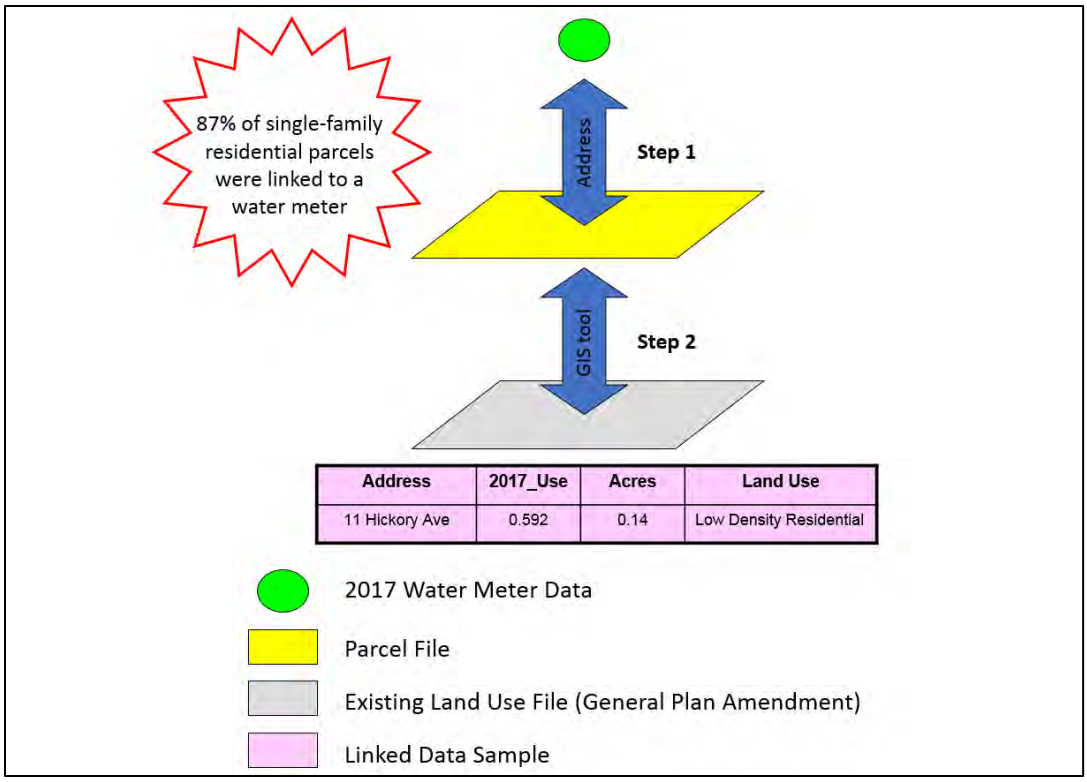


Figure 4-5. Residential Unit Water Demand Factor Methodology

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

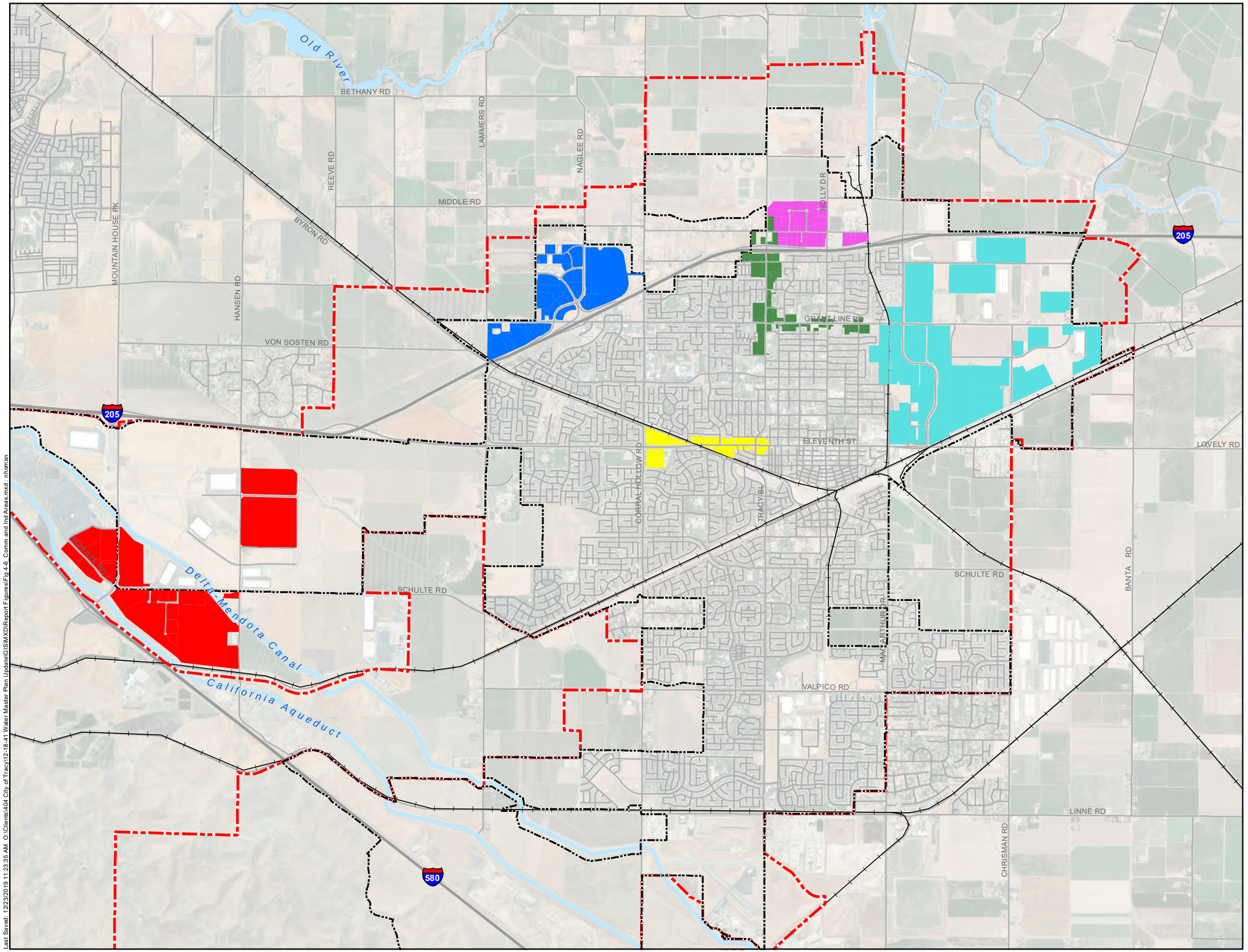
Non-residential land uses generally have multiple water service meters (e.g., domestic and irrigation meters) and multiple addresses associated with a single parcel. Because of this, automatically linking metered water use from multiple meters to a single parcel by address is difficult and would generally 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.

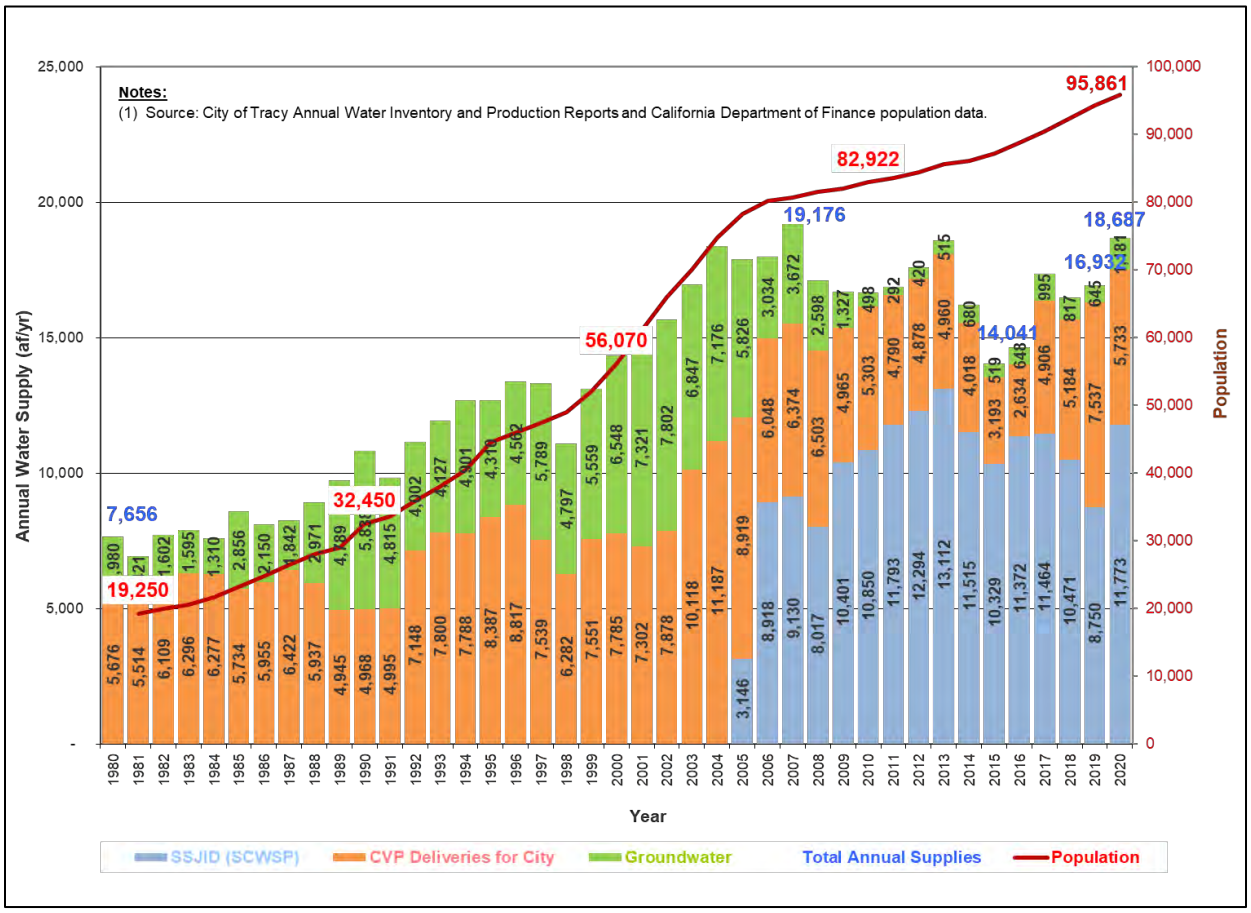


Figure 5-1. Historical Water Supplies

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:

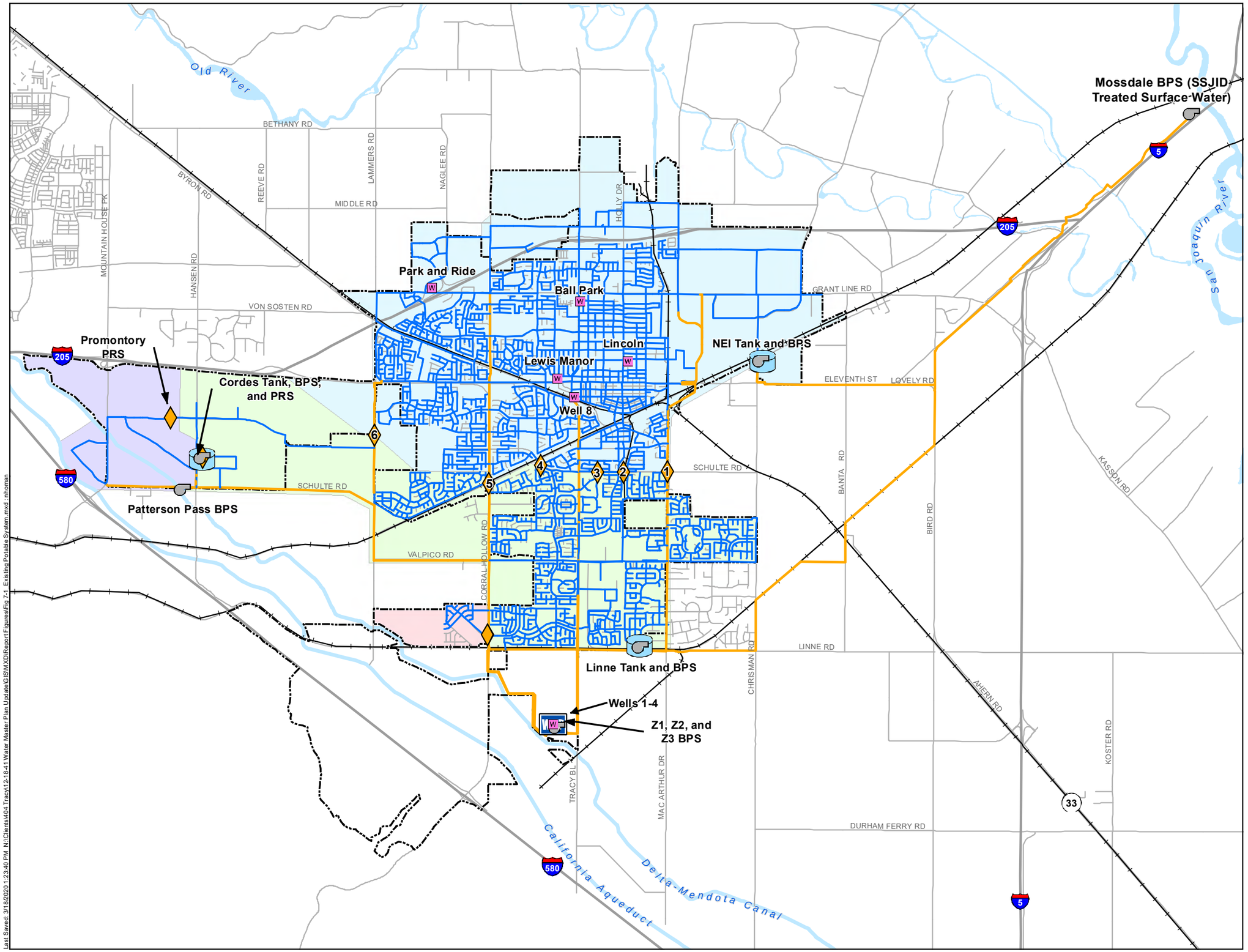
- Description of Existing Potable Water System Facilities
- Hydraulic Model Update
- Existing Potable Water System Evaluation
- Summary of Recommended Existing Potable Water System Improvements

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.



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.

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Figure 7-1

Existing Potable Water System Facilities

City of Tracy
Water System Master Plan Update

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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

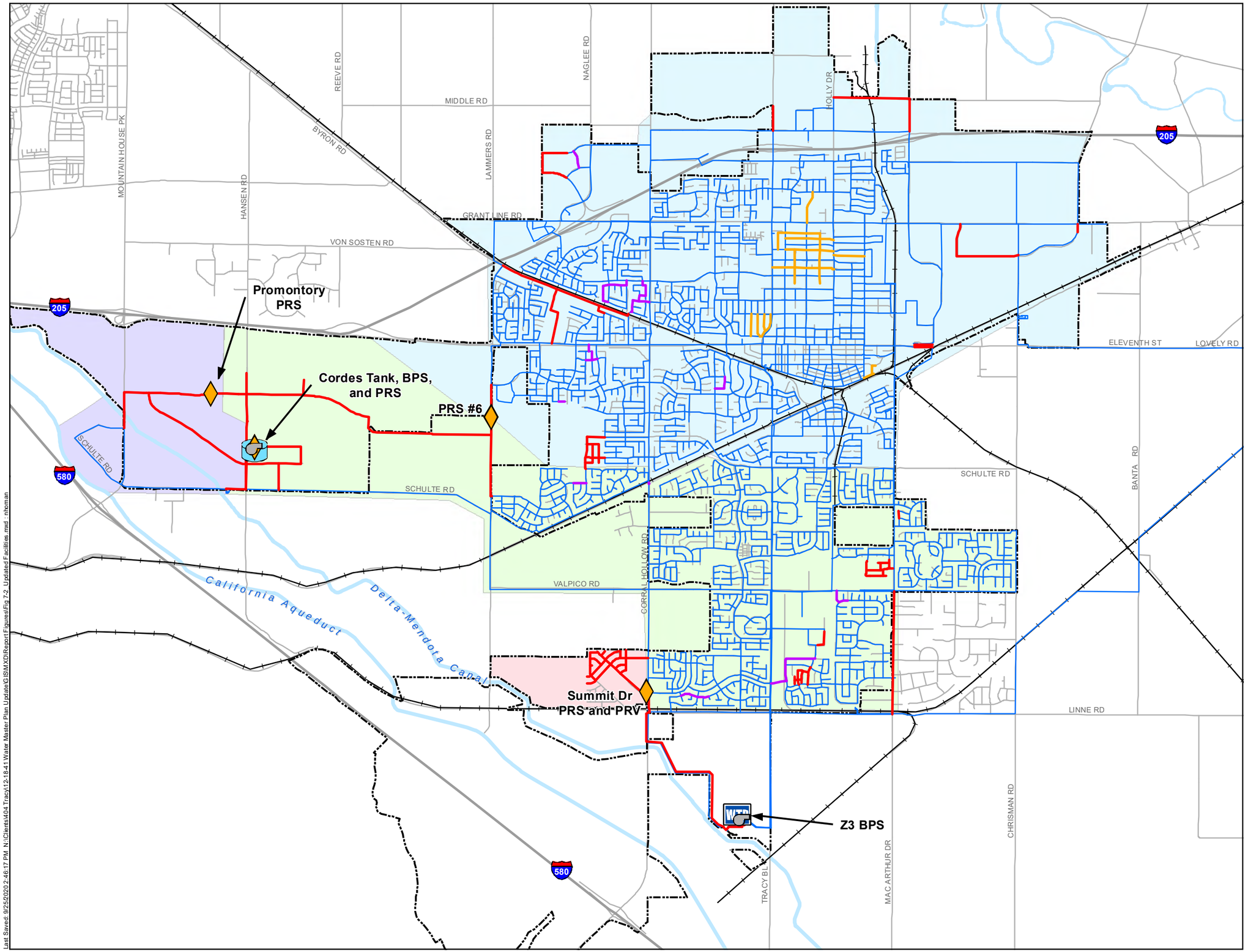
Based on a review of the available facilities data on the existing potable water system, which was provided to West Yost by City staff, the following facilities have been added or revised in the City's existing system hydraulic model since the 2012 WSMP:

- 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.



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*.

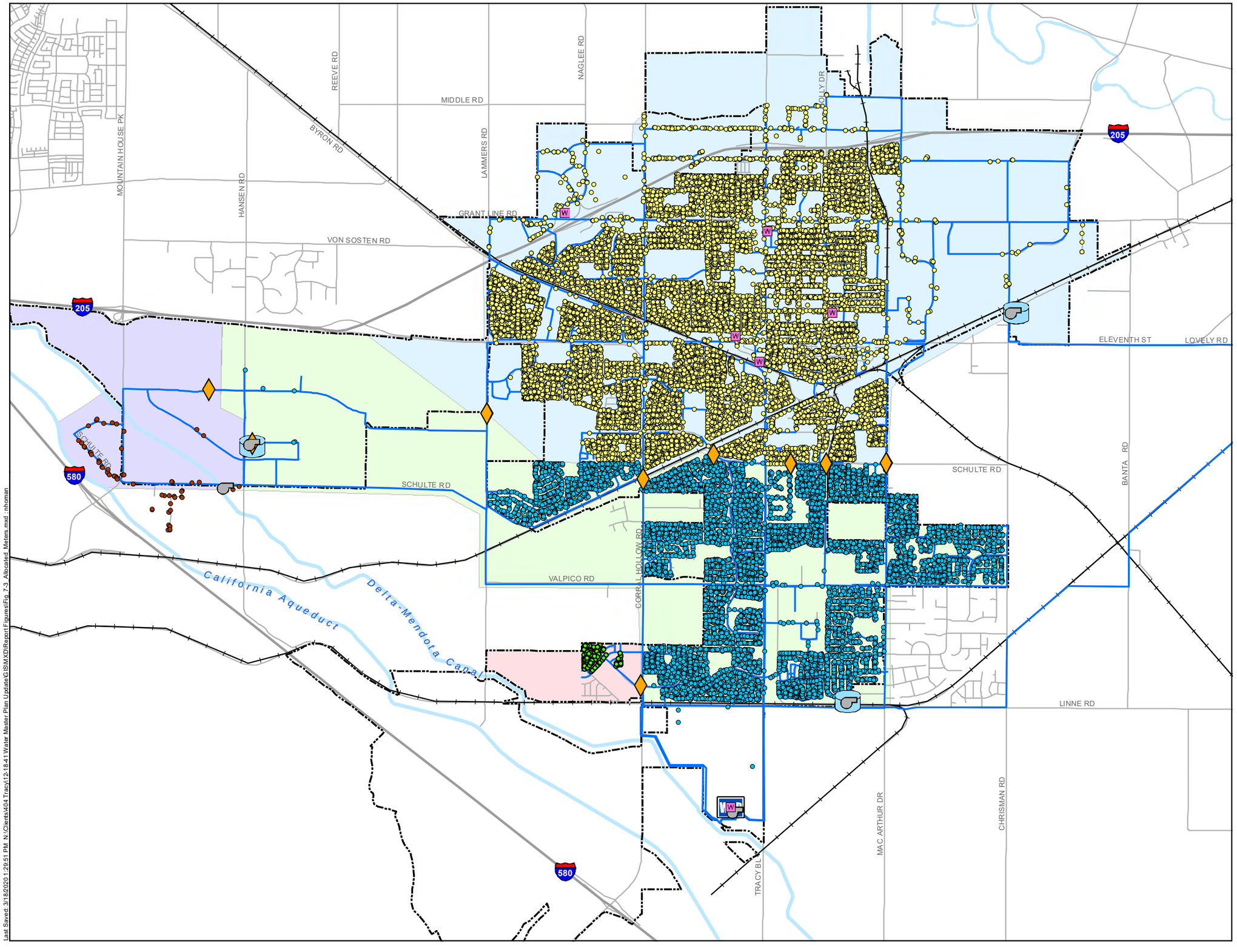
7.4.1 Existing Potable Water Demands

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

City of Tracy
Water System Master Plan Update

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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.

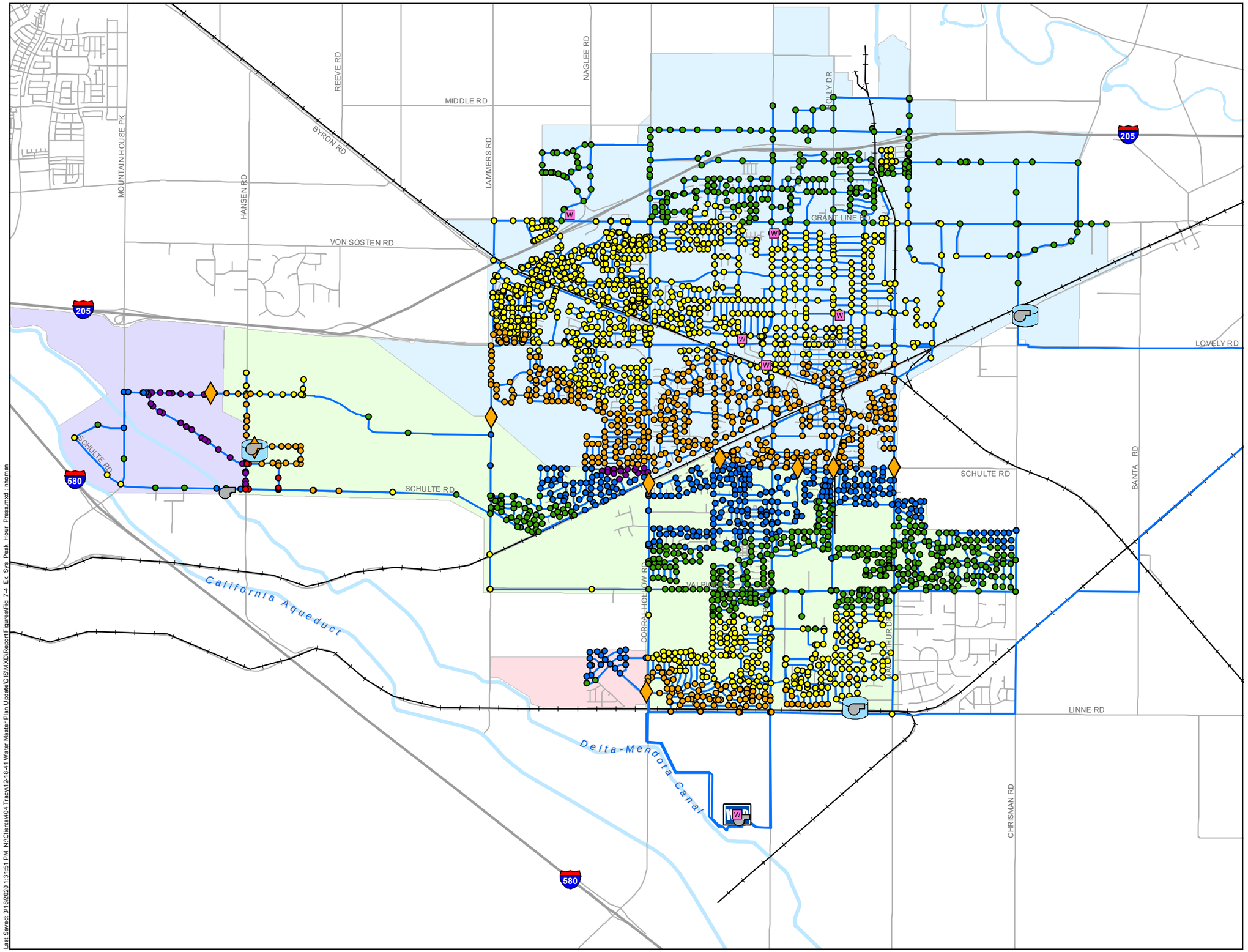
  Recommendation:

  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.



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

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

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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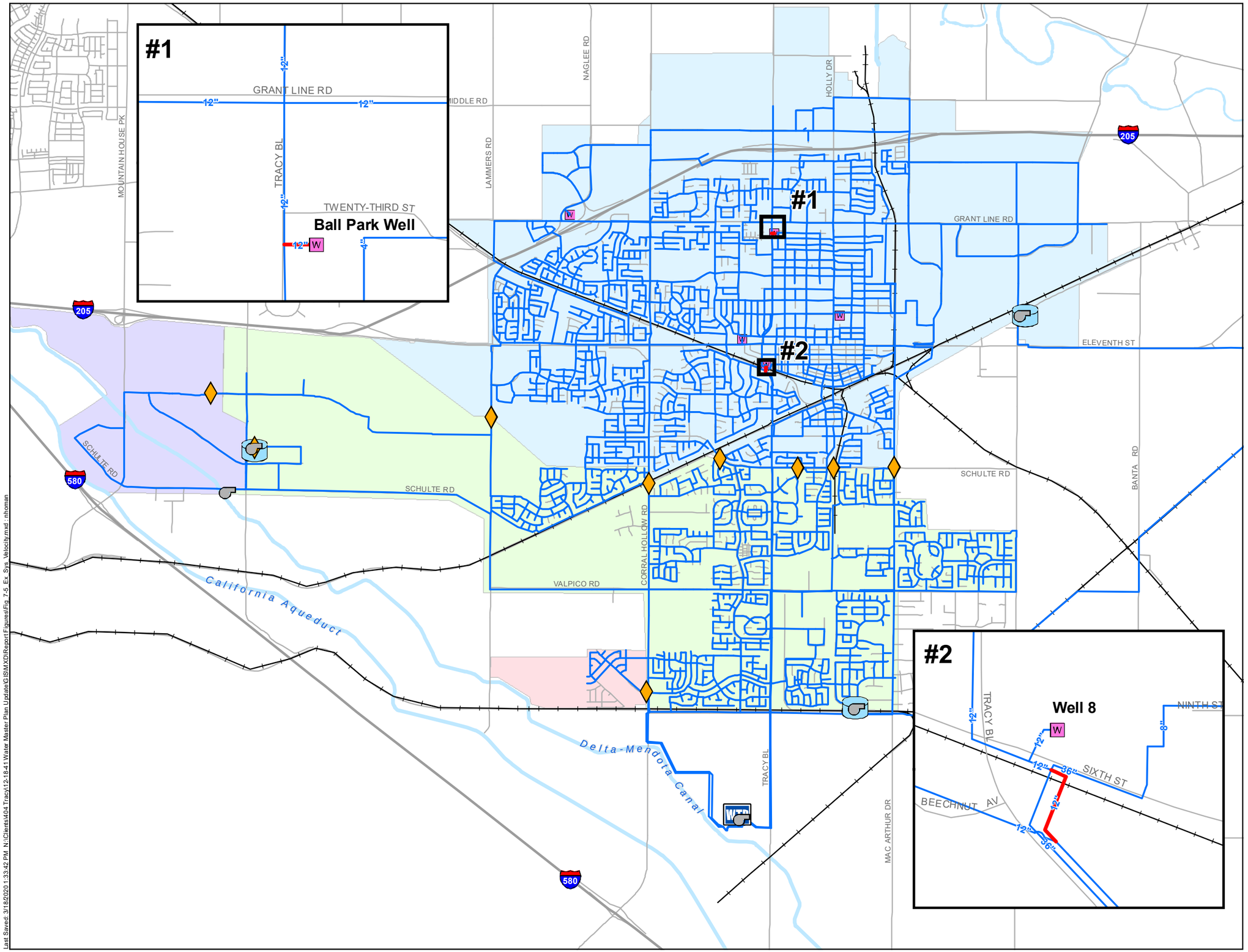
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Figure 7-4

Existing System Pressures Peak Hour Demand

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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.

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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:

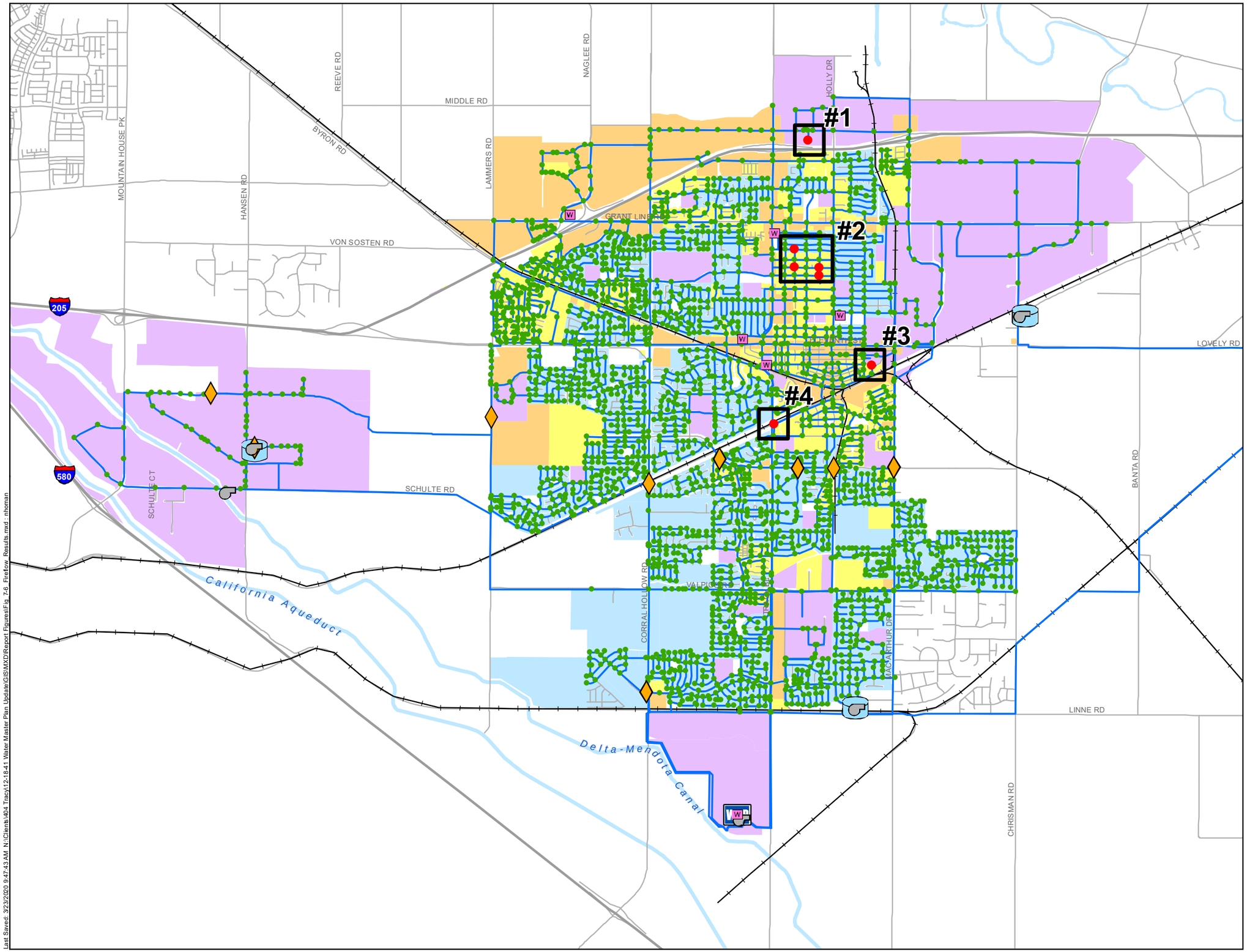
  It is recommended that a new 12-inch diameter pipeline be installed in Ninth Street between School Street and Tenth Street.

- 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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N

0 2,000 4,000

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.

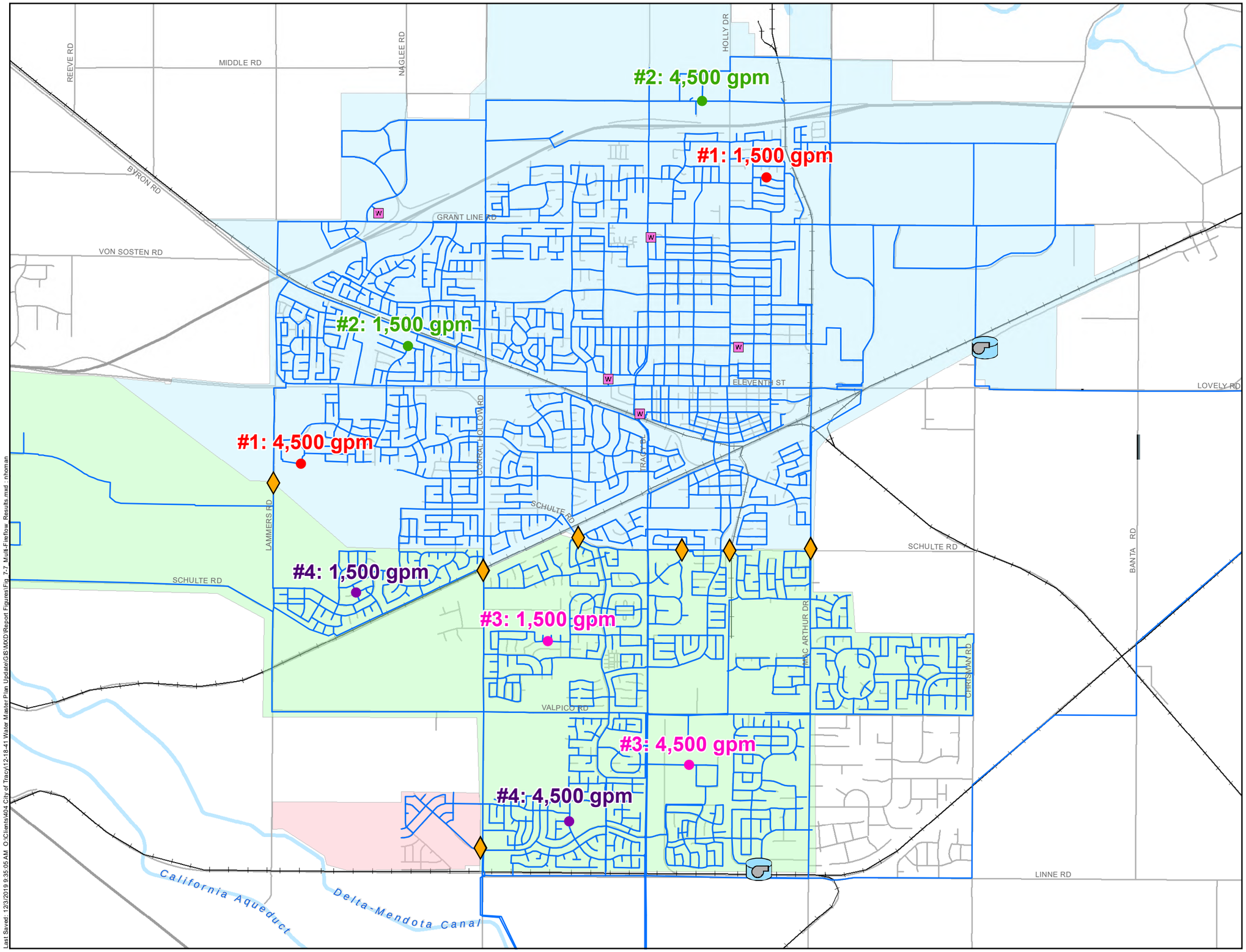
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Figure 7-6

Existing System Available Fire Flow

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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

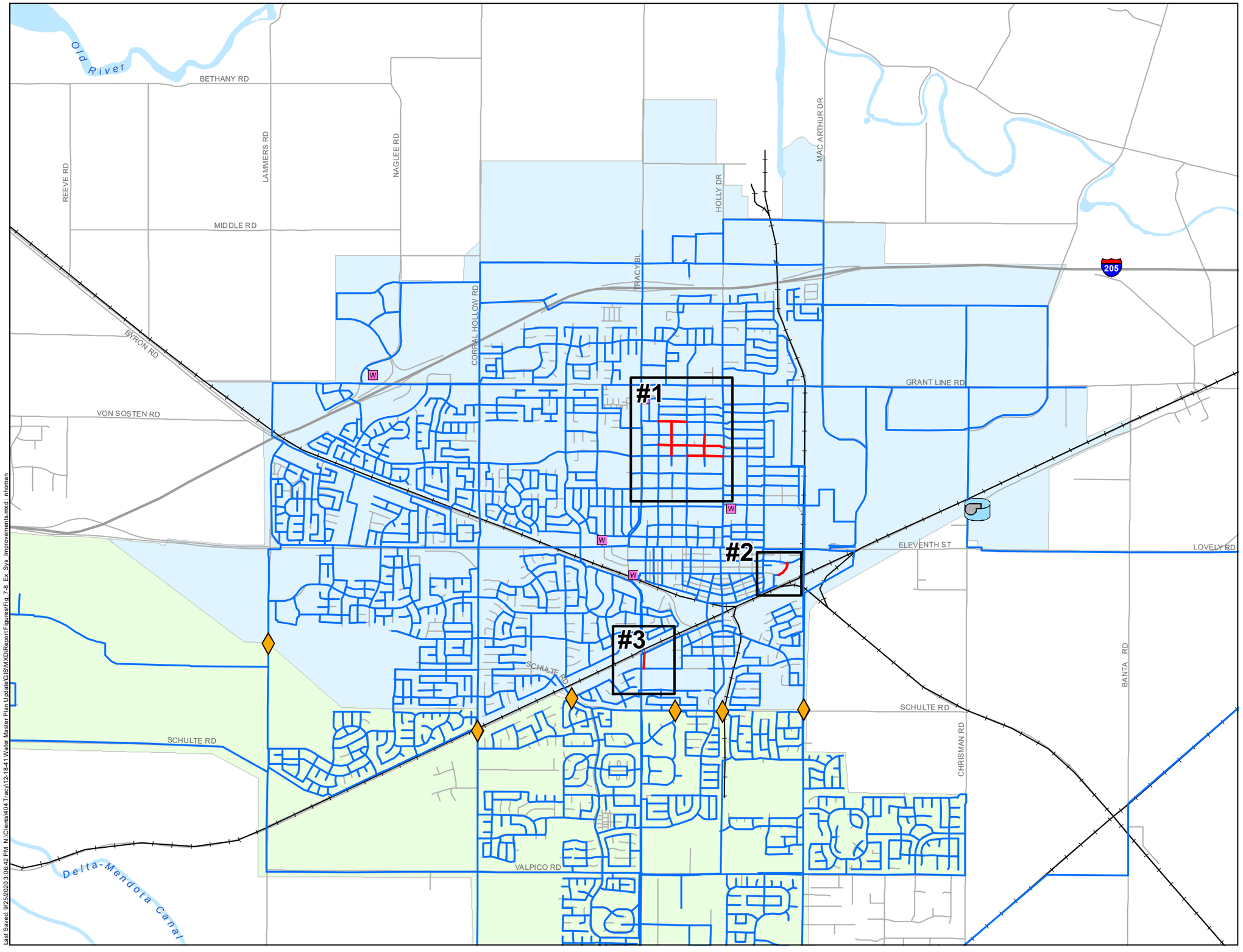
The locations of all recommended pipeline improvements are shown on Figure 7-8.

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

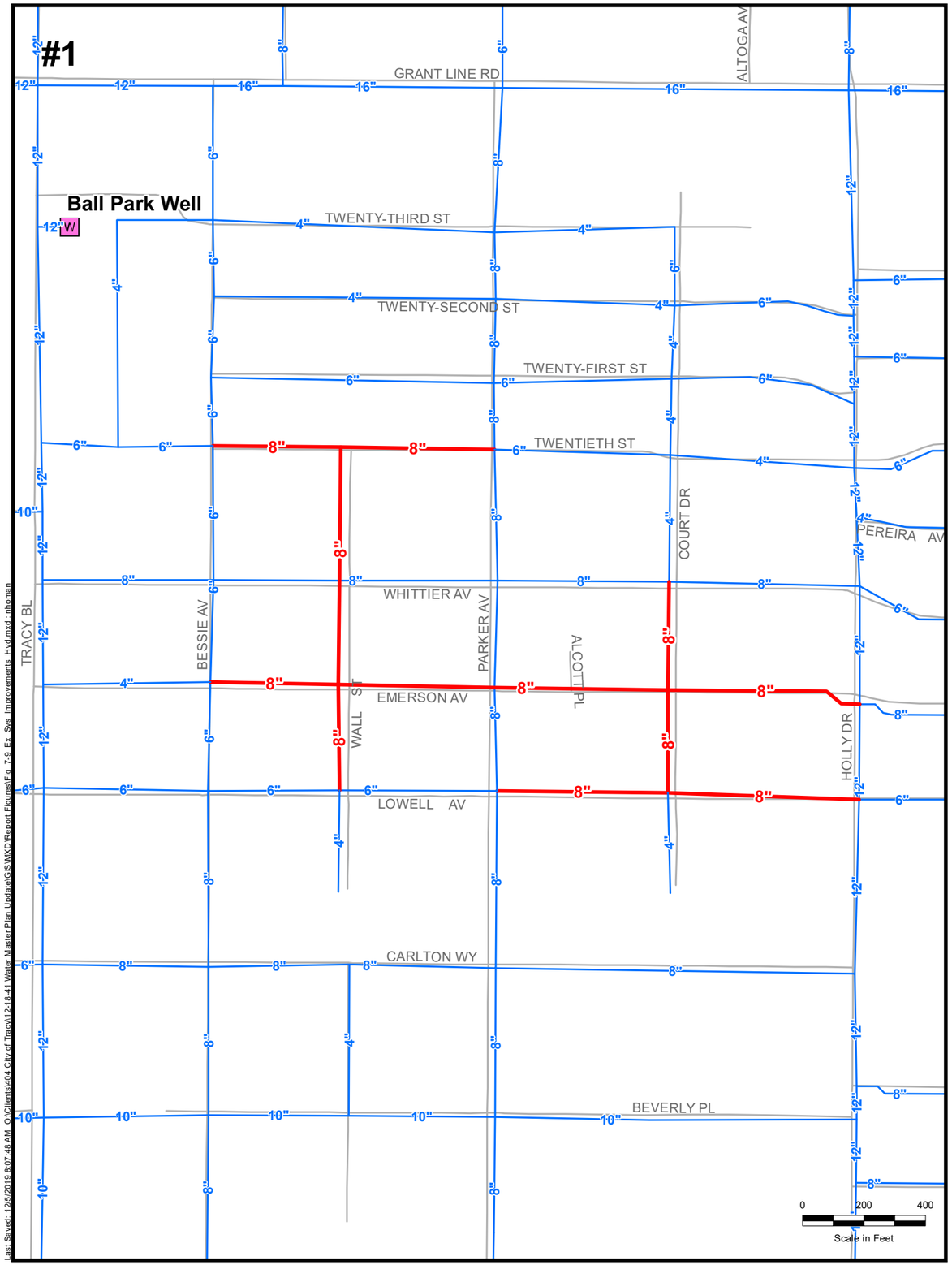
Notes:
1. See Figure 7-9 for detailed views of recommended improvements from hydraulic evaluation (areas #1 - #3).

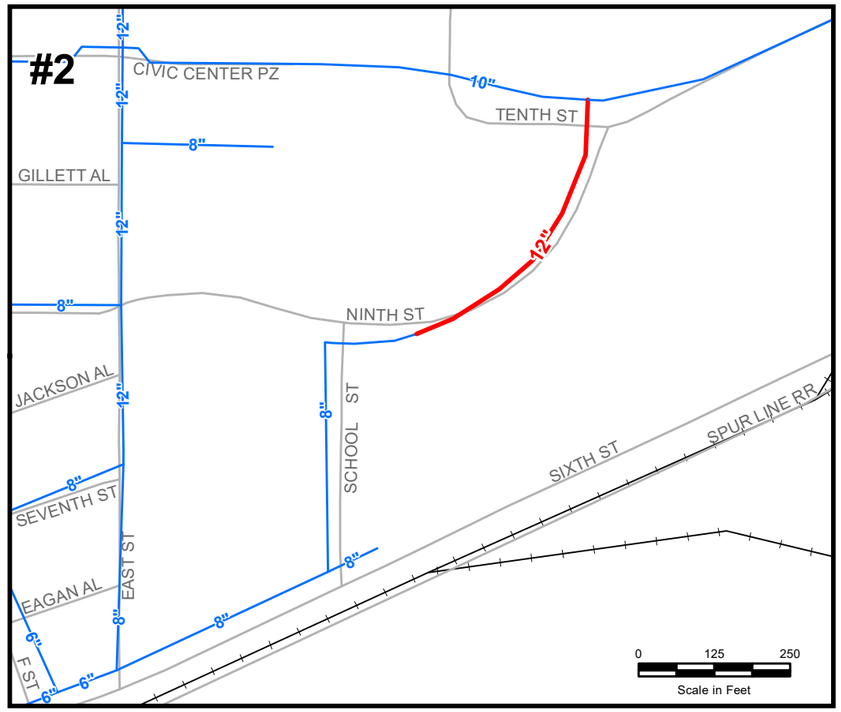
Figure 7-8

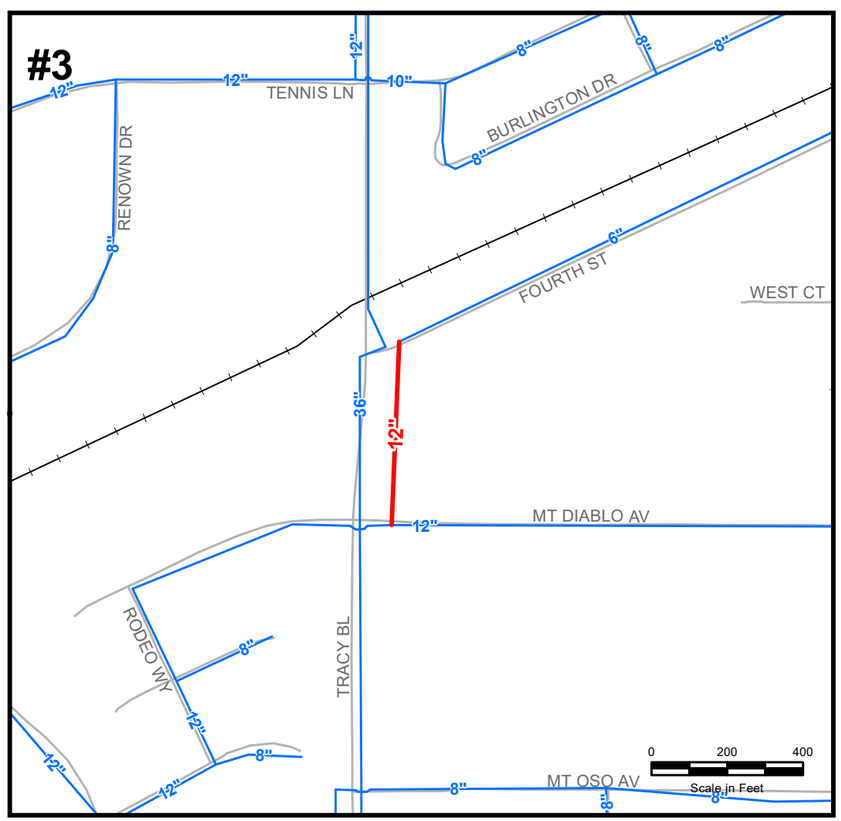
Existing System Recommended Improvements

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N

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

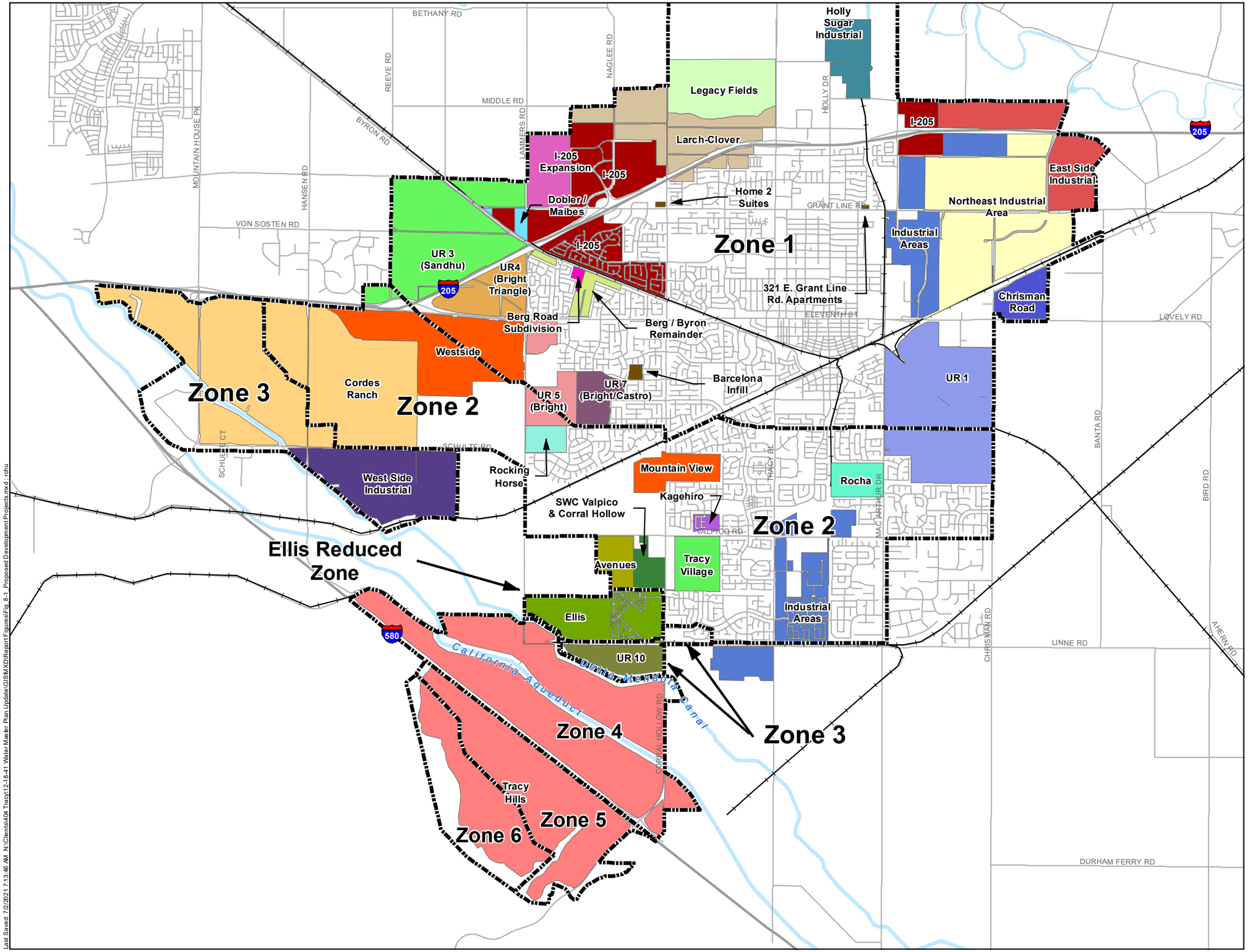
east and tie into the existing pipeline in Linne Road, which will also be re-zoned to Zone 3. This new Zone 3 pipeline will support the Plan C area and provide redundant transmission capacity for Zone 3. To prevent service pressures from exceeding 80 psi in the Plan C area after re-zoning, the City plans 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.



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

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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.

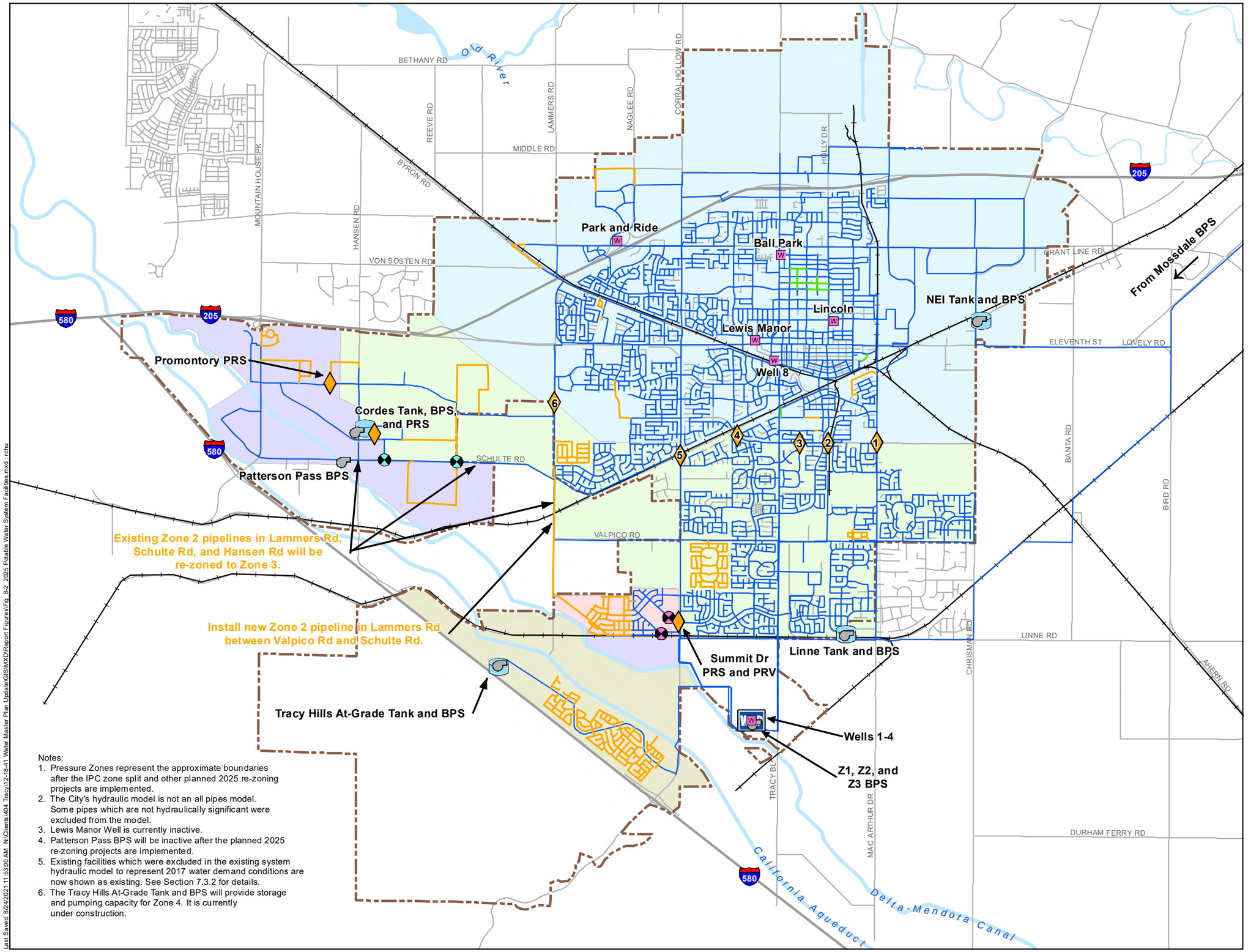
To provide emergency and/or peaking water supply between pressure zones, the following future interconnections are recommended and were incorporated into the hydraulic model to allow for the flow of water between pressure zones[6]:

- 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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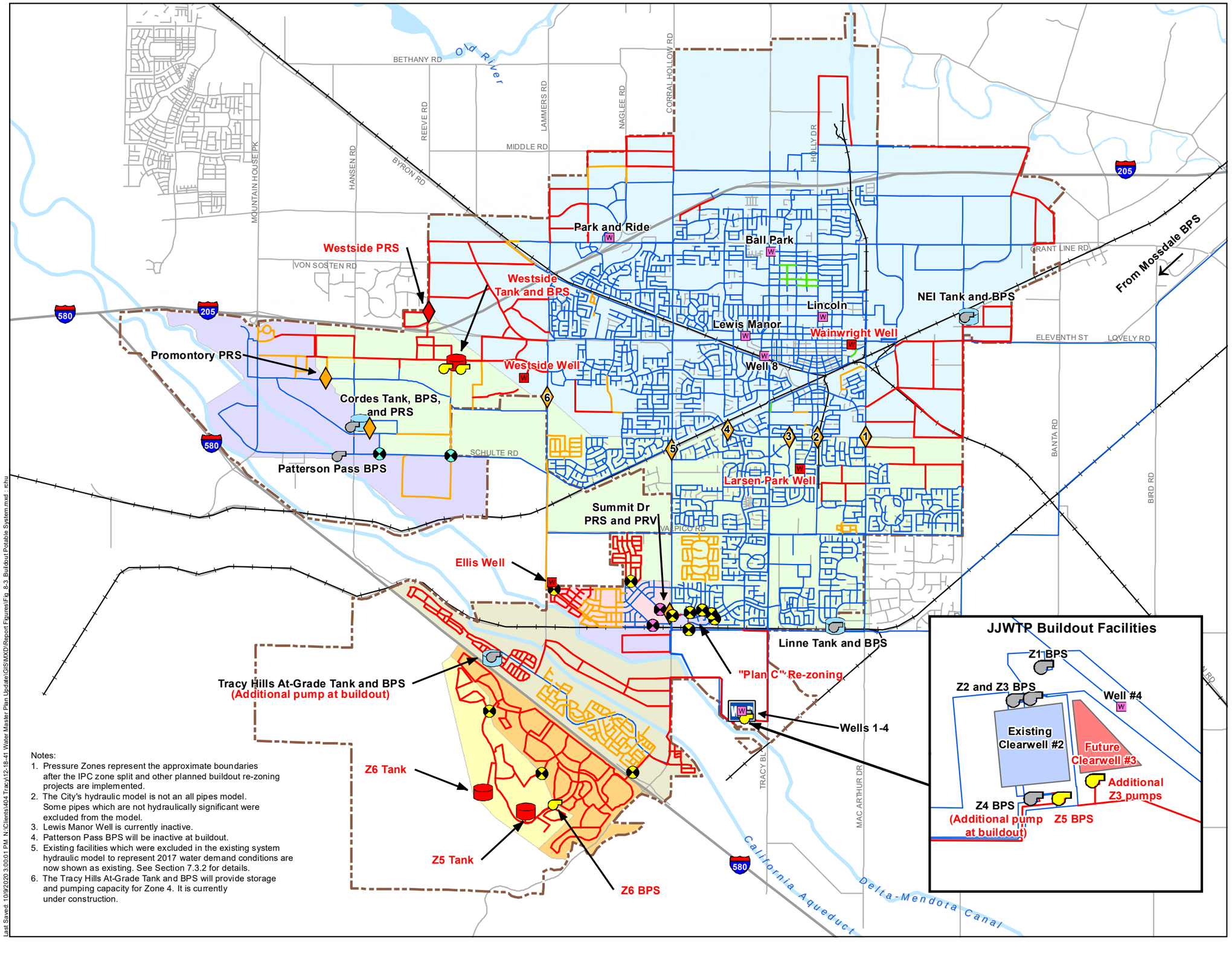
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Figure 8-2

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.



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

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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

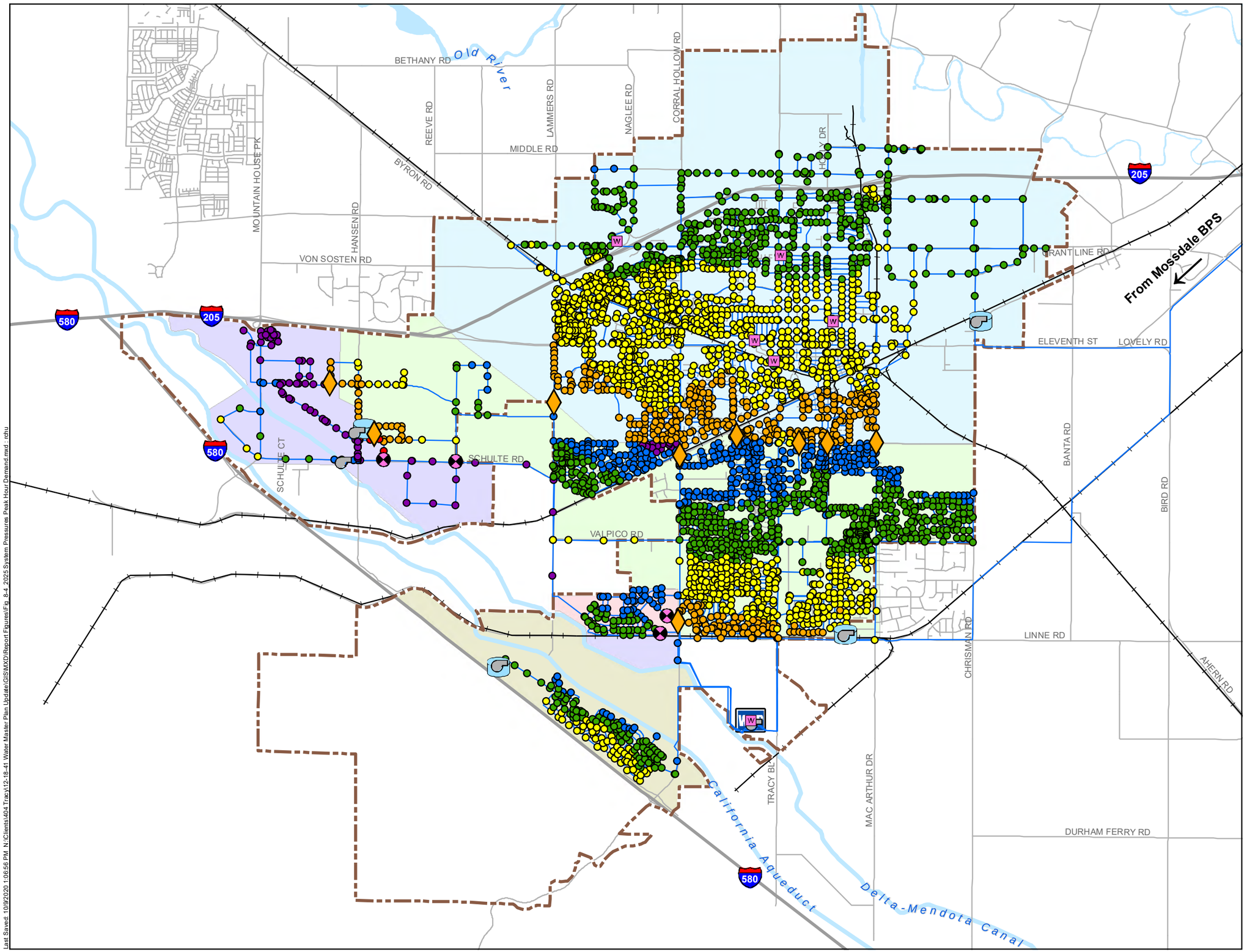
During a peak hour demand scenario, results indicate that the 2025 potable water system could adequately deliver peak hour demands to meet the City's minimum pressure criterion of 40 psi at all existing and future service locations as illustrated on Figure 8-4. Under this scenario, system pressures at 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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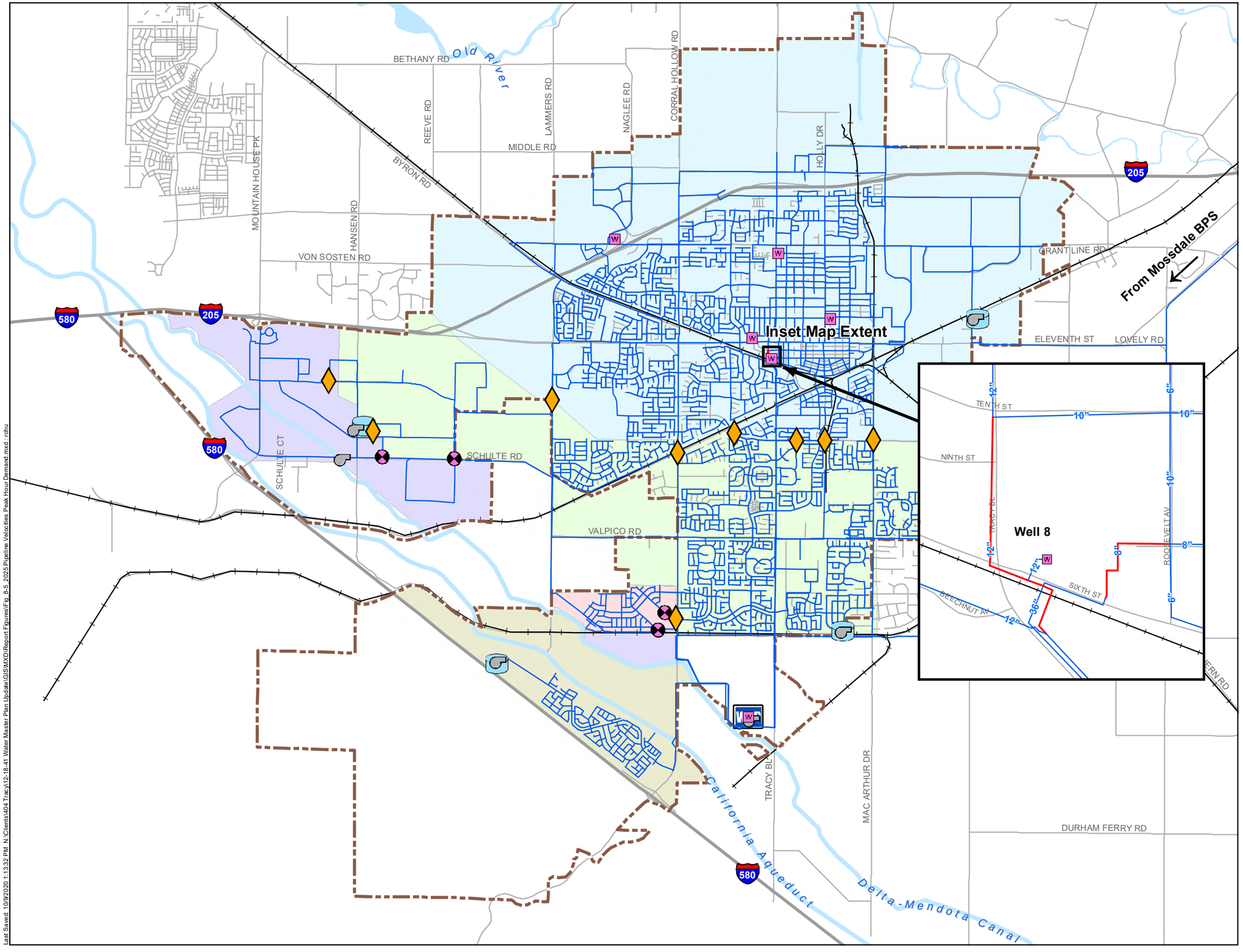
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Figure 8-4

2025 System Pressures Peak Hour Demand

City of Tracy
Water System Master Plan Update

Last Saved: 10/9/2020, 1:06:56 PM N:\Clients\404 Tracy\12-18-41 Water Master Plan Update\GIS\MXD\Report Figures\Fig. 8-4 2025 System Pressures Peak Hour Demand.mxd - rchu



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.

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Figure 8-5

2025 Pipeline Velocities Peak Hour Demand

City of Tracy
Water System Master Plan Update

Last Saved: 10/9/2020 1:13:32 PM N:\Clients\404 Tracy\12-18-41 Water Master Plan Update\GIS\MXD\Report Figures\Fig. 8-5 2025 Pipeline Velocities Peak Hour Demand.mxd : rchu

- 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

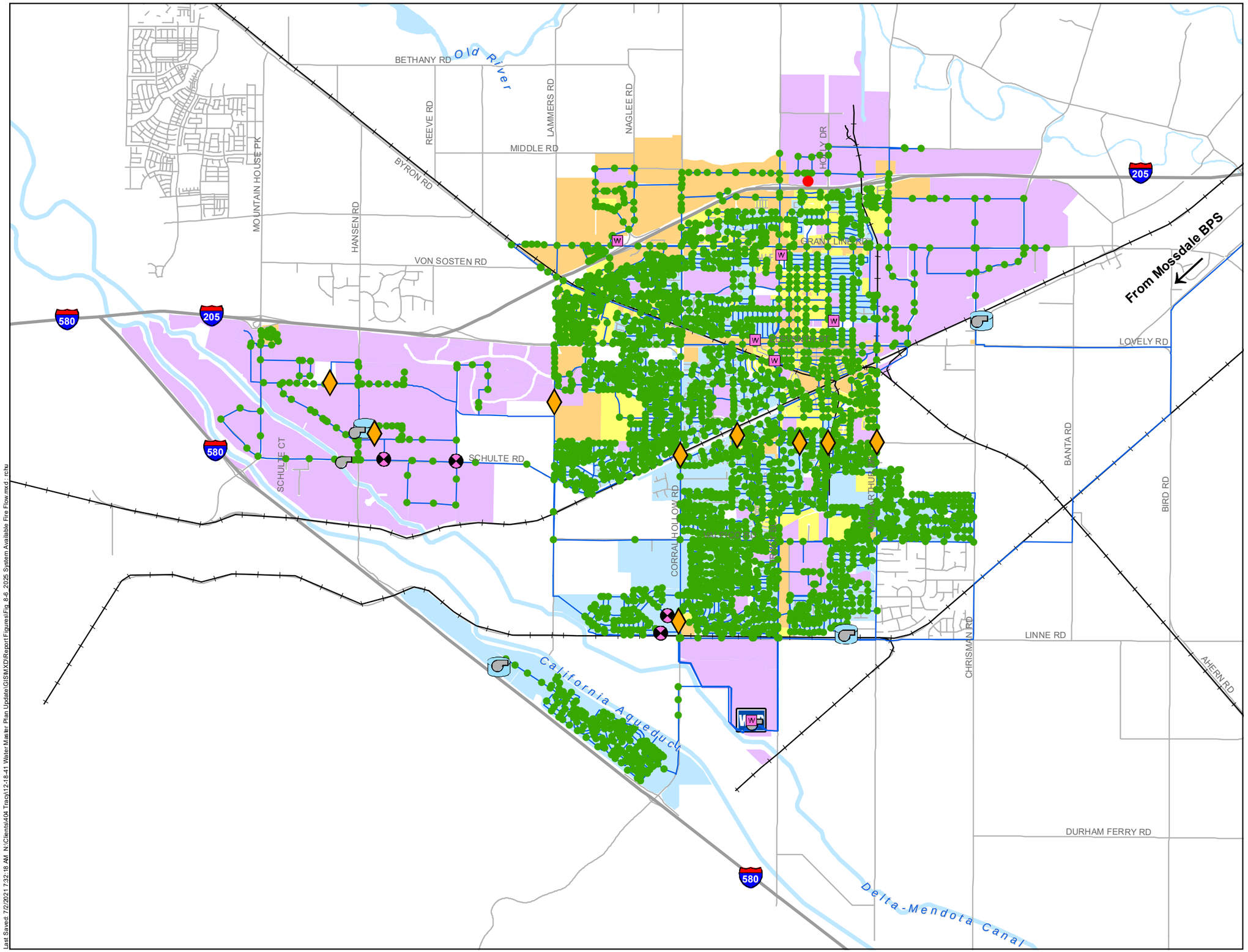
Fire flow demands were assigned based on the fire flow requirements summarized in Table 8-12 and simulated at various locations within the City's 2025 water service area. InfoWater's "*Available Fire Flow Analysis*" tool was used to determine the available fire flow (while meeting the maximum day demand 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.

TRACY

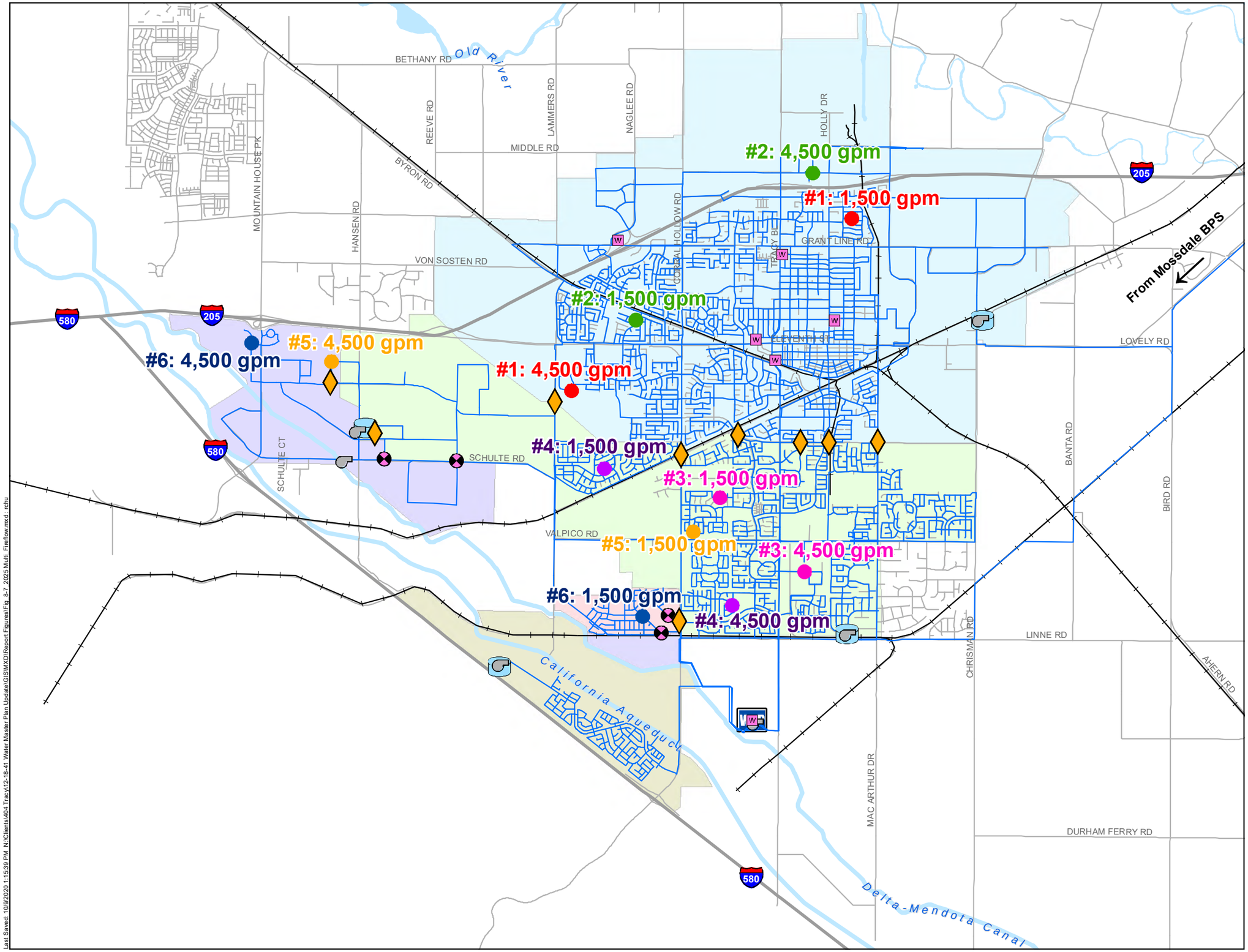
WEST YOST ASSOCIATES

Figure 8-6

2025 System Available Fire Flow

City of Tracy
Water System Master Plan Update

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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
- 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

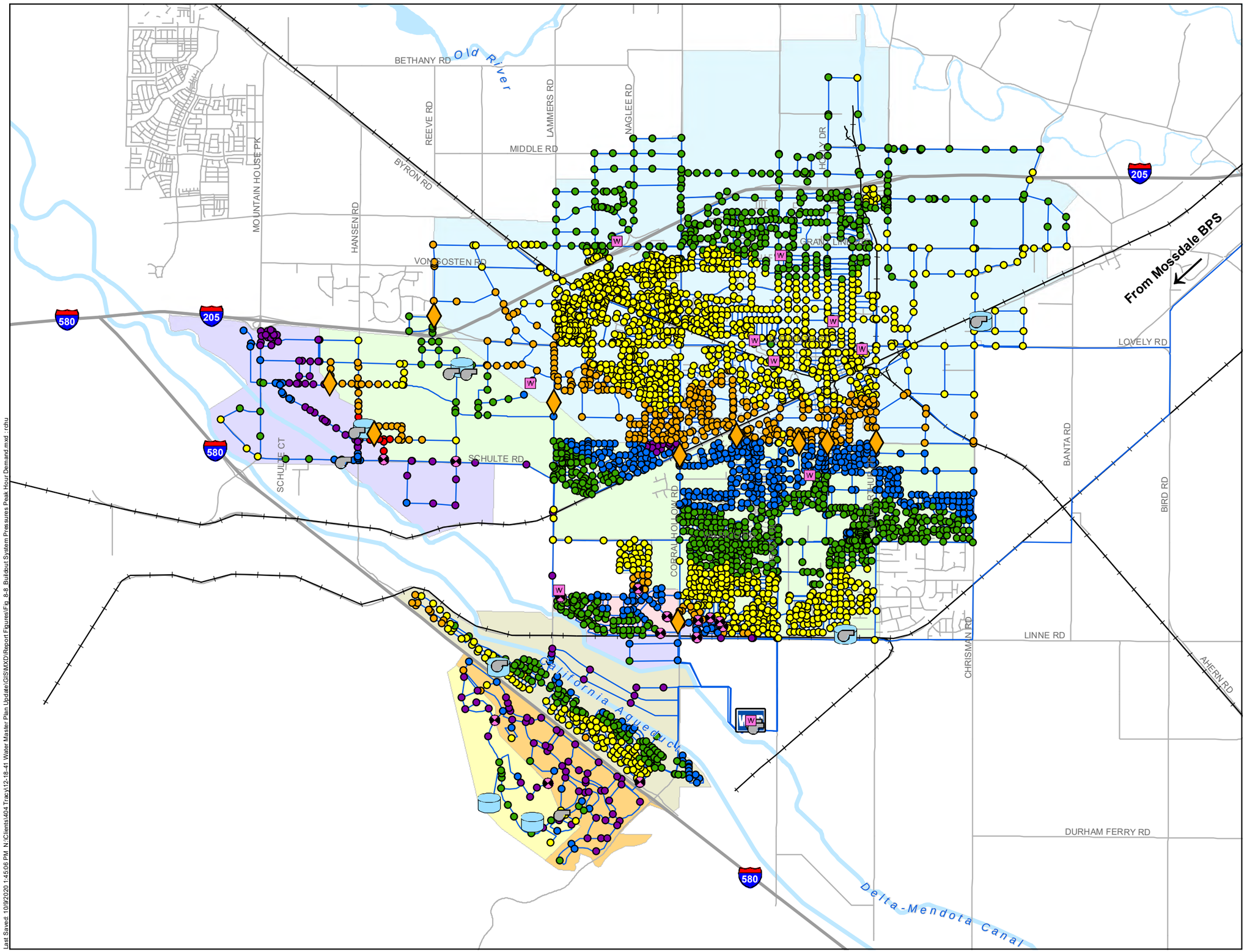
During a peak hour demand scenario, results indicate that the buildout potable water system could adequately deliver peak hour demands to meet the City's minimum pressure criterion of 40 psi at all existing and future service locations as illustrated on Figure 8-8. Under this scenario, system pressures 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.



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

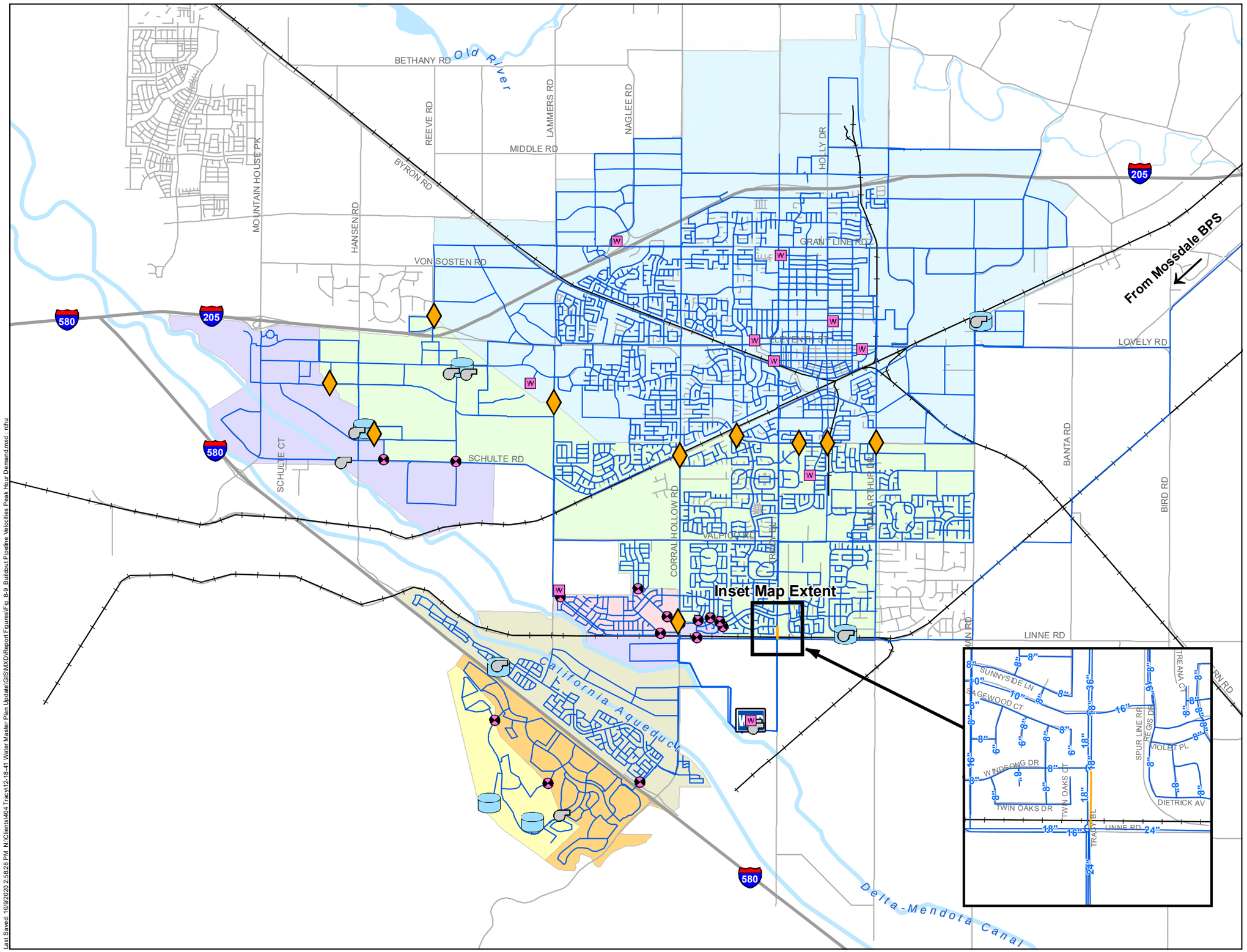
WEST YOST ASSOCIATES

Figure 8-8

Buildout System Pressures Peak Hour Demand

City of Tracy
Water System Master Plan Update

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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

WEST YOST ASSOCIATES

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

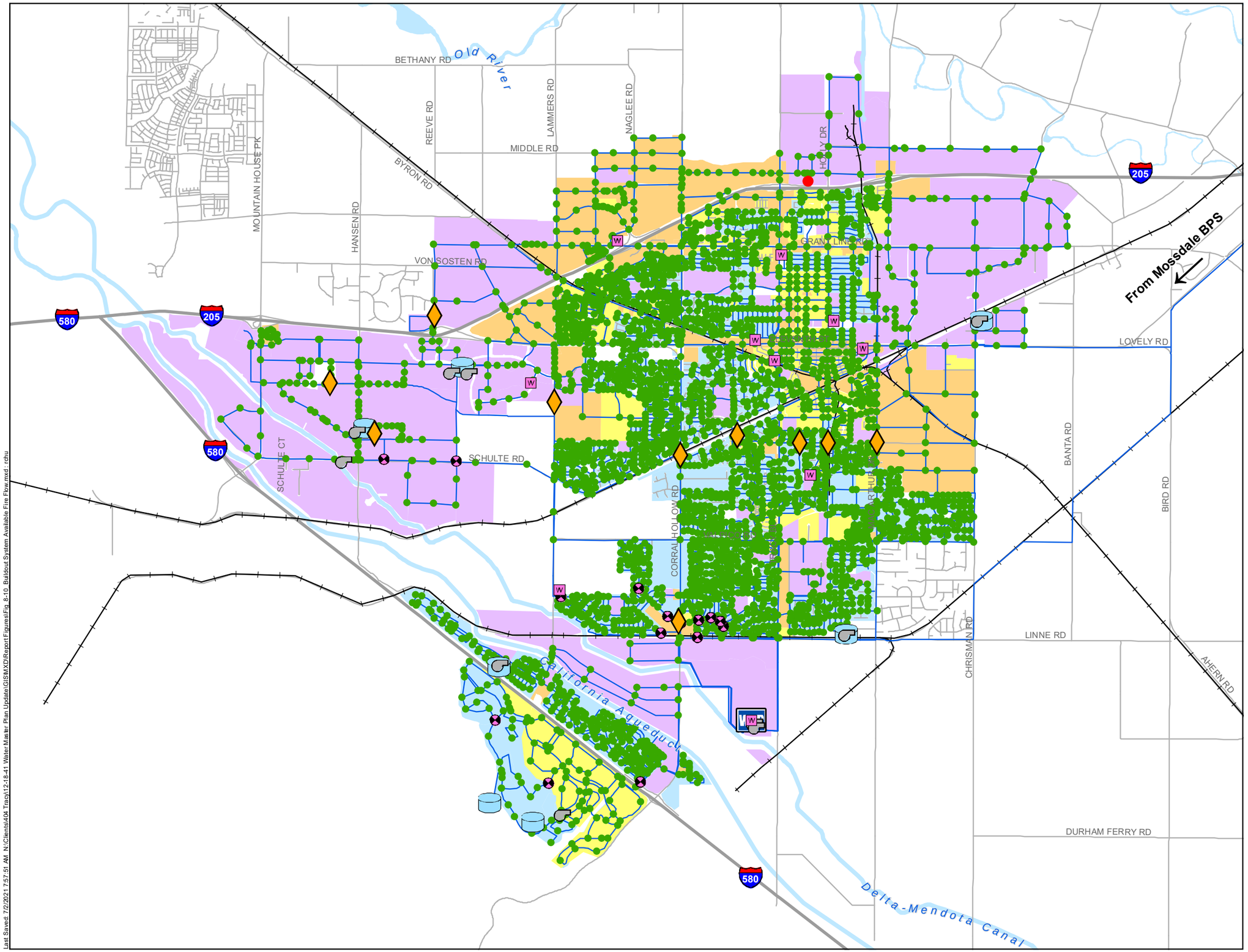
Fire flow demands were assigned based the fire flow requirements summarized in Table 8-12 and simulated at various locations within the City's buildout water service area. InfoWater's "*Available Fire Flow Analysis*" tool was used to determine the available fire flow (while meeting the maximum day demand 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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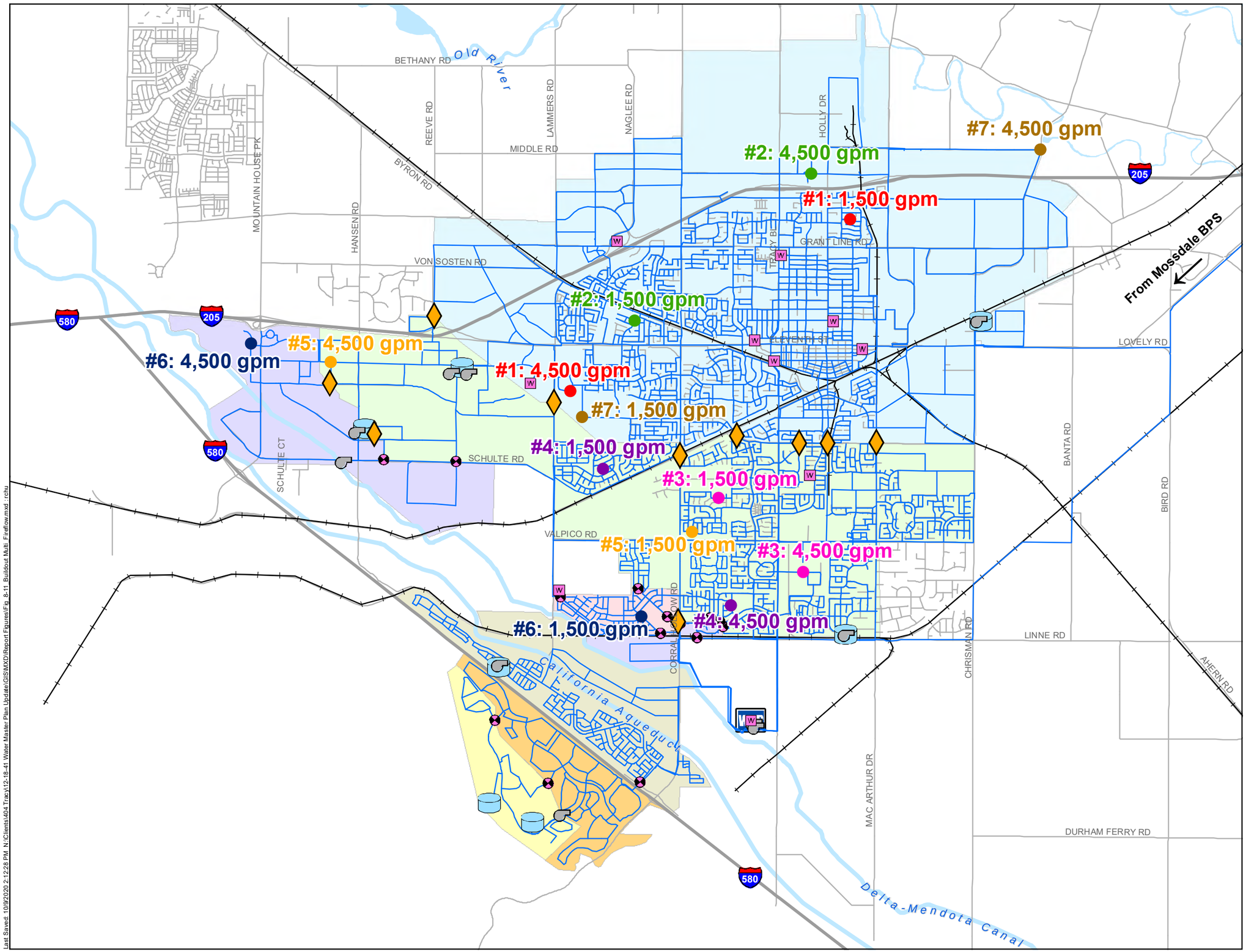
WEST YOST ASSOCIATES

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

WEST YOST ASSOCIATES

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.

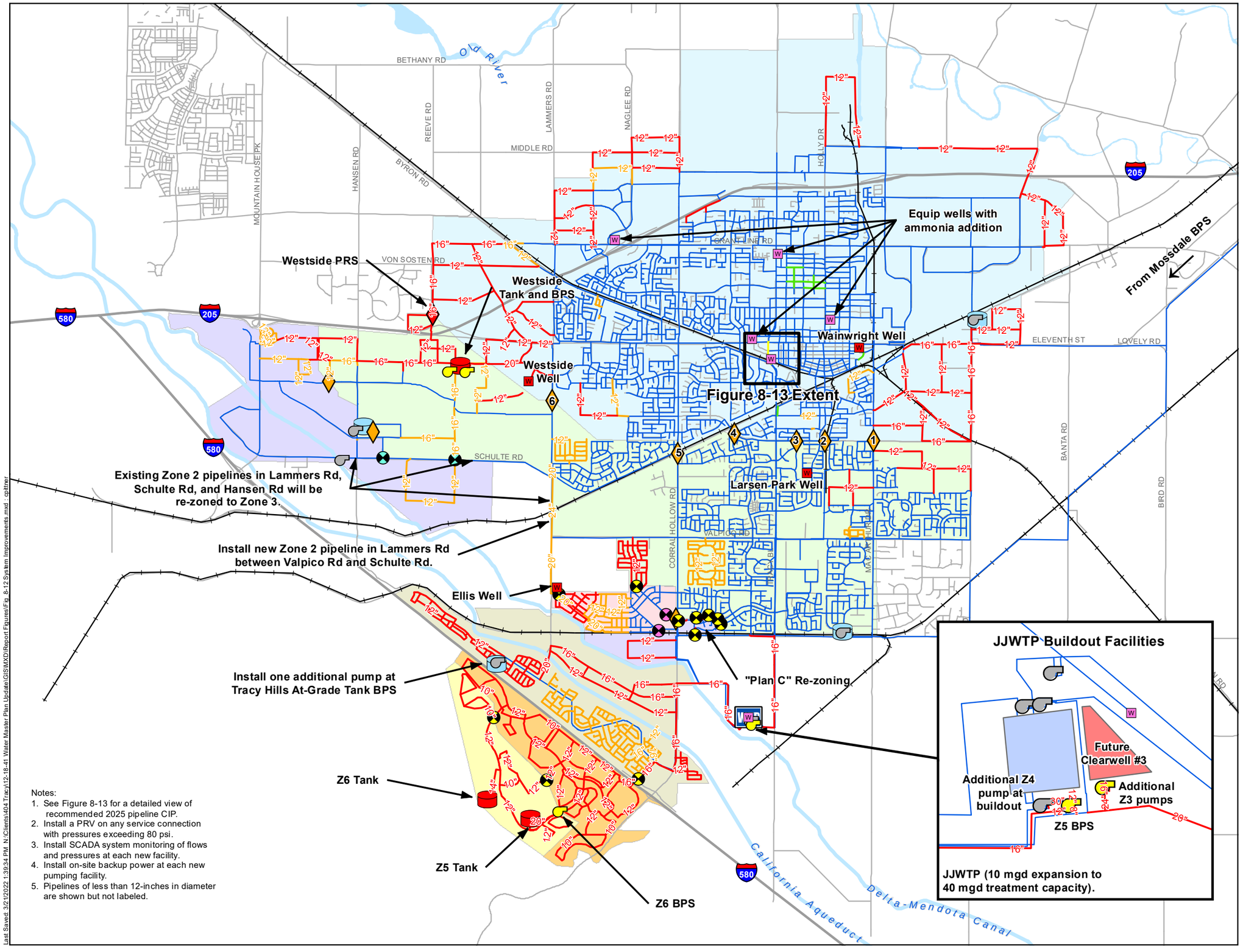
It should also be noted that the future hydraulic model is not an "all pipes" model (i.e., not all smaller diameter pipelines are included); therefore, the hydraulic simulations performed as discussed above may not identify all necessary water system improvements. Consequently, it is recommended that 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.

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

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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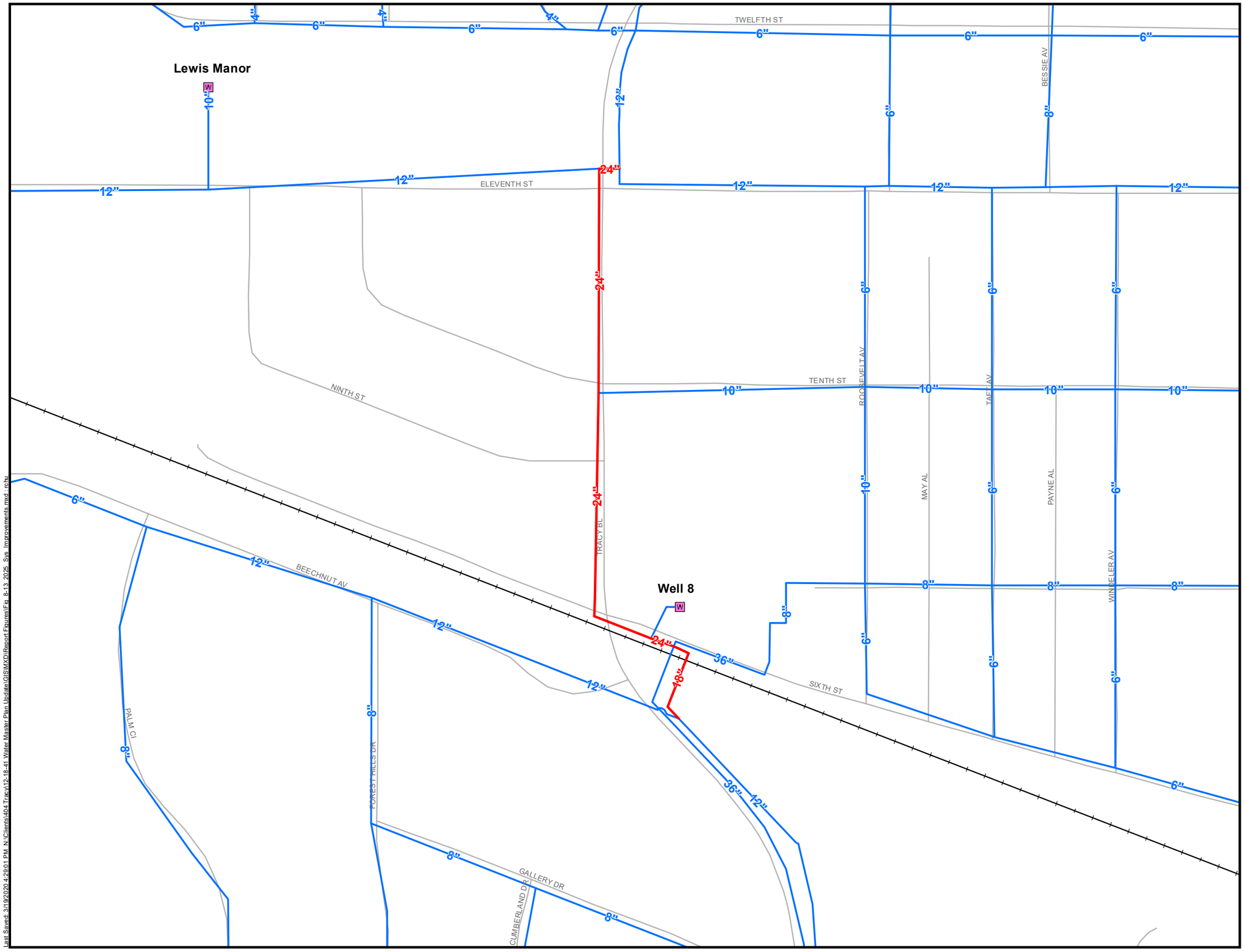
WEST YOST ASSOCIATES

Figure 8-12

Proposed Future Water System Recommended Improvements

City of Tracy
Water System Master Plan Update

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Symbology

- Recommended 2025 Improvement
- Existing Pipeline
- Groundwater Well

Notes:
1. See Figure 8-12 for the location of the recommended improvements.

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Figure 8-13

2025 System Recommended Pipeline CIP

City of Tracy
Water System Master Plan Update

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

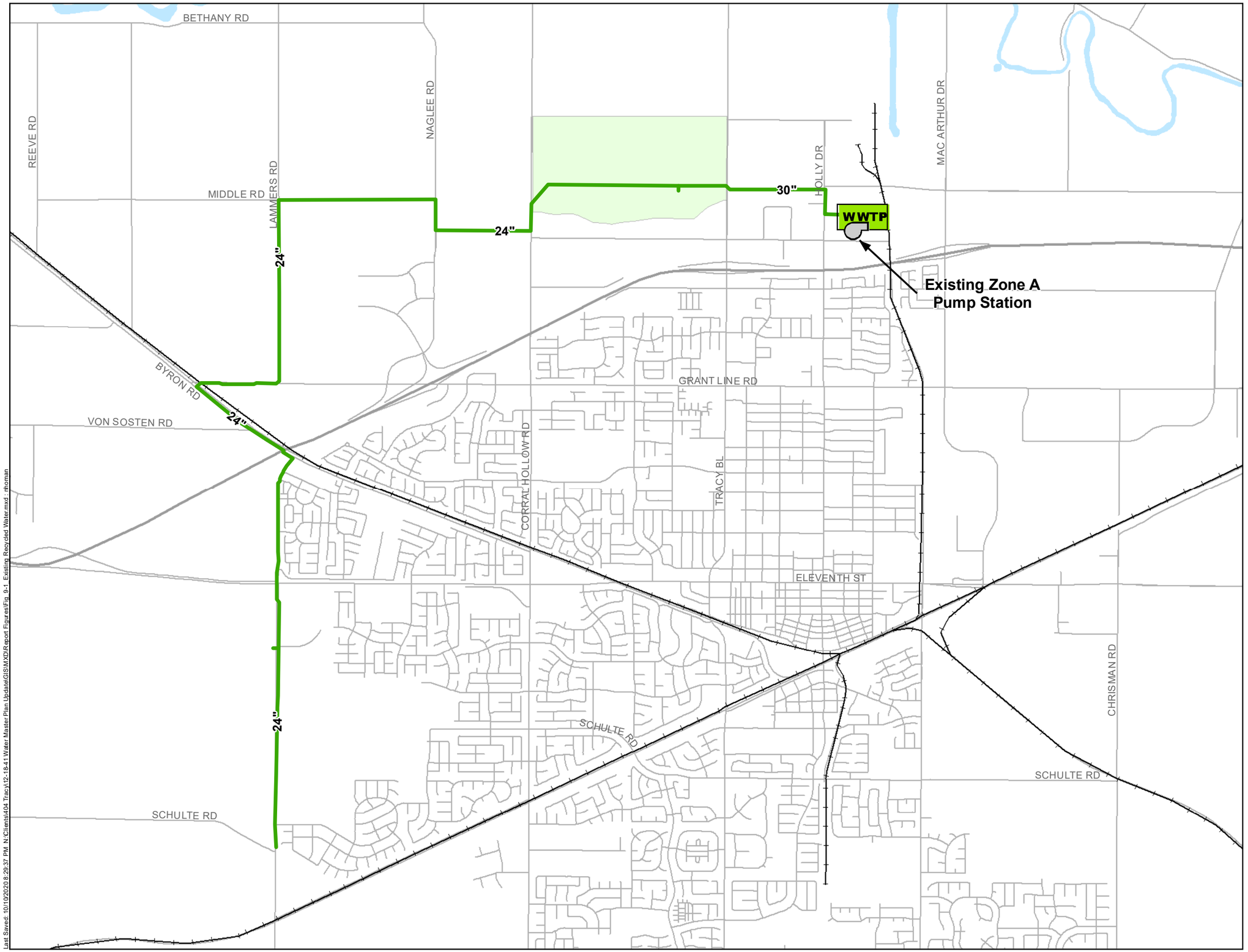
(a) Maximum pumping capacity of entire pump station.
(b) Assumes that the largest booster pump at the pump station is offline.
(c) Pumps are equipped with variable frequency drives.

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.



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

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.

Figure 9-1

Existing Recycled Water System Facilities

City of Tracy
Water System Master Plan Update

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

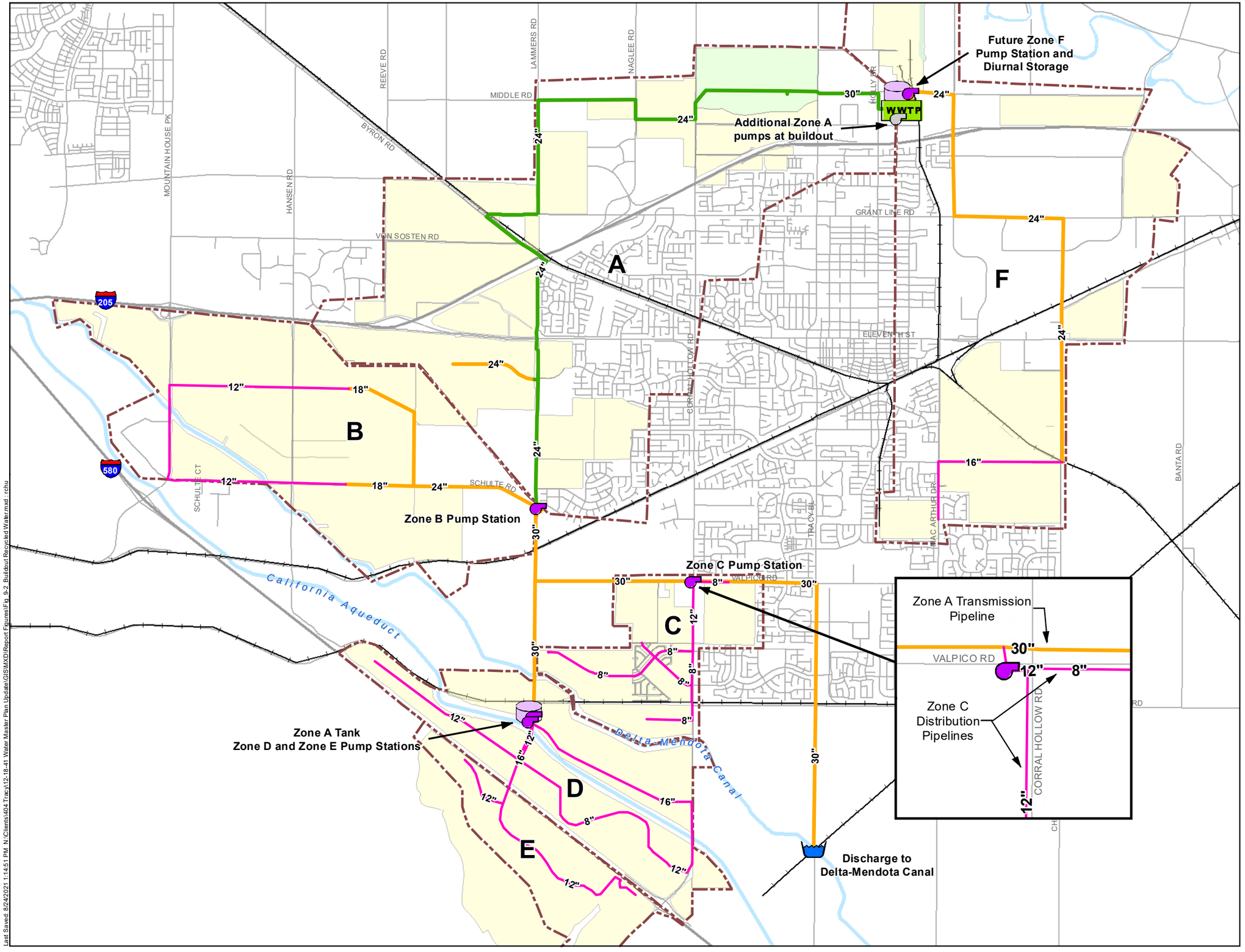
The City's only active recycled water service connection is the Legacy Fields sports complex.

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.



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.

TRACY

WEST YOST ASSOCIATES

Figure 9-2

Buildout Recycled Water System Facilities

City of Tracy
Water System Master Plan Update

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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.

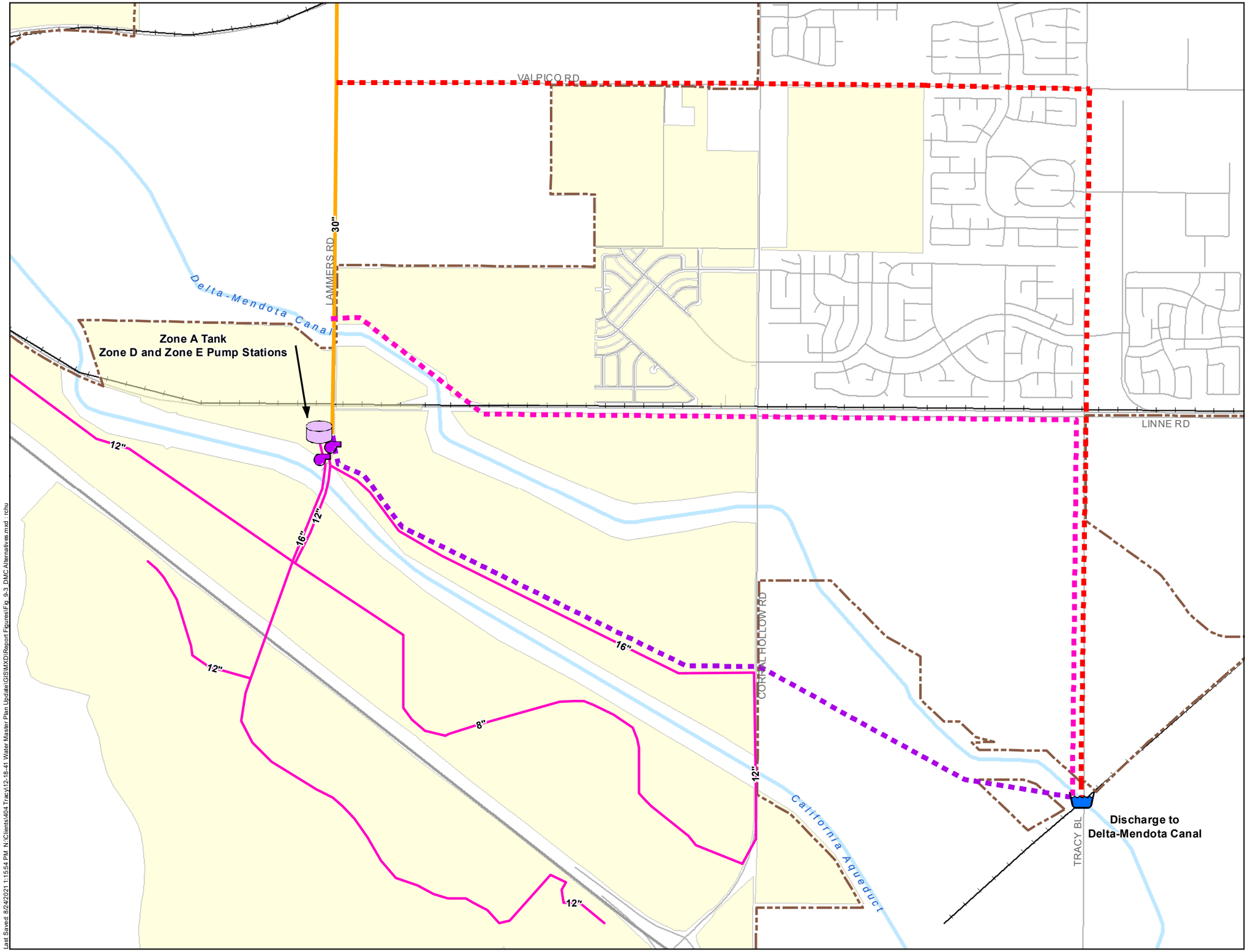
- The Alternative B pipeline would tie into the Zone A transmission pipeline in Lammers Road just north of the DMC, and would consist of approximately 19,100 feet of pipeline running along the south edge of the Ellis Specific Plan, in Linne Road, and in Tracy Boulevard. The Alternative B pipeline would 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

City of Tracy
Water System Master Plan Update

Last Saved: 8/24/2021 11:55:54 PM N:\Clients\404 Tracy\12-18-41 Water Master Plan Update\GIS\MXD\Report Figures\Fig. 9-3. DMC Alternatives.mxd : rchu

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.

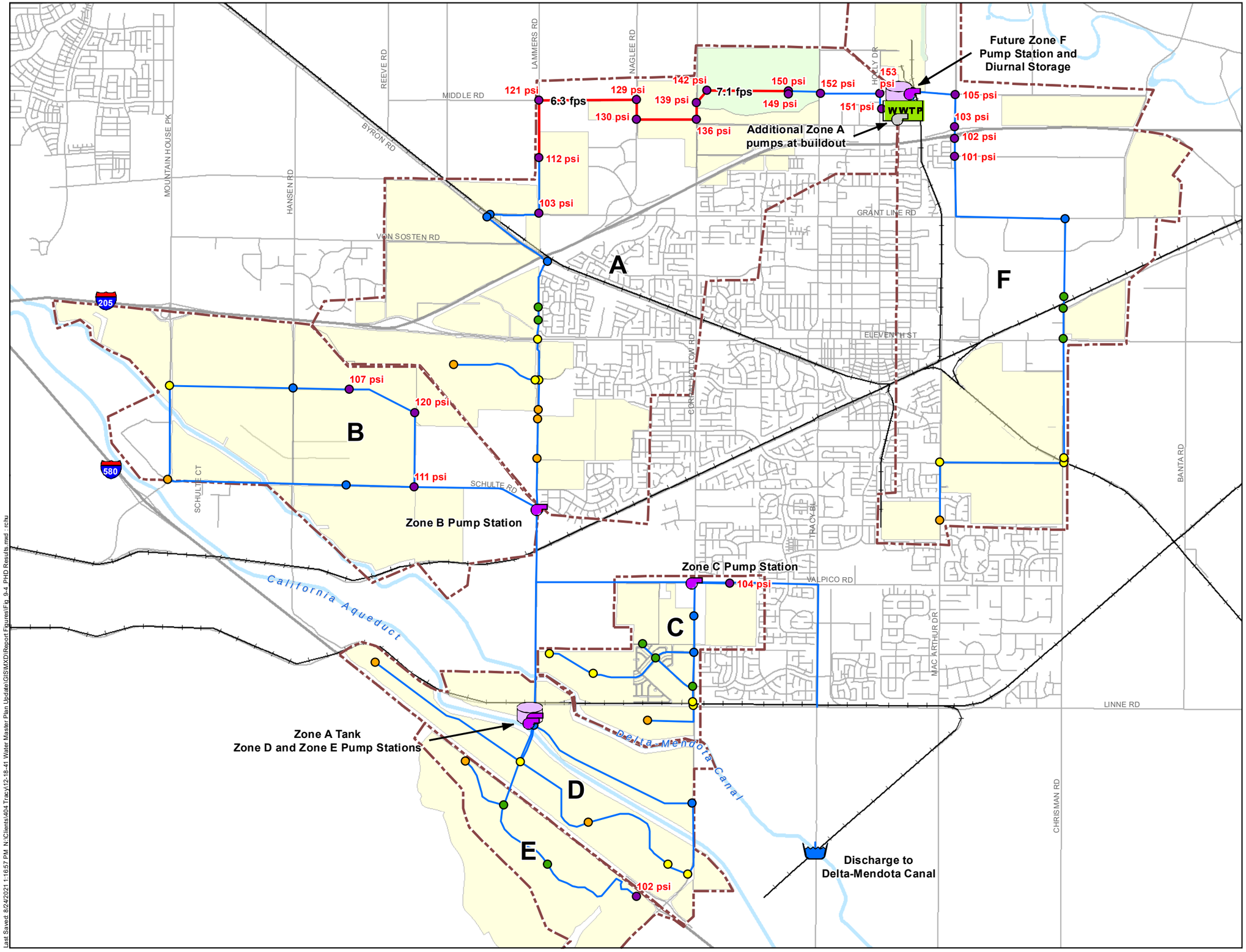
9.6 RECYCLED WATER SYSTEM EVALUATION RESULTS

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.



Symbology

Peak Hour 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 not shown for locations with no expected recycled water services.

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Figure 9-4

Buildout Recycled Water Peak Hour Demand

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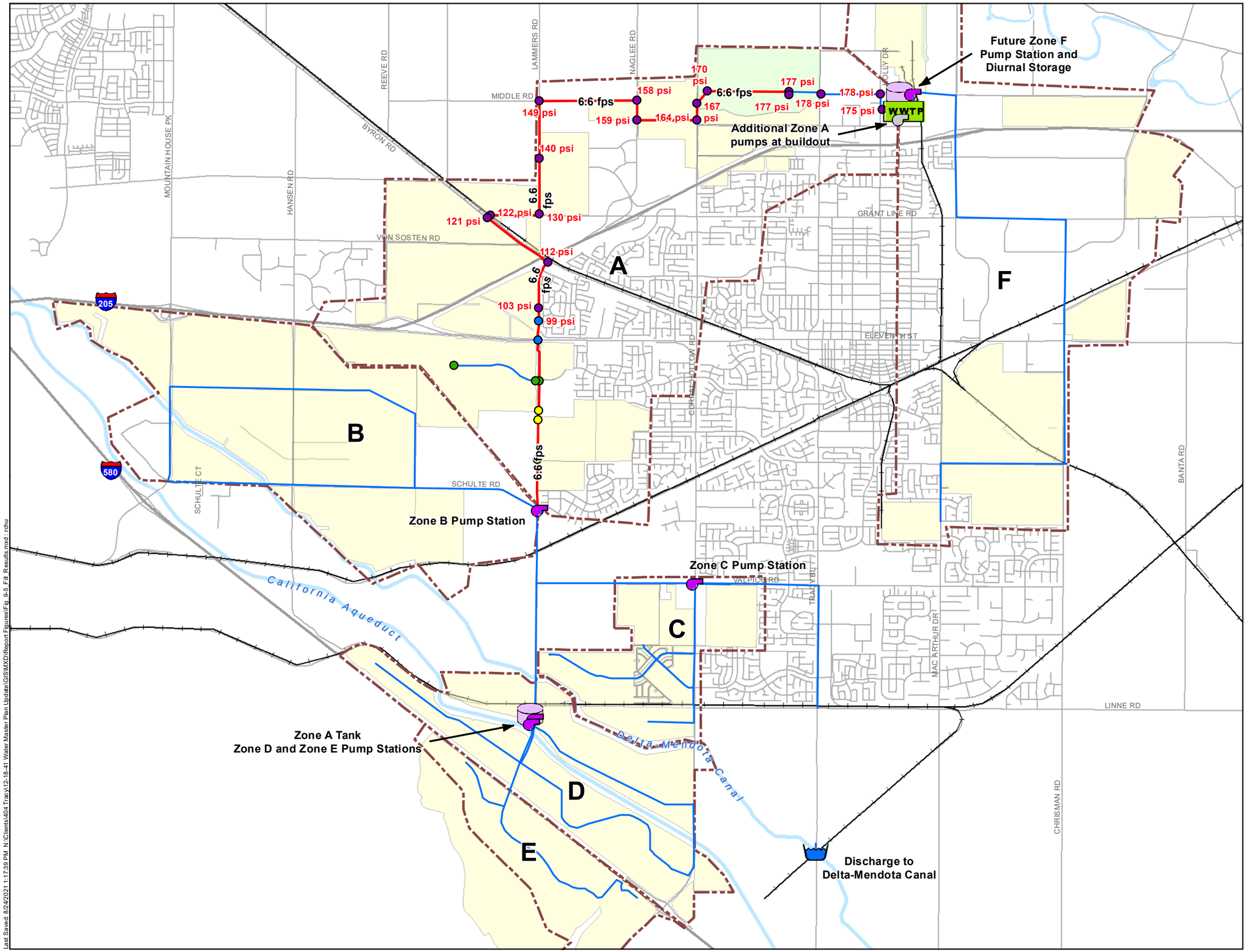
Last Saved: 8/24/2021 1:16:57 PM N:\Clients\404 Tracy\12-18-41 Water Master Plan Update\GIS\MXD\Report Figures\Fig. 9-4 PHD Results.mxd - rchu

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

City of Tracy
Water System Master Plan Update

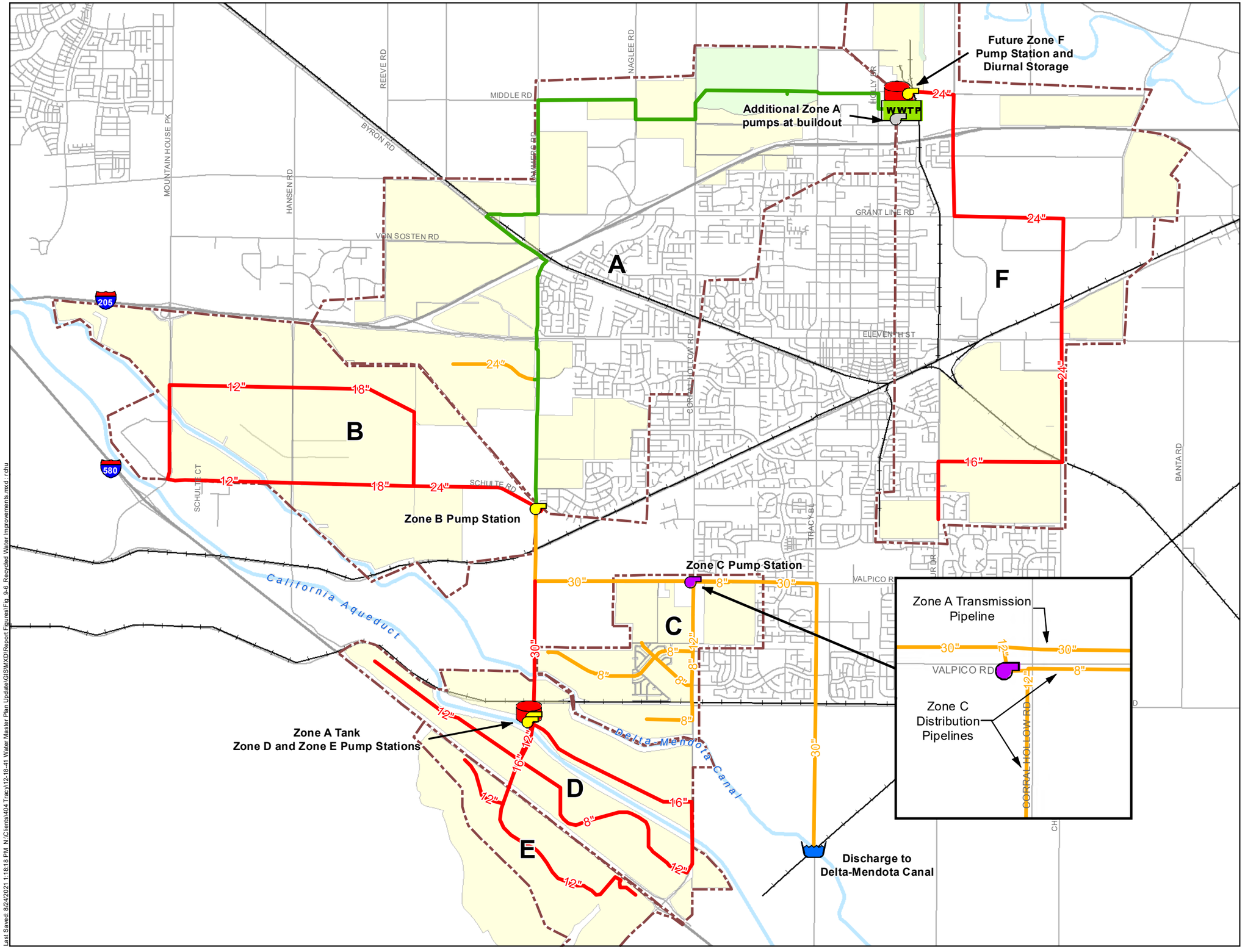
Last Saved: 8/24/2021 1:17:39 PM N:\Clients\404 Tracy\12-18-41 Water Master Plan Update\GIS\MXD\Report Figures\Fig. 9-5 Fill Results.mxd : rahu

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.

Figure 9-6

Proposed Future Recycled Water System Improvements

City of Tracy
Water System Master Plan Update

Last Saved: 8/24/2021 1:18:18 PM N:\Clients\404 Tracy\12-18-41 Water Master Plan Update\GIS\MXD\Report Figures\Fig. 9-6 Recycled Water Improvements.mxd - rchu

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]

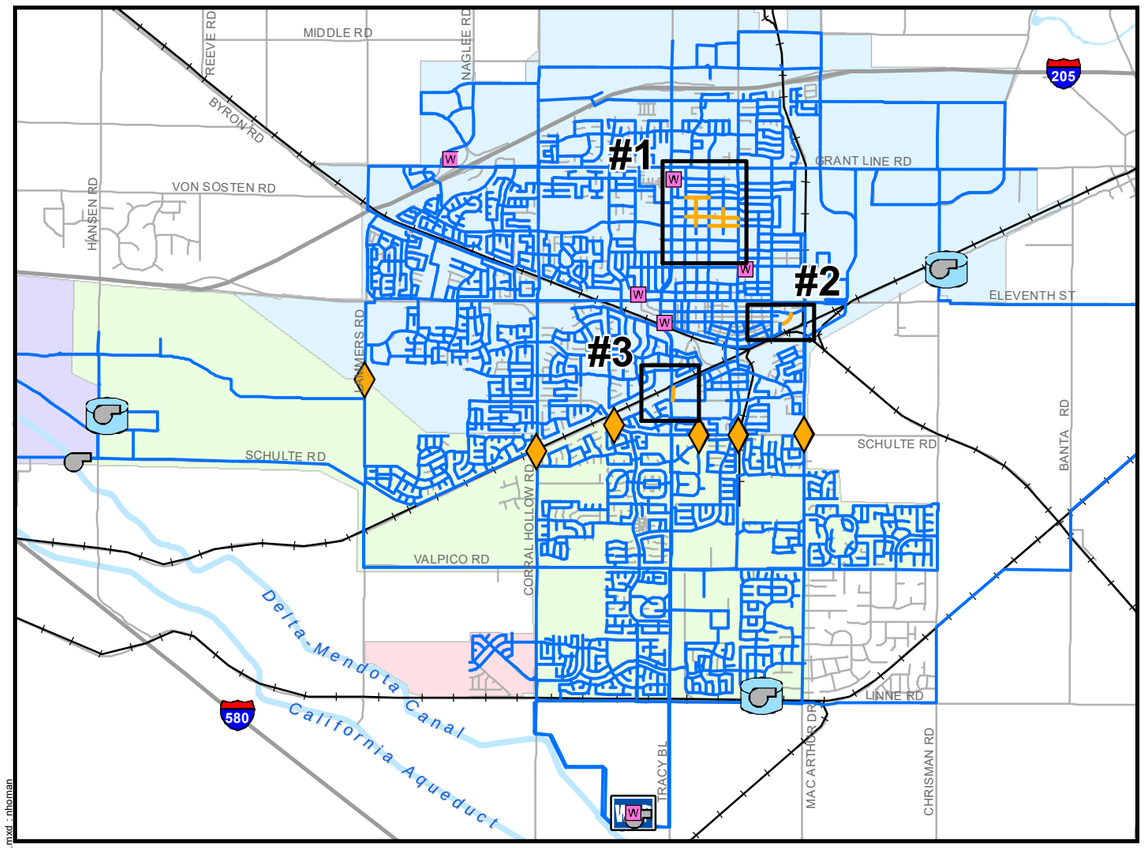
Improvement Type	Improvement Description	CIP ID	Quantity		Estimated Construction Cost, dollars[b]	CIP Cost, dollars (includes mark-ups)[c,d]
Pipeline Improvement	Replace existing pipelines in 20th Street between Bessie Avenue and Parker Avenue, Wall Street between Lowell Avenue and 20th Street, Emerson 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**

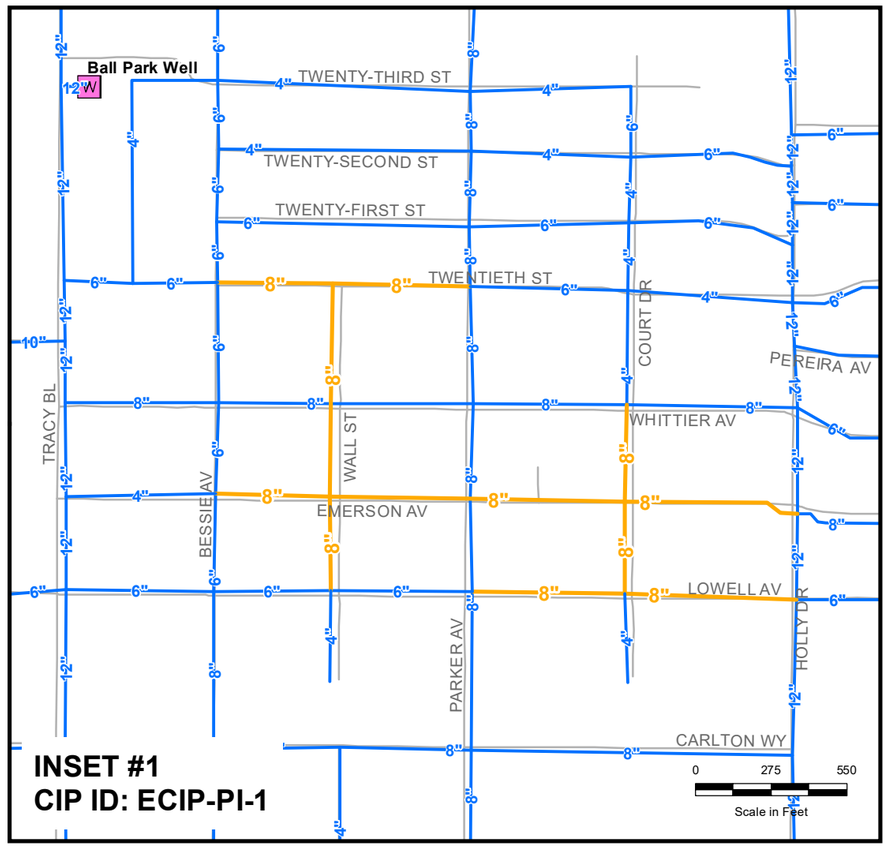
(a) Costs shown are presented in 2020 dollars.

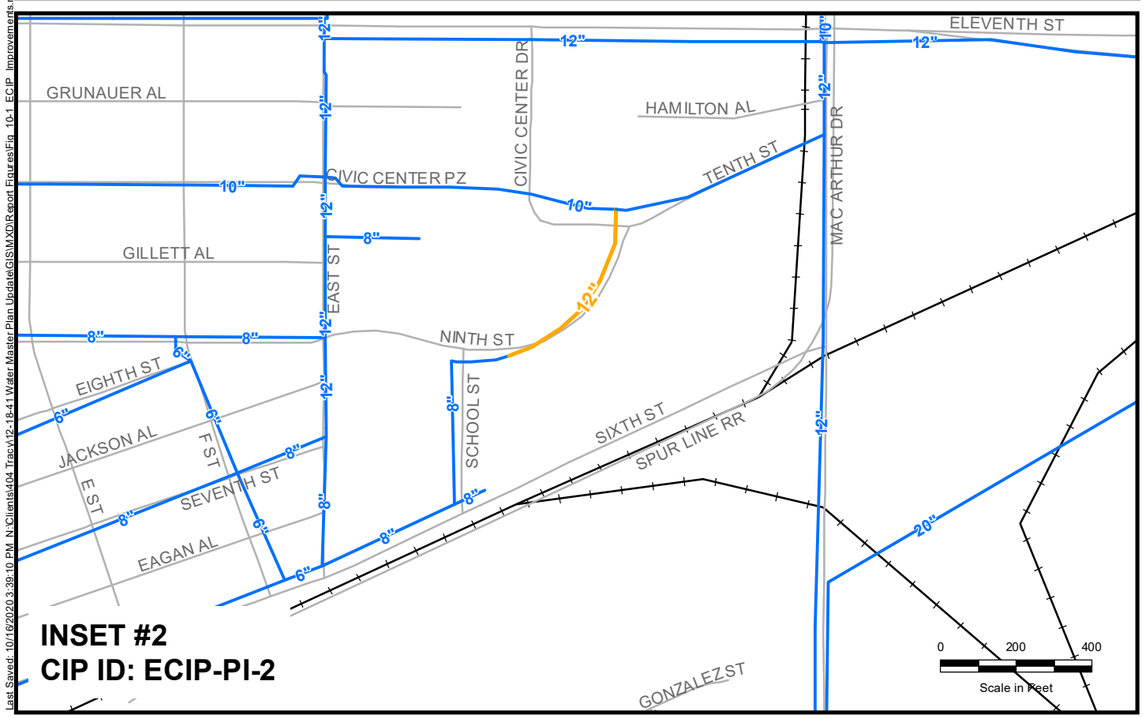
(b) Estimated construction costs do not reflect an adjustment to account for the current economic bidding climate.

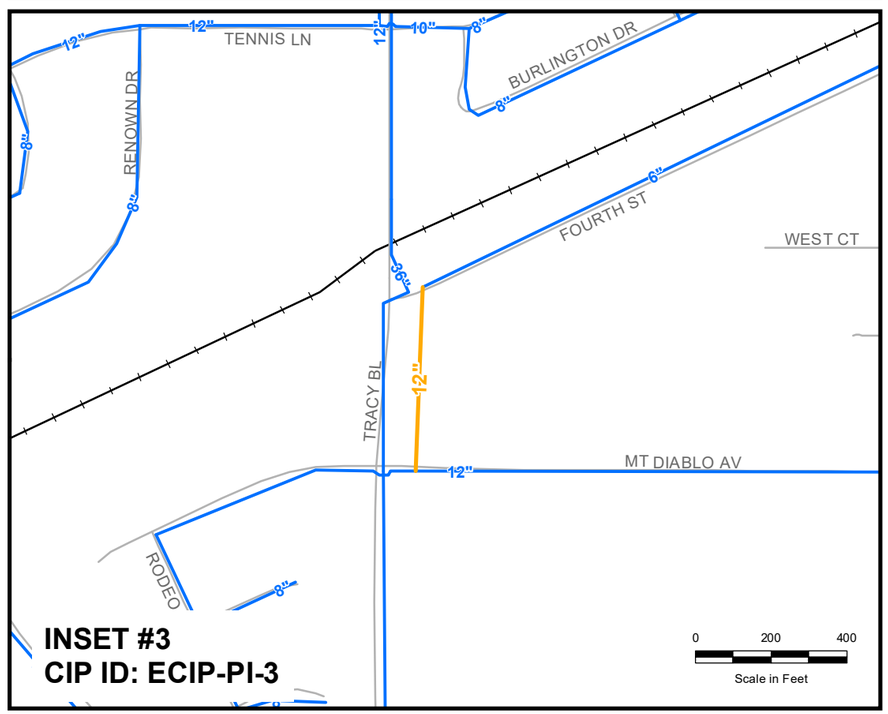
(c) Costs include mark-ups equal to 40 percent (General Contingency: 15 percent; Design and Planning: 10 percent; Construction Management: 10 percent; and Program Administration: 5 percent).

(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.**

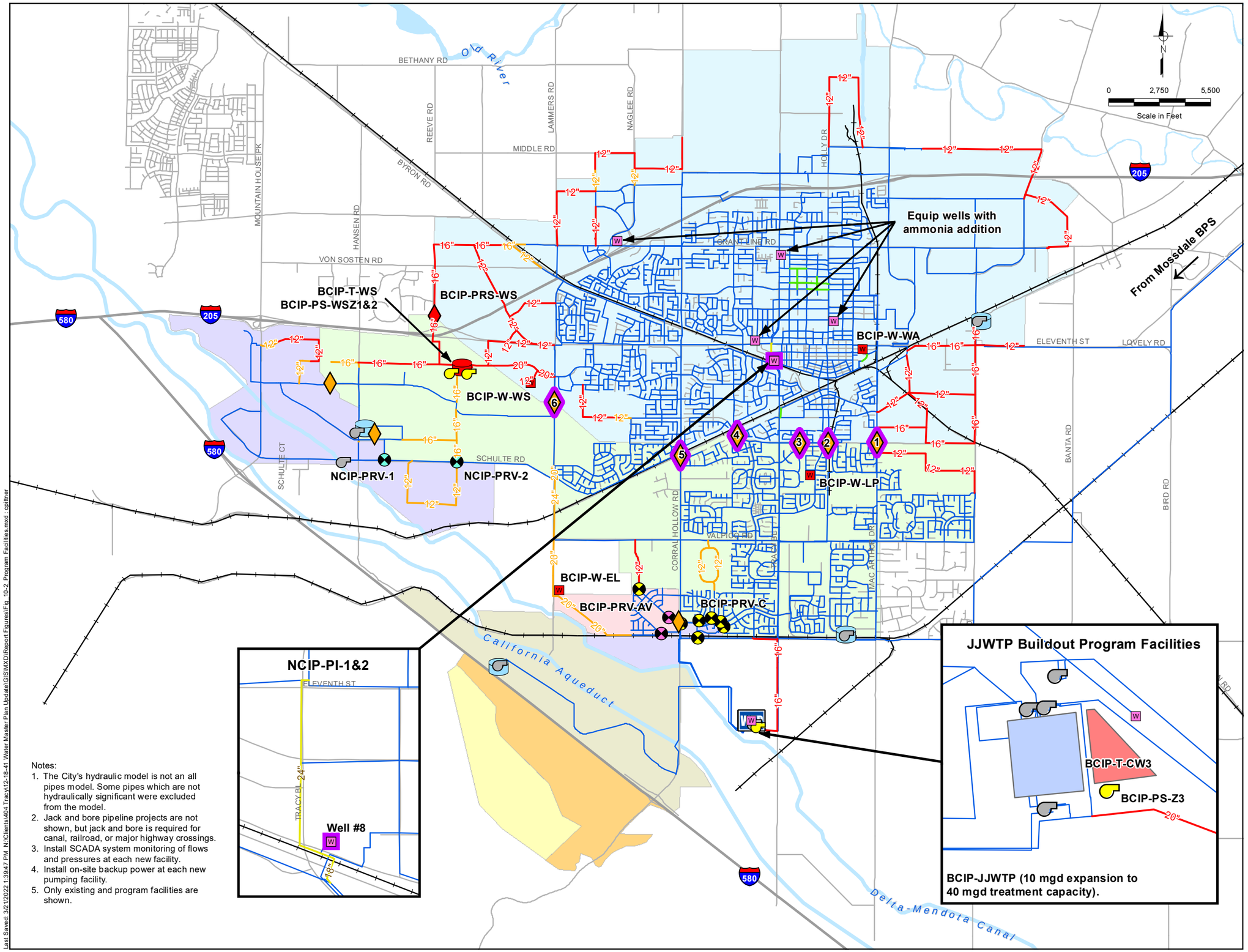
- Land Acquisition
  - To account for land acquisition costs, it was assumed that 1.5 acres will be required for each tank site.
  - To account for land acquisition costs, it was assumed that 0.25 acres will be required for each ASR well site.

- 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

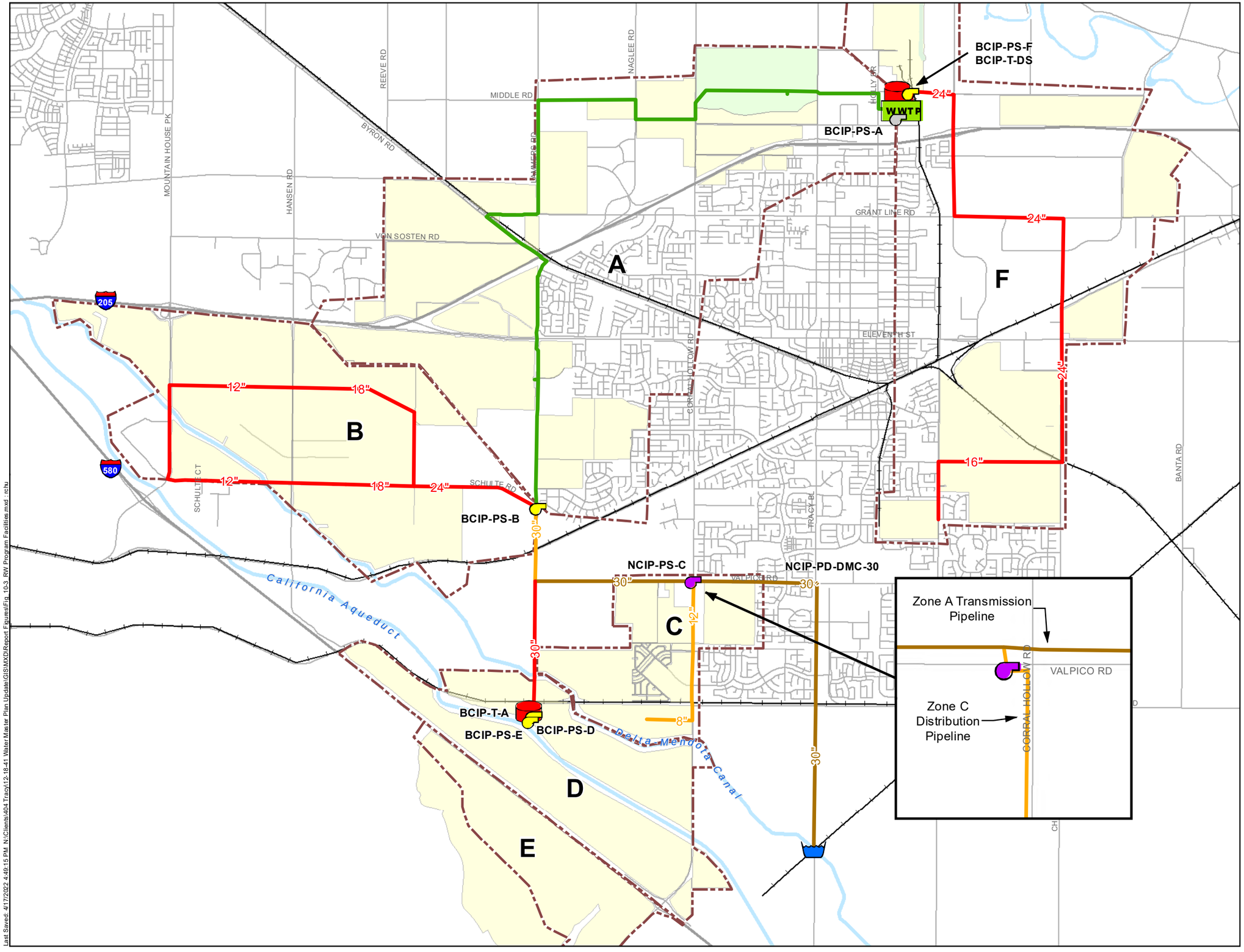
  Note: Because the actual dimensions of each proposed storage tank have not been determined, the recommended storage facility sizes do not include dead and freeboard storage requirements, which will be determined during design.

  - 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																																		

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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		
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																																	

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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		
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

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		
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**

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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-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**

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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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(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:
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-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**

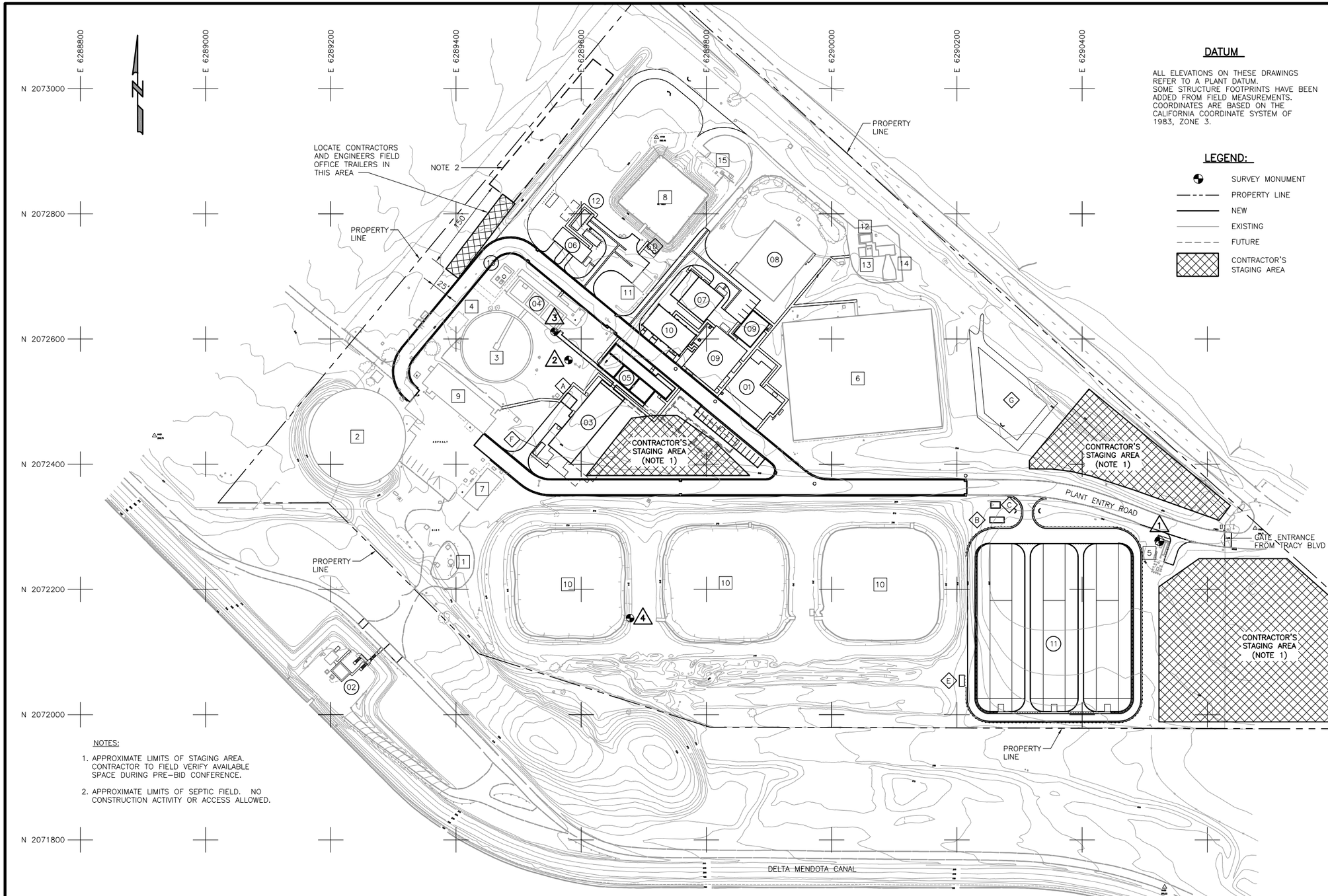
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(d) Includes 5.0% UAFW.
(e) Assumes that 15 percent of total gross acres will be landscaped and irrigated. If available, recycled water was used to meet irrigated area demands.
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(n) Represents the 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

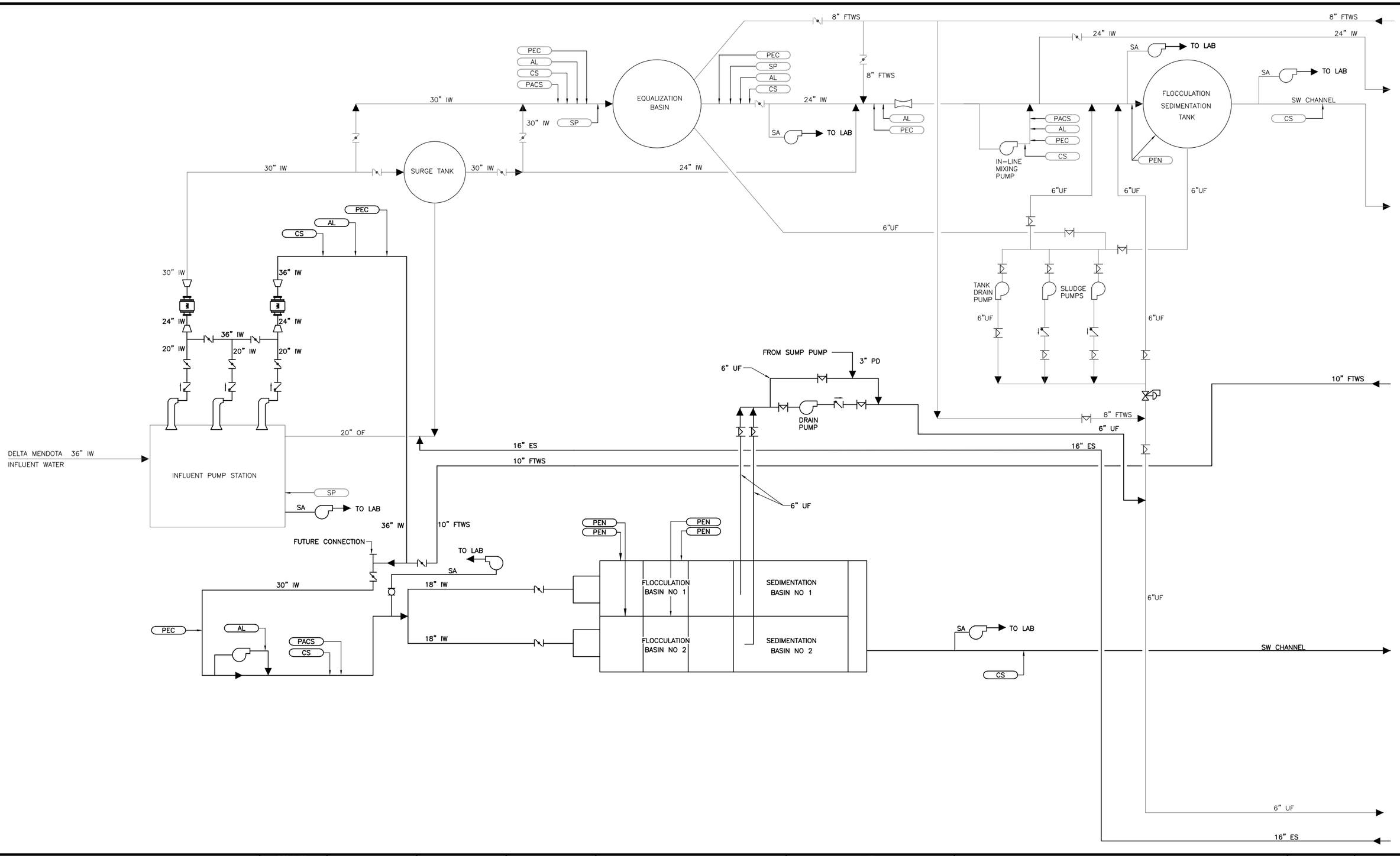
CITY OF TRACY
JOHN JONES WTP – EXPANSION PROJECT
GENERAL
SITE PLAN

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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

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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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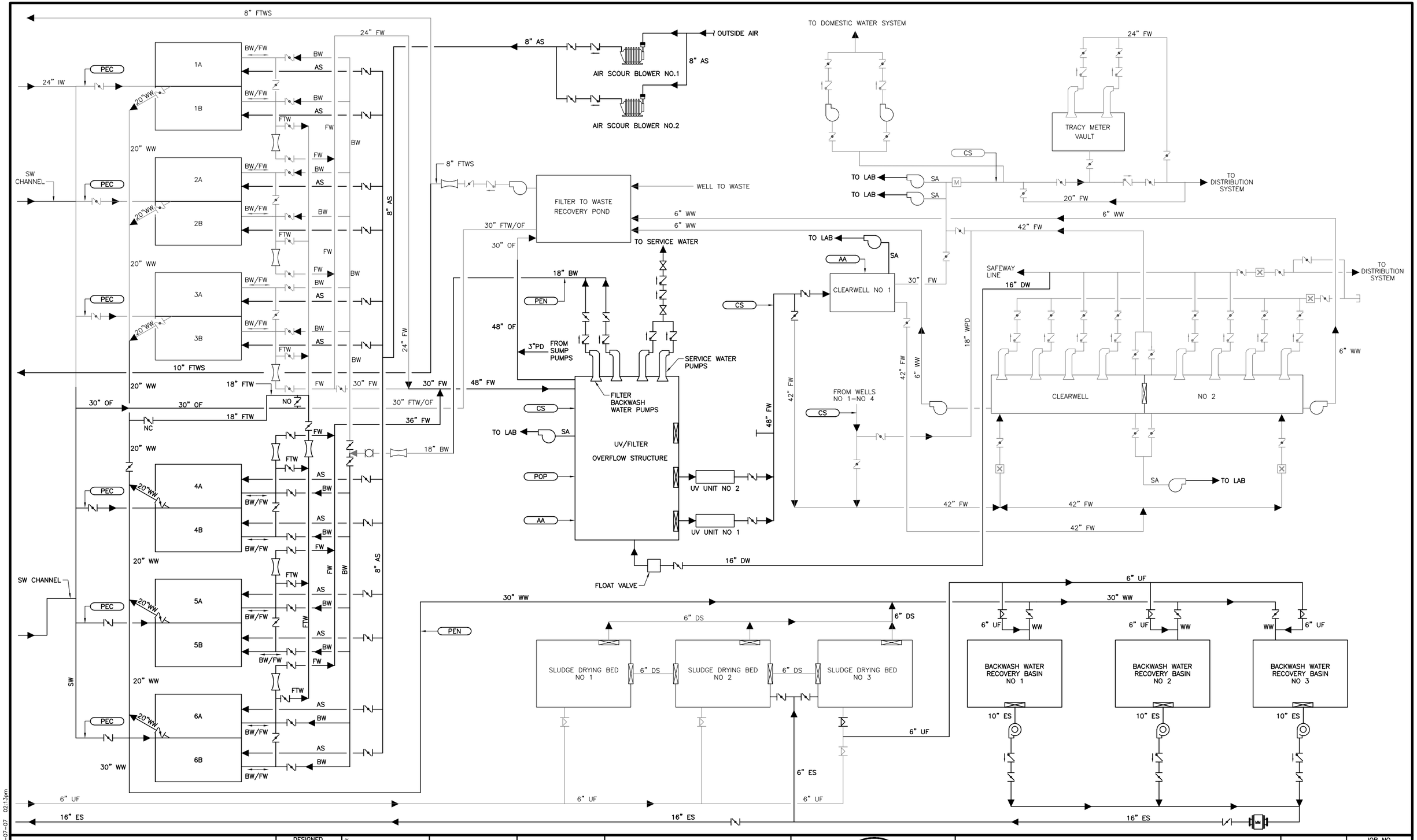
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DESIGNED	MAL
DRAWN	SJB
CHECKED	BTF
DATE	MAR 2005

DISCIPLINE ENGINEER

PROJECT ENGINEER

PARTNER

carollo engineers

CITY OF TRACY

JOHN JONES WTP – EXPANSION PROJECT

GENERAL

PROCESS SCHEMATIC
SHEET 2 OF 2

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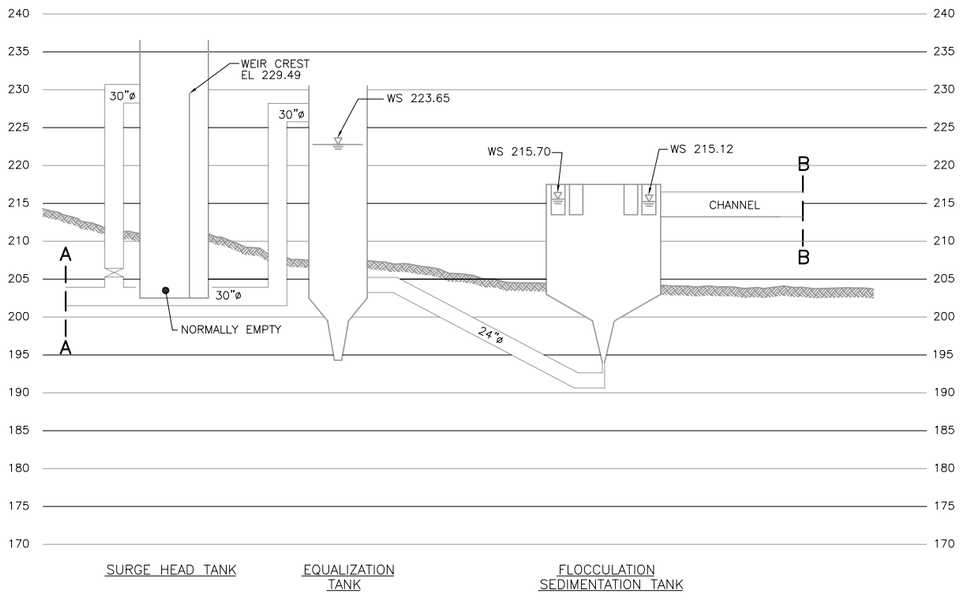
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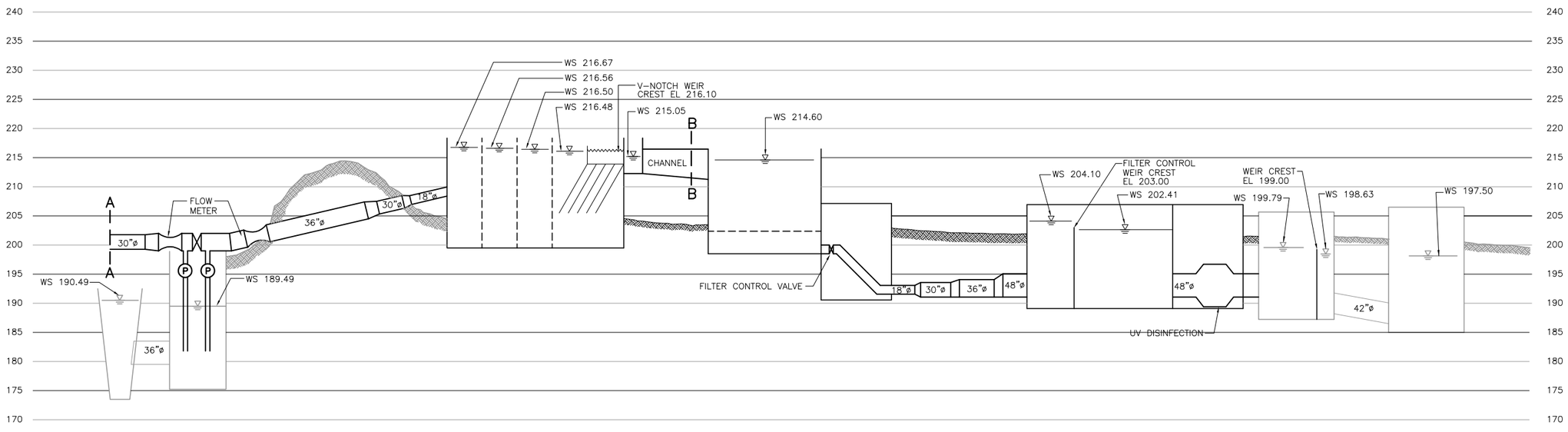
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LEGEND

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

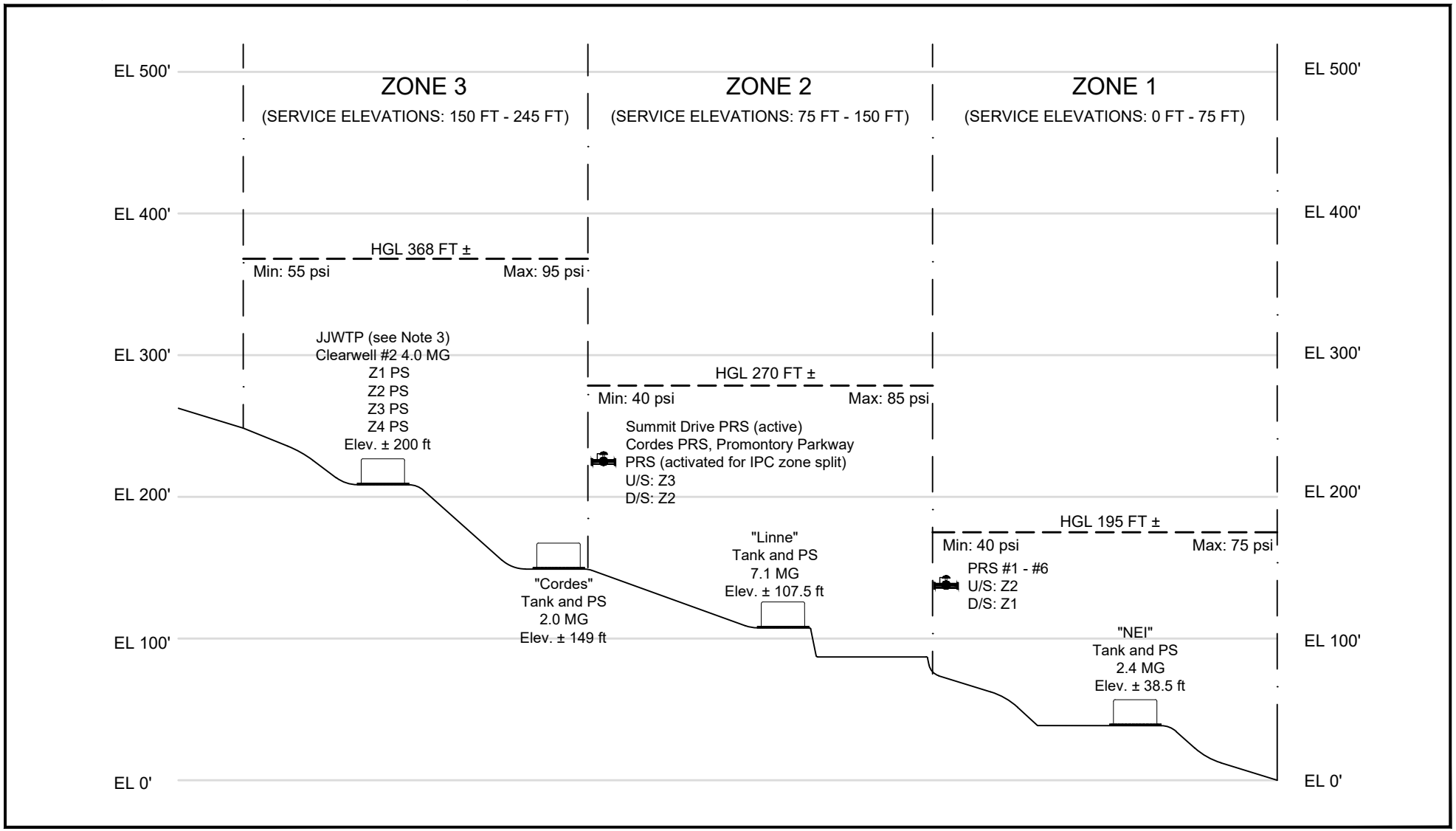
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APPENDIX C

City of Tracy

Existing Potable Water System Hydraulic Grade Schematic

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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

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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

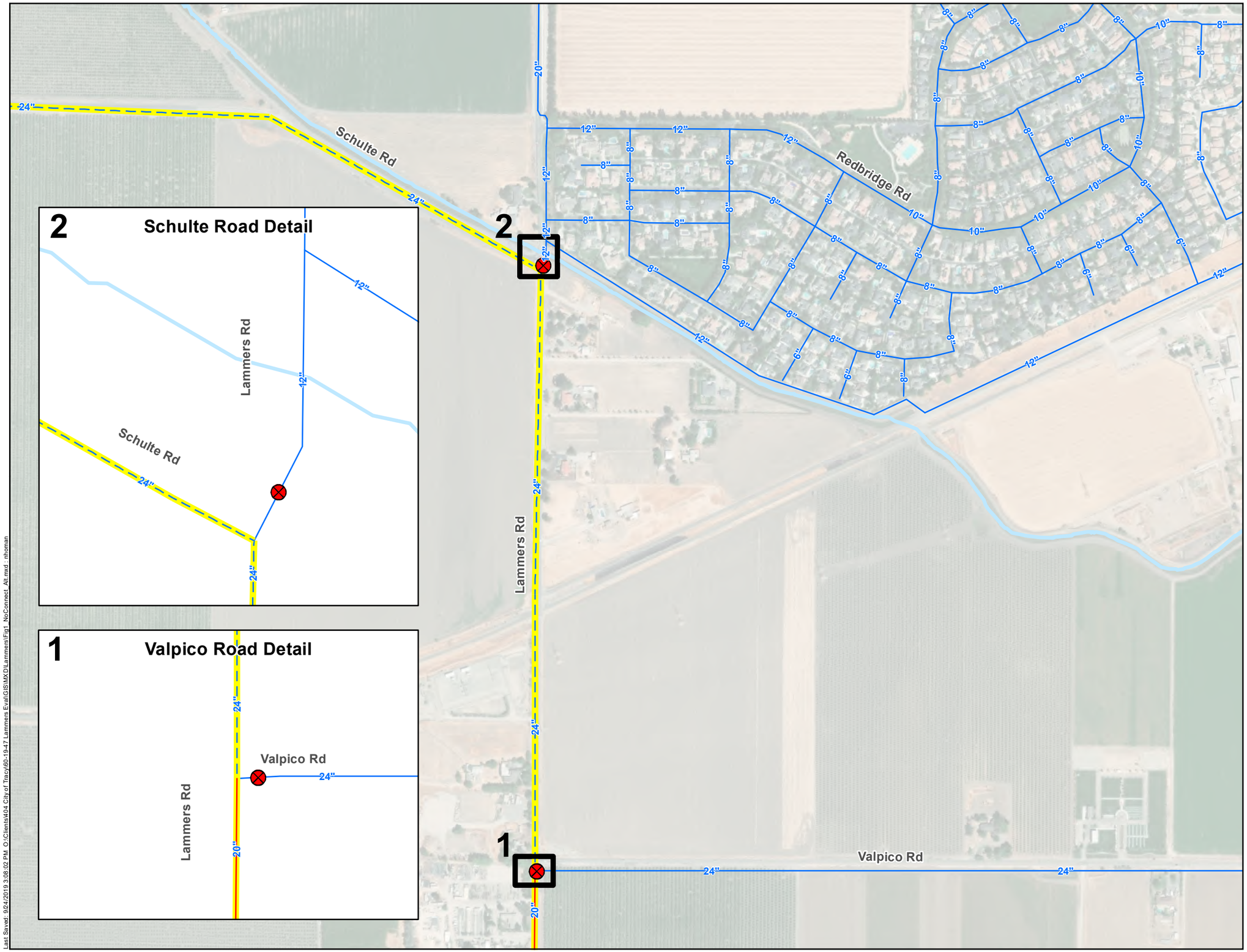
at buildout, the buildout analysis may determine that the new transmission pipeline should be of a larger diameter than is recommended in this evaluation.

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.



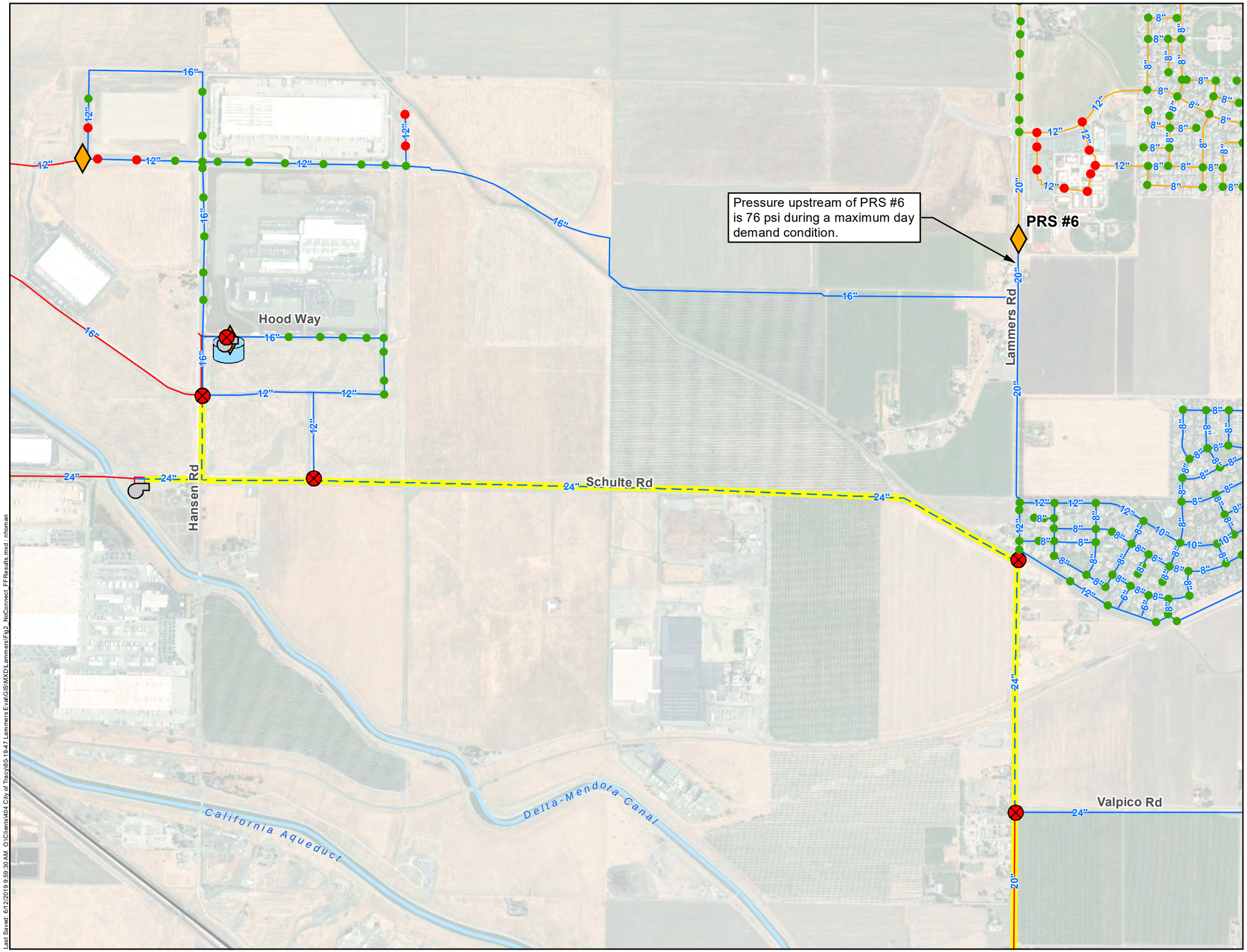
Notes:
1. Details are not to scale.

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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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.

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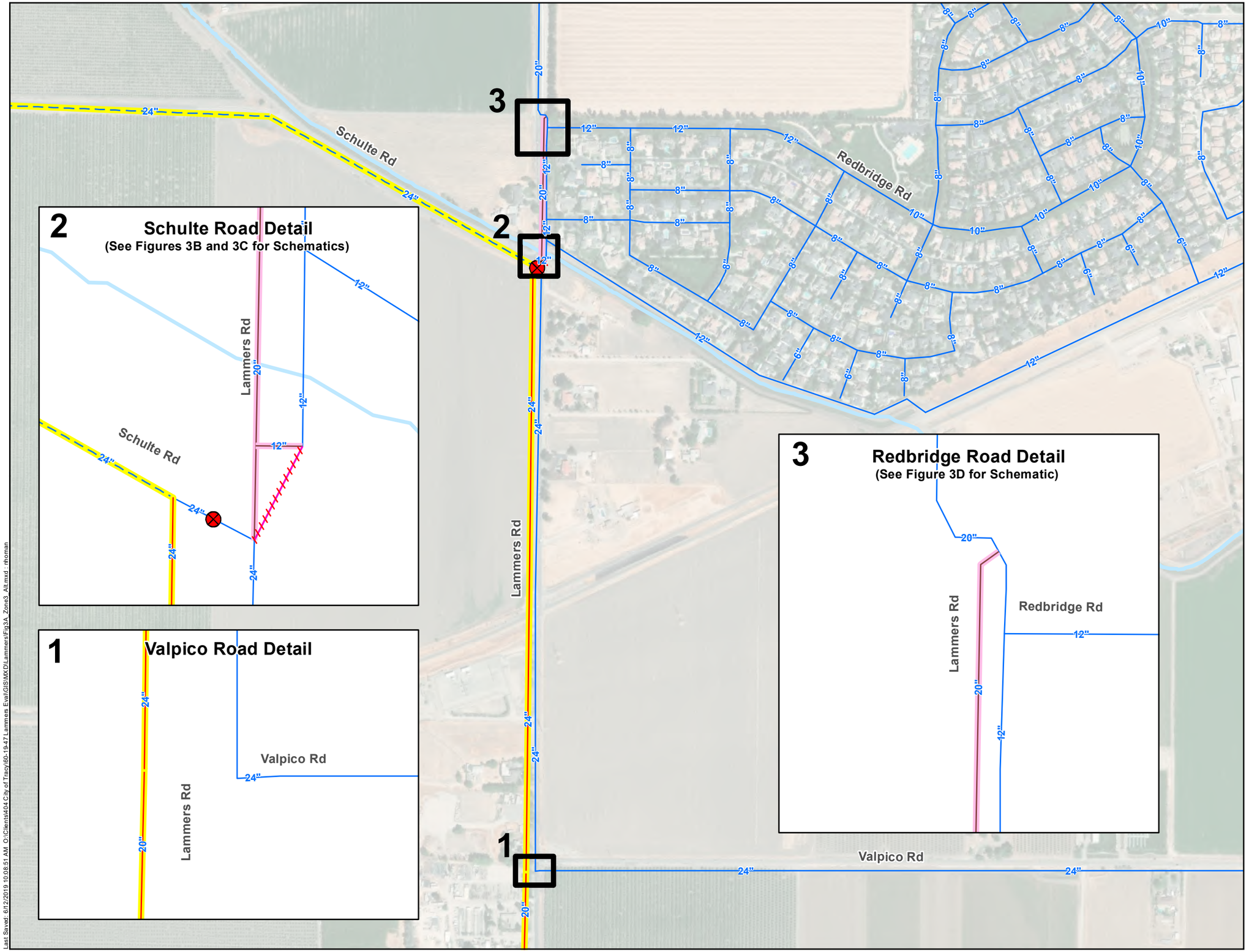
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Figure 2

Alternative 1
Available Fire Flow

City of Tracy
Design Recommendations for
Lammers Road Pipeline

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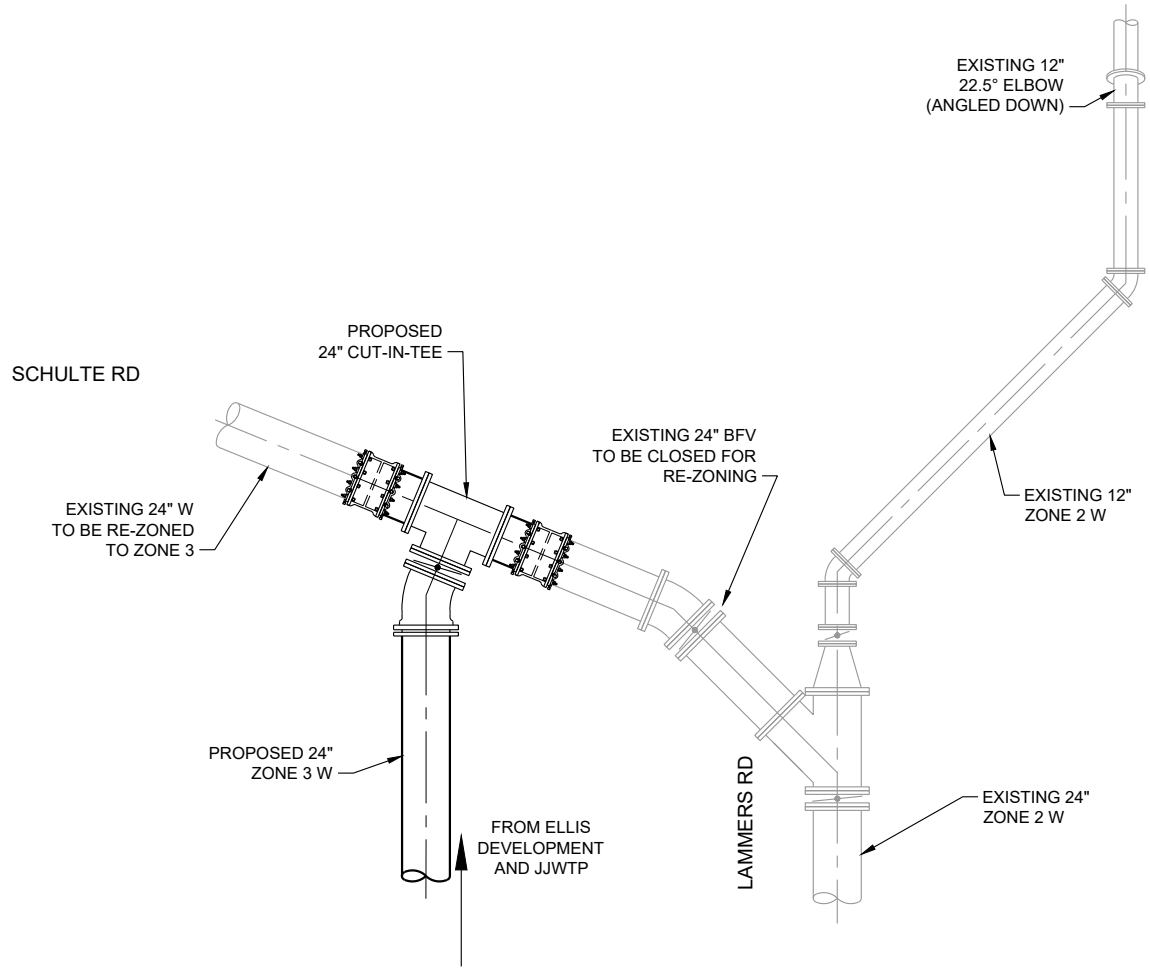
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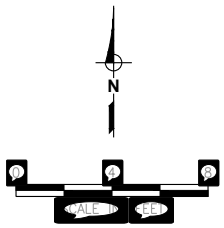
Figure 3A

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.



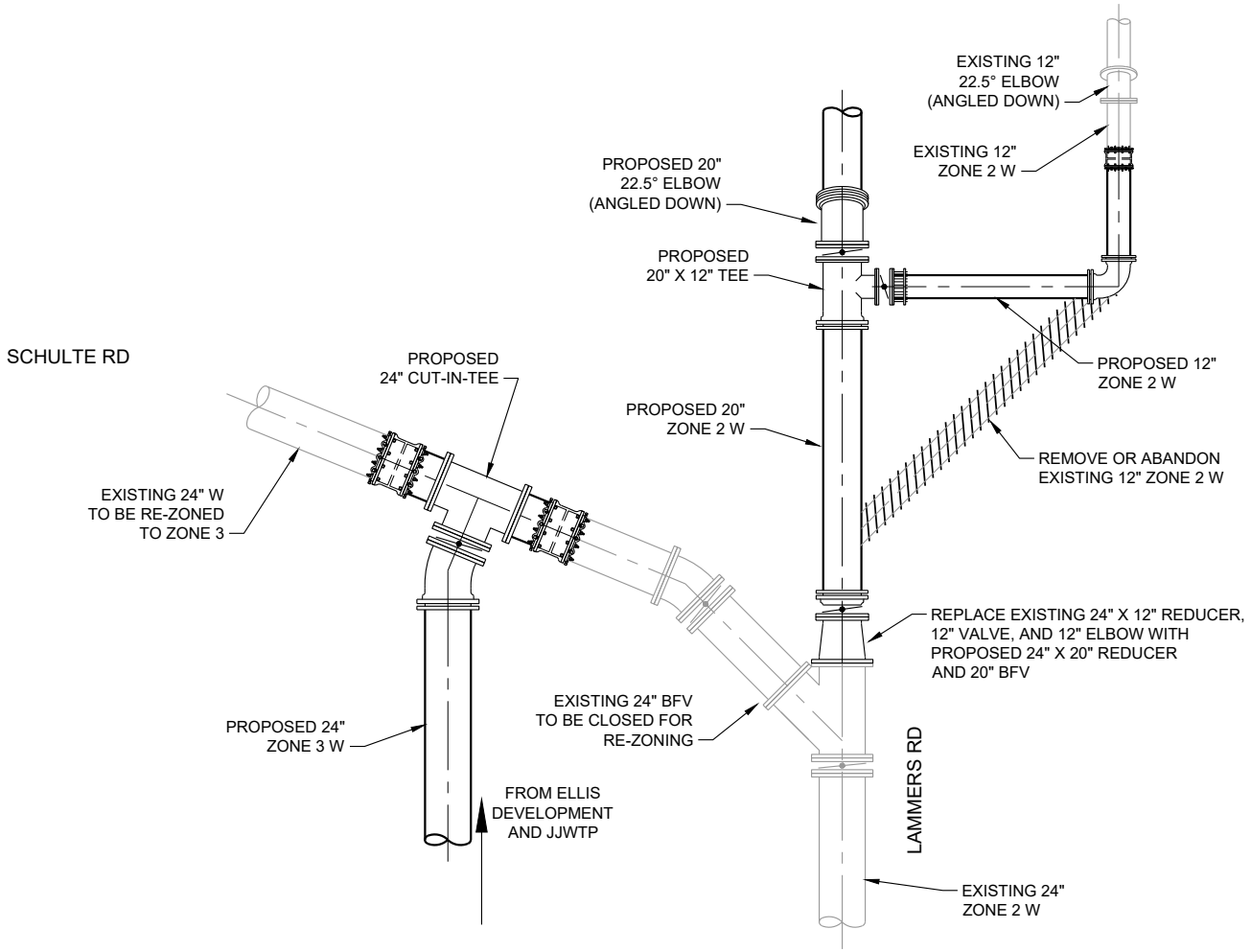
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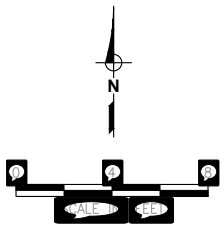
Figure 3B

Alternative 3
Schematic of Schulte Road and Lammers Road Connection

City of Tracy
Design Recommendations for
Lammers Road Pipeline



Notes:
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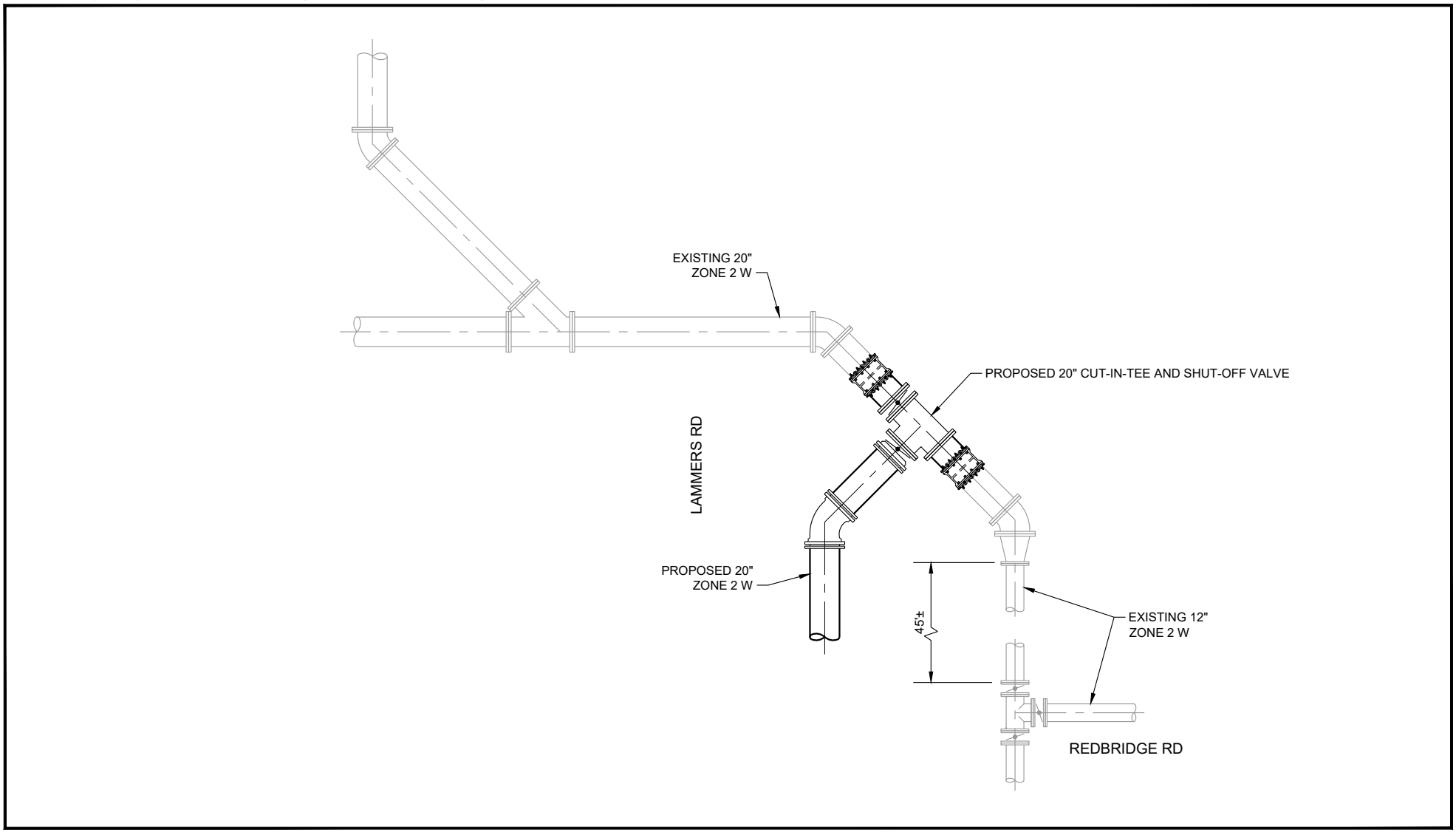
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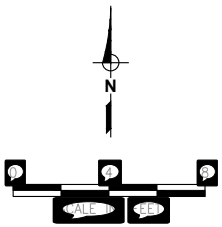
Figure 3C

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.



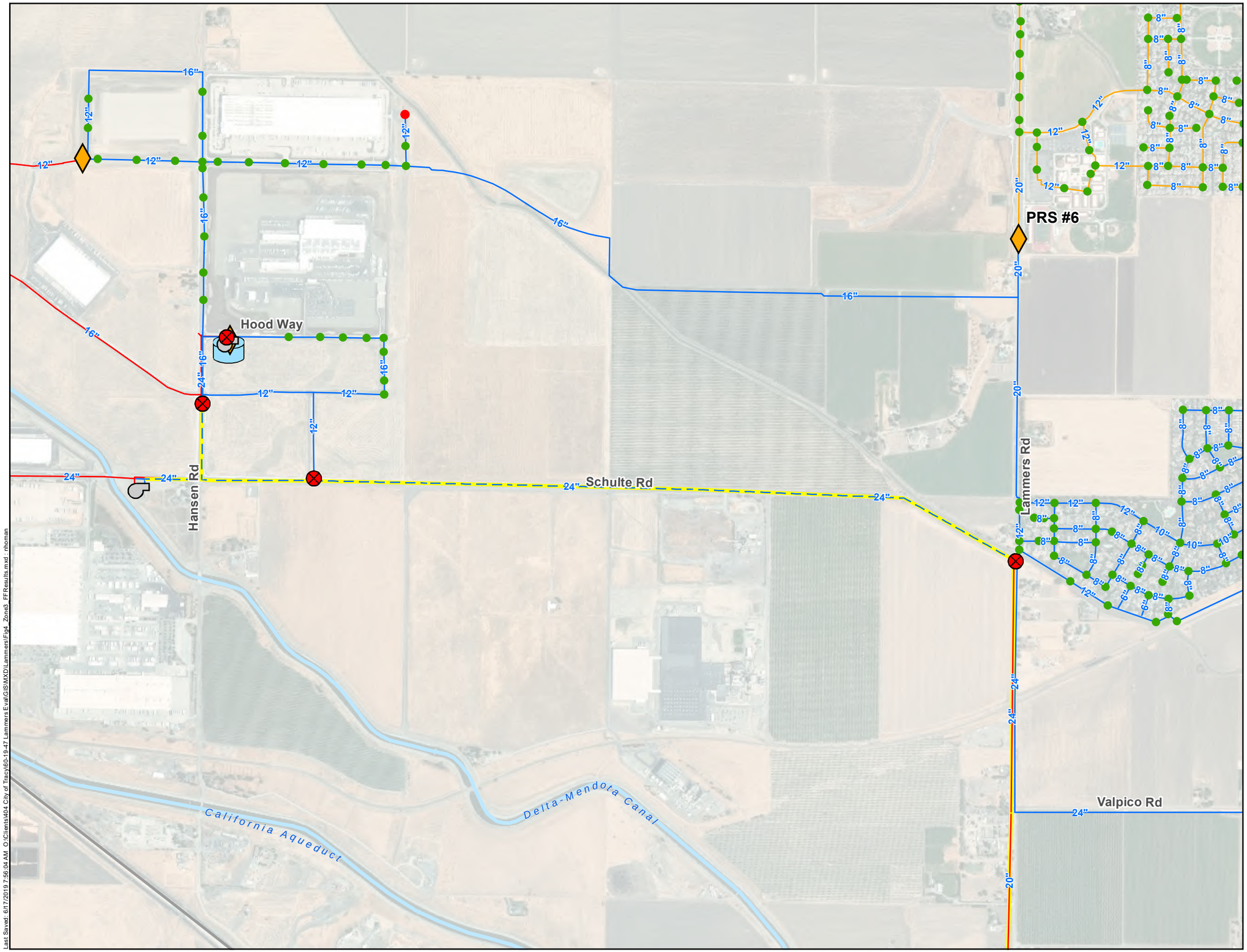
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Figure 3D

Alternative 3
Schematic of Redbridge Road and Lammers Road Connection with Optional Zone 2 Pipeline

City of Tracy
Design Recommendations for
Lammers Road Pipeline



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.

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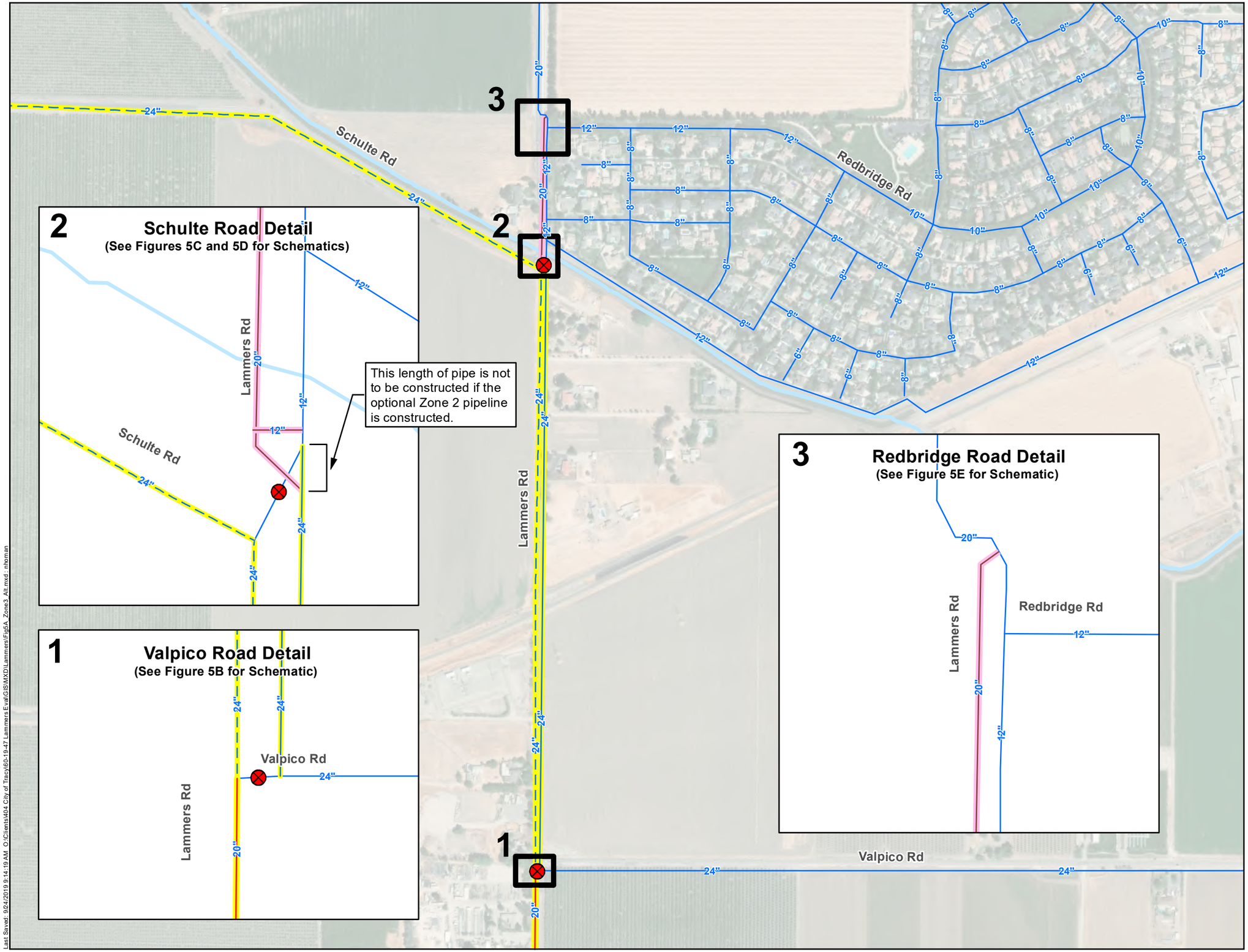
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Figure 4

Alternative 3
Available Fire Flow

City of Tracy
Design Recommendations for
Lammers Road Pipeline

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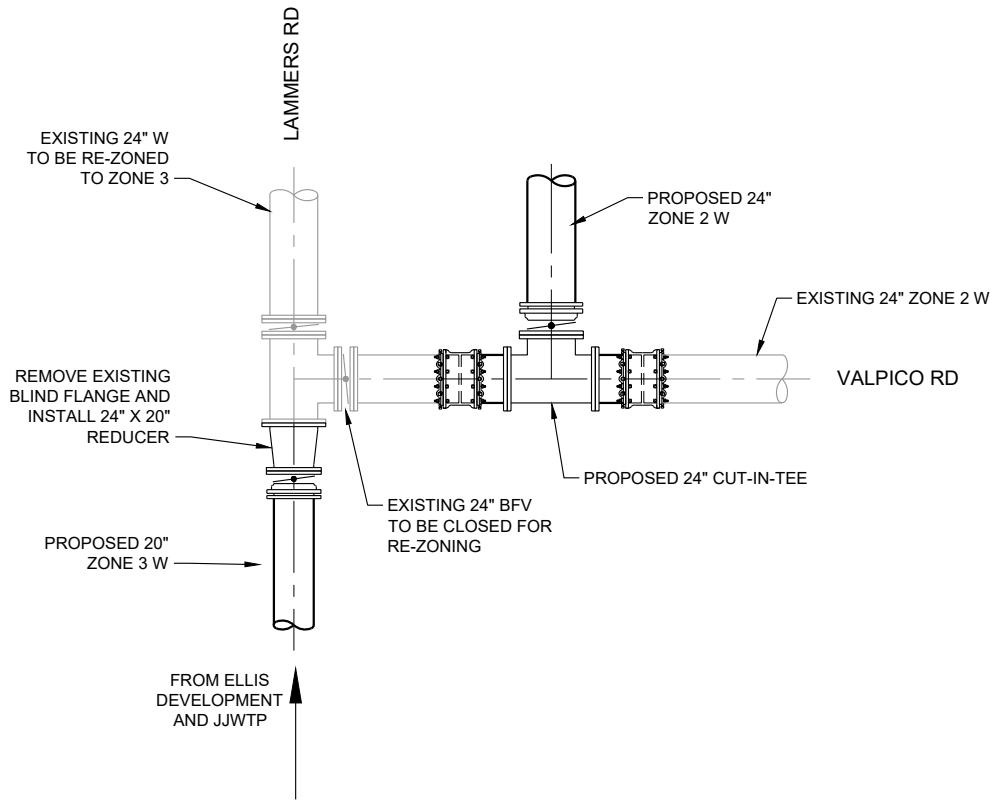
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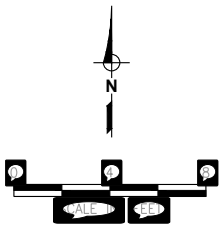
Figure 5A

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.



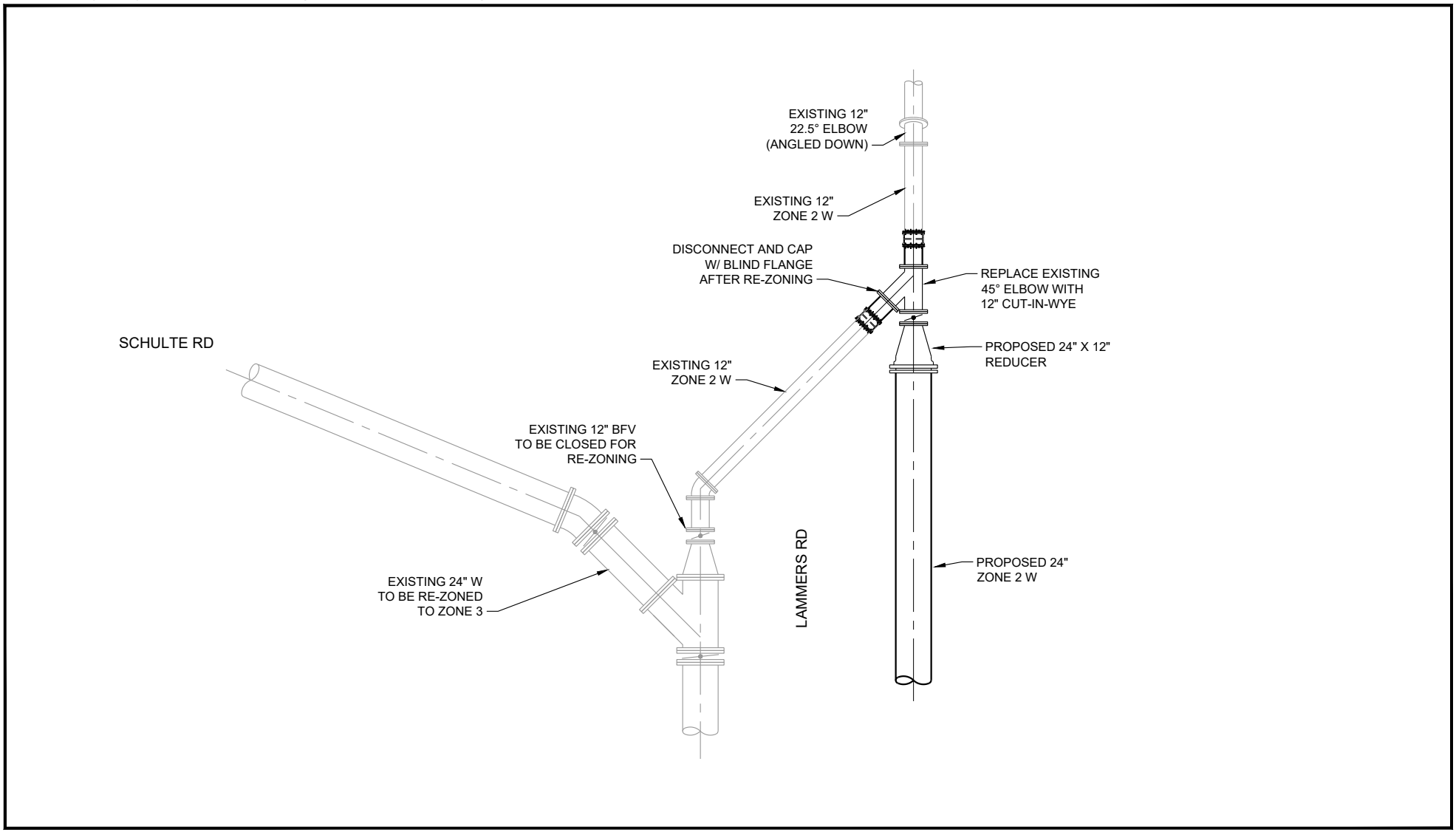
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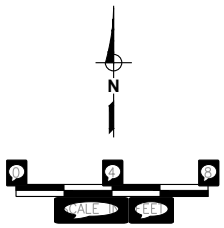
Figure 5B

Alternative 4
Schematic of Valpico Road and Lammers Road Connection

City of Tracy
Design Recommendations for
Lammers Road Pipeline



Notes:
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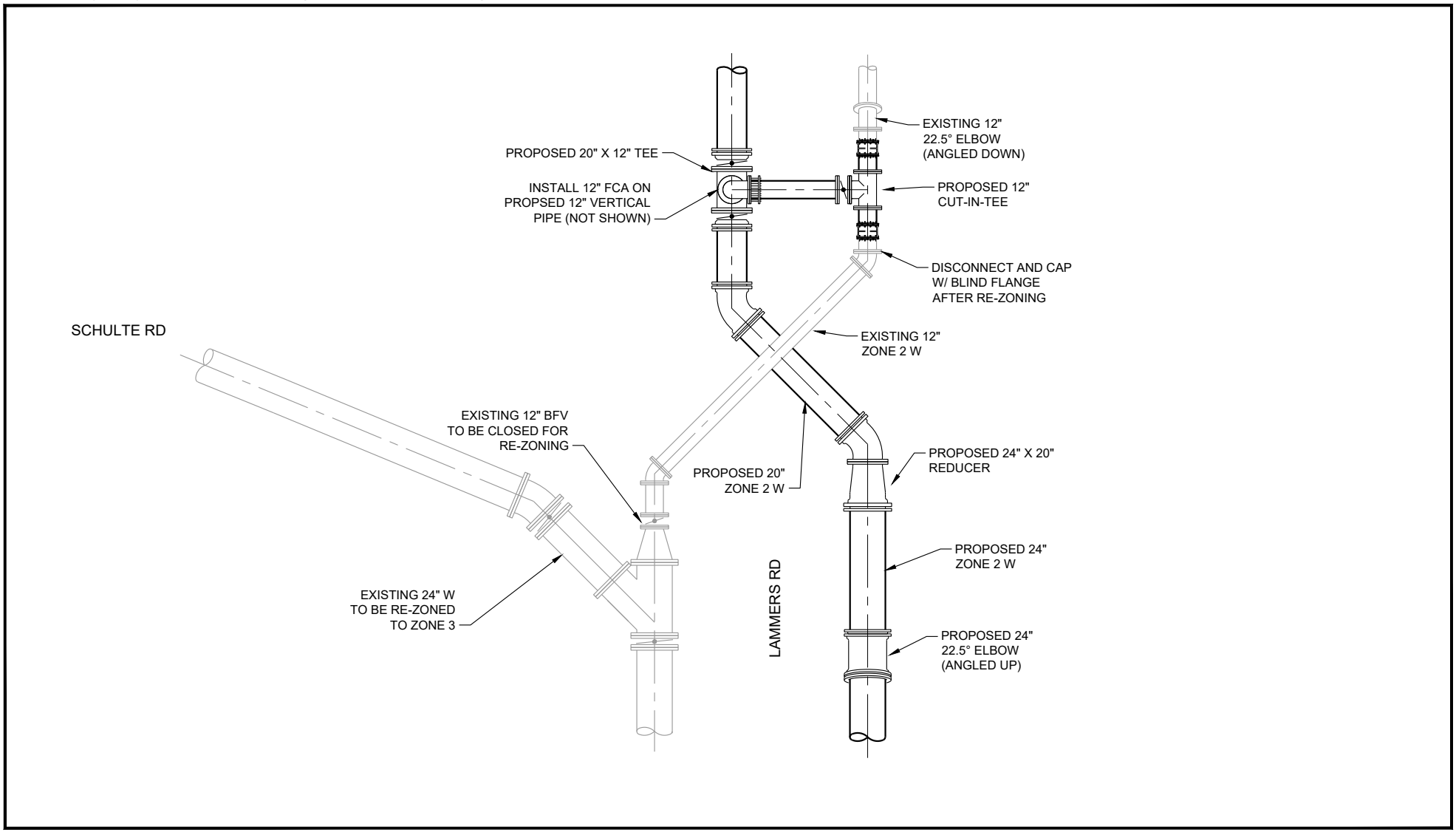
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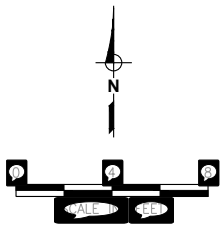
Figure 5C

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.



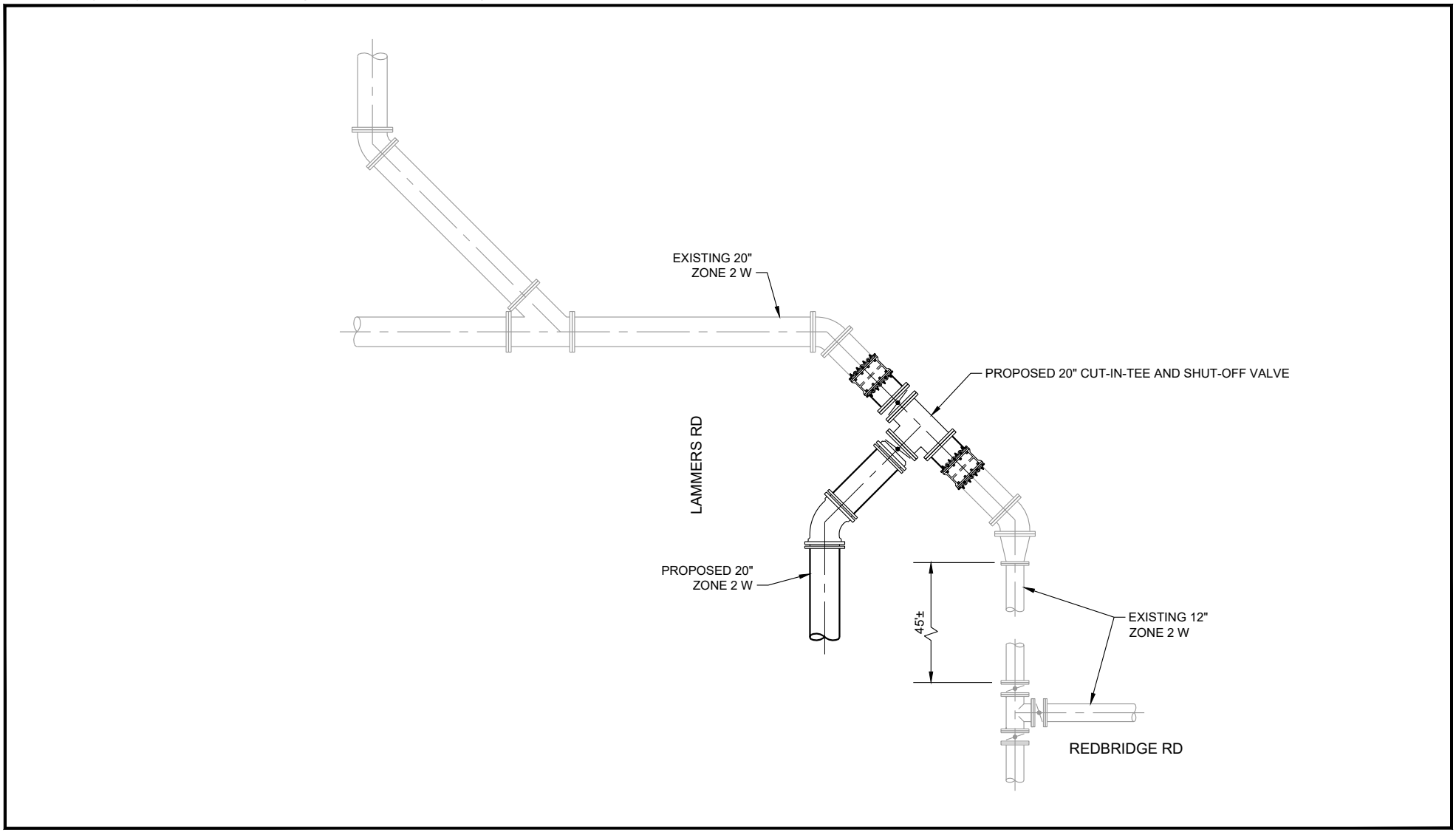
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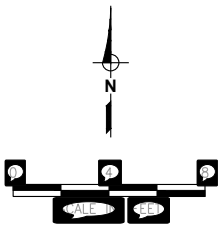
Figure 5D

Alternative 4
Schematic of Schulte Road and Lammers Road Connection with Optional Zone 2 Pipeline

City of Tracy
Design Recommendations for
Lammers Road Pipeline



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.



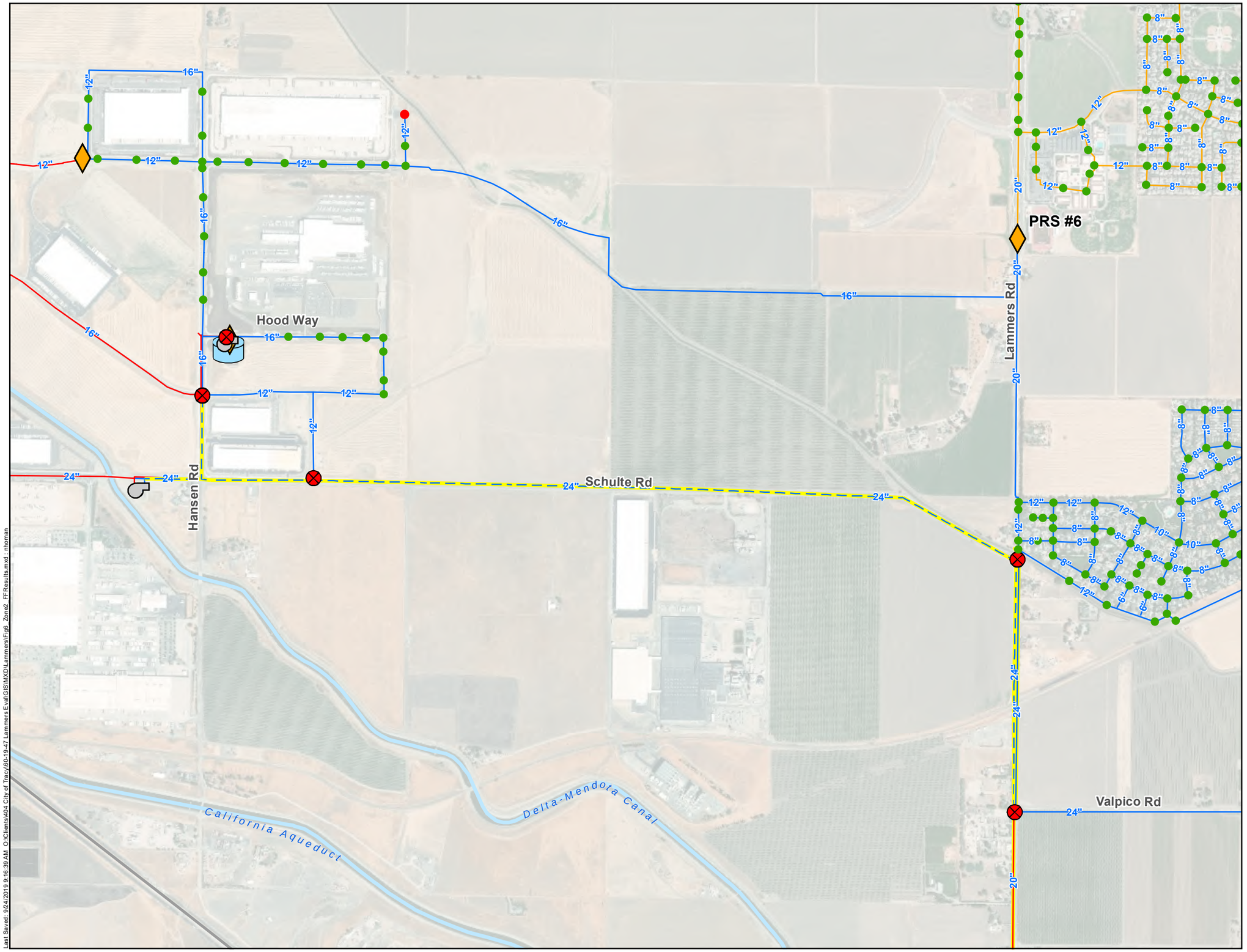
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Figure 5E

Alternative 4
Schematic of Redbridge Road and Lammers Road Connection with Optional Zone 2 Pipeline

City of Tracy
Design Recommendations for
Lammers Road Pipeline



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

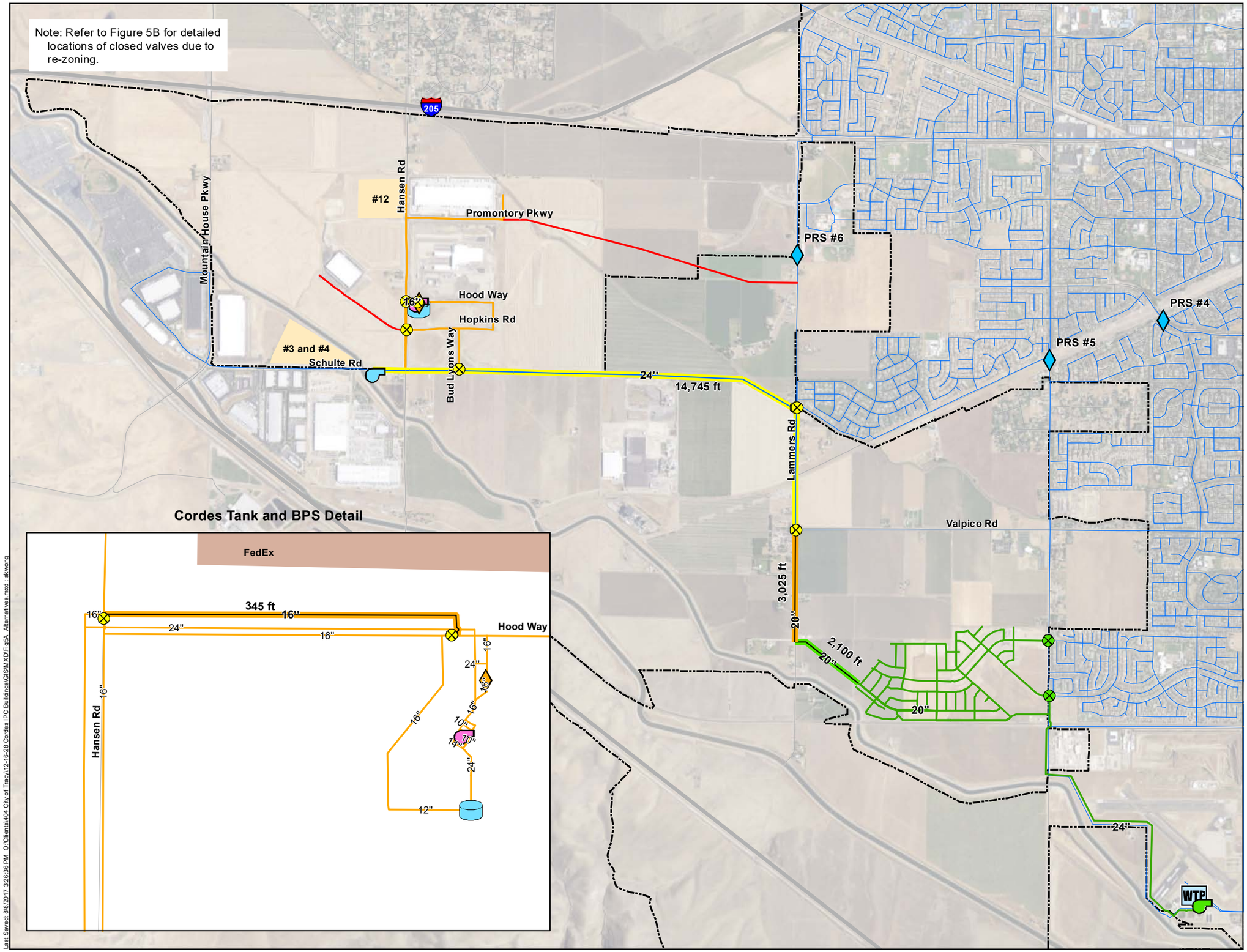
Alternative 4
Available Fire Flow

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

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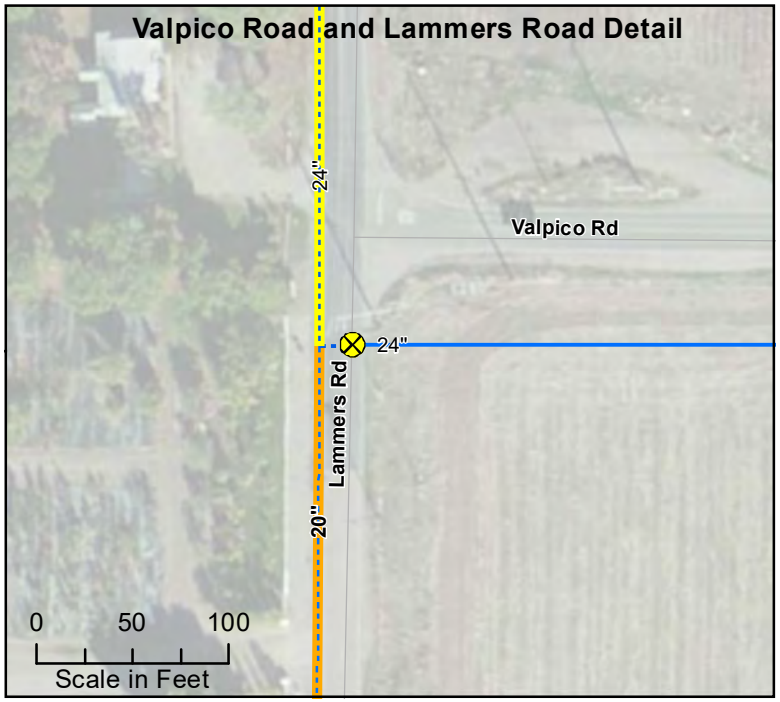
Figure 5A

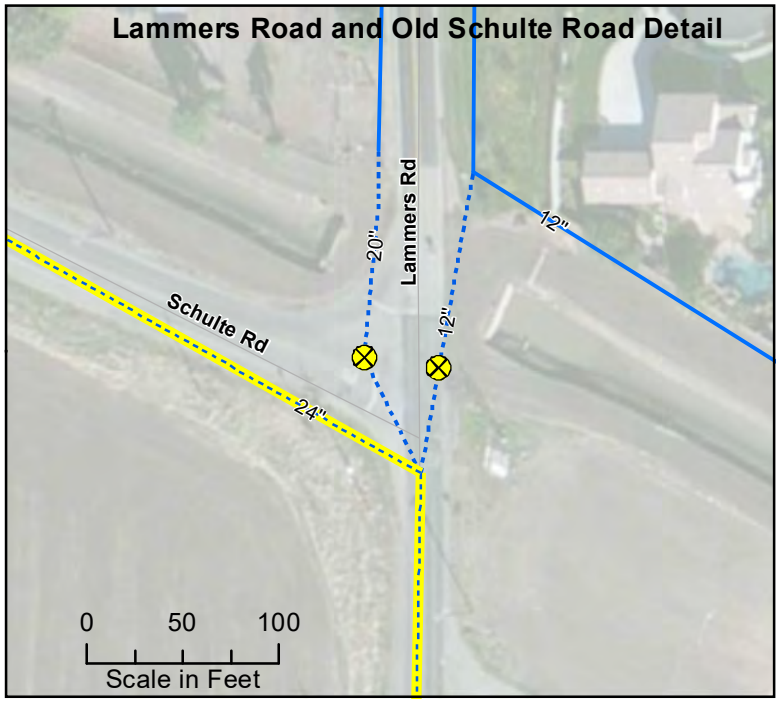
Proposed Alternative Operations

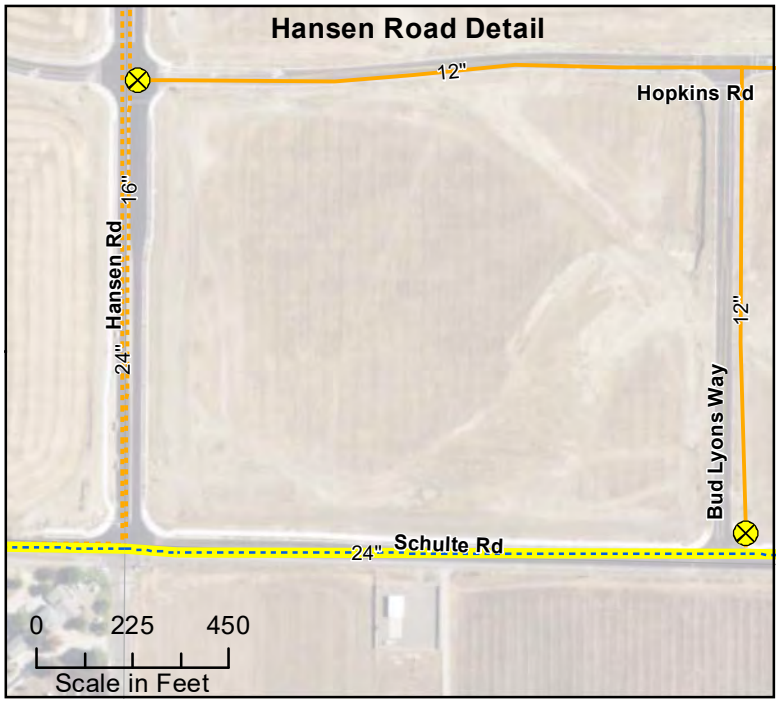
City of Tracy
Hydraulic Evaluation of
IPC Buildings 3, 4, and 12

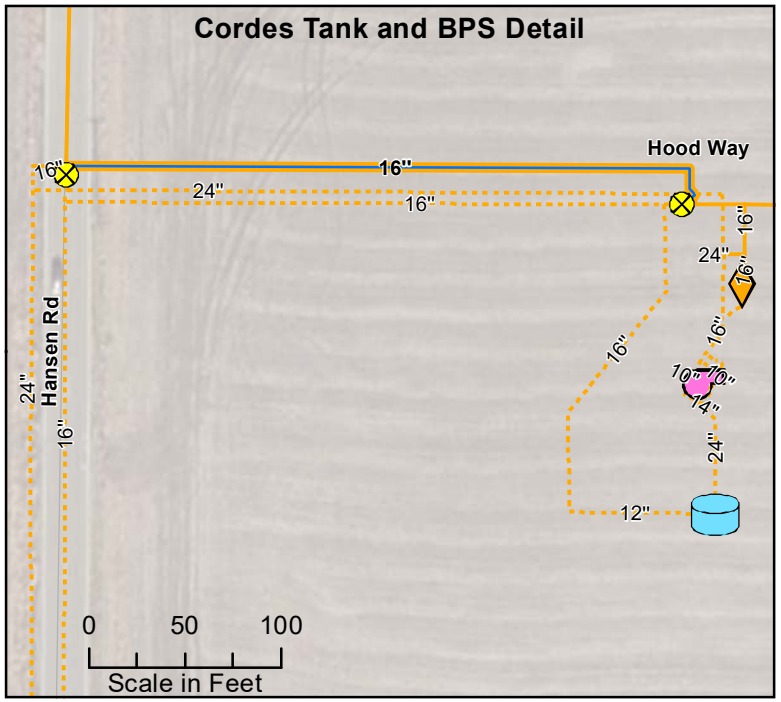
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N

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

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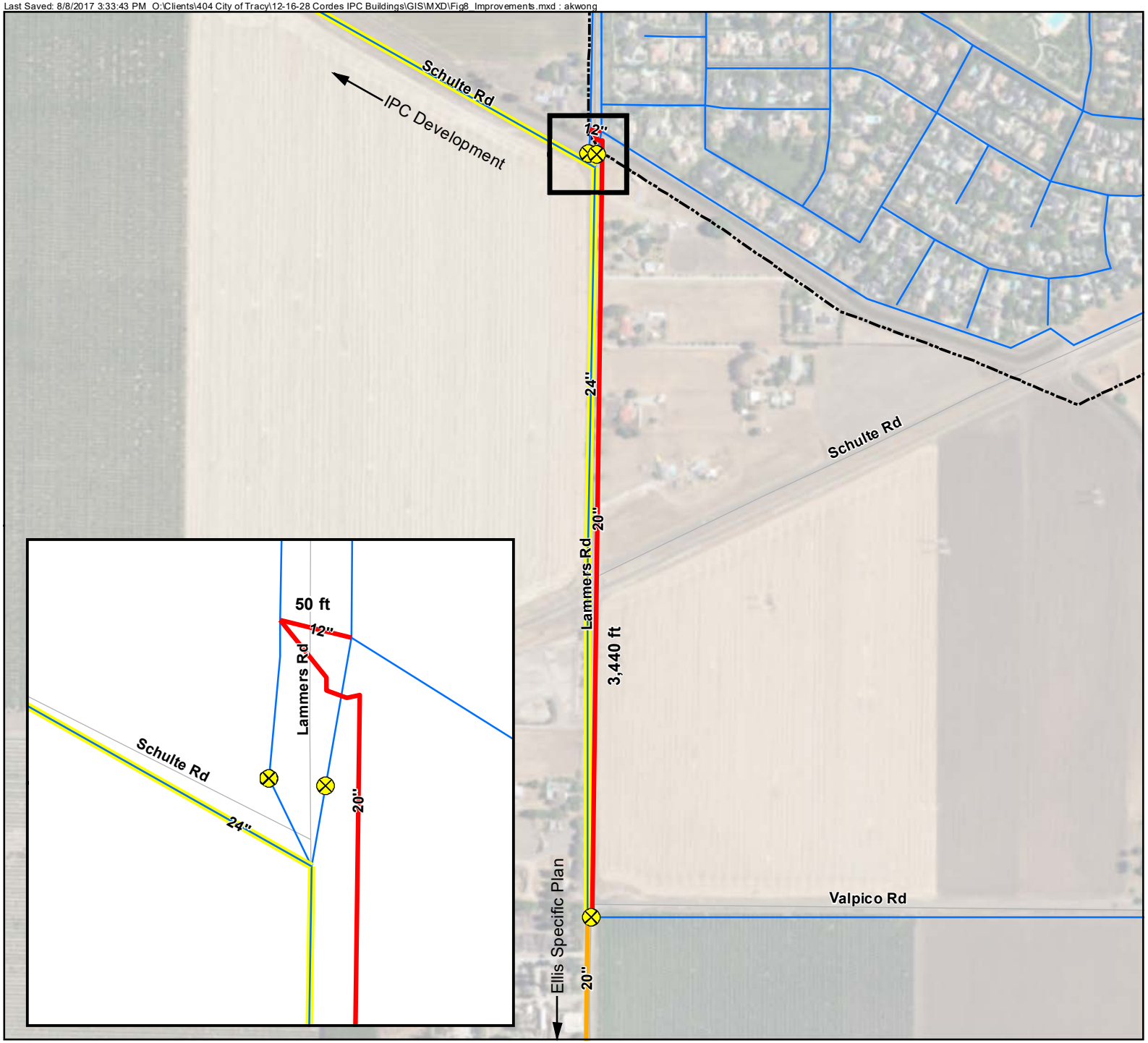
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Figure 5B

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:

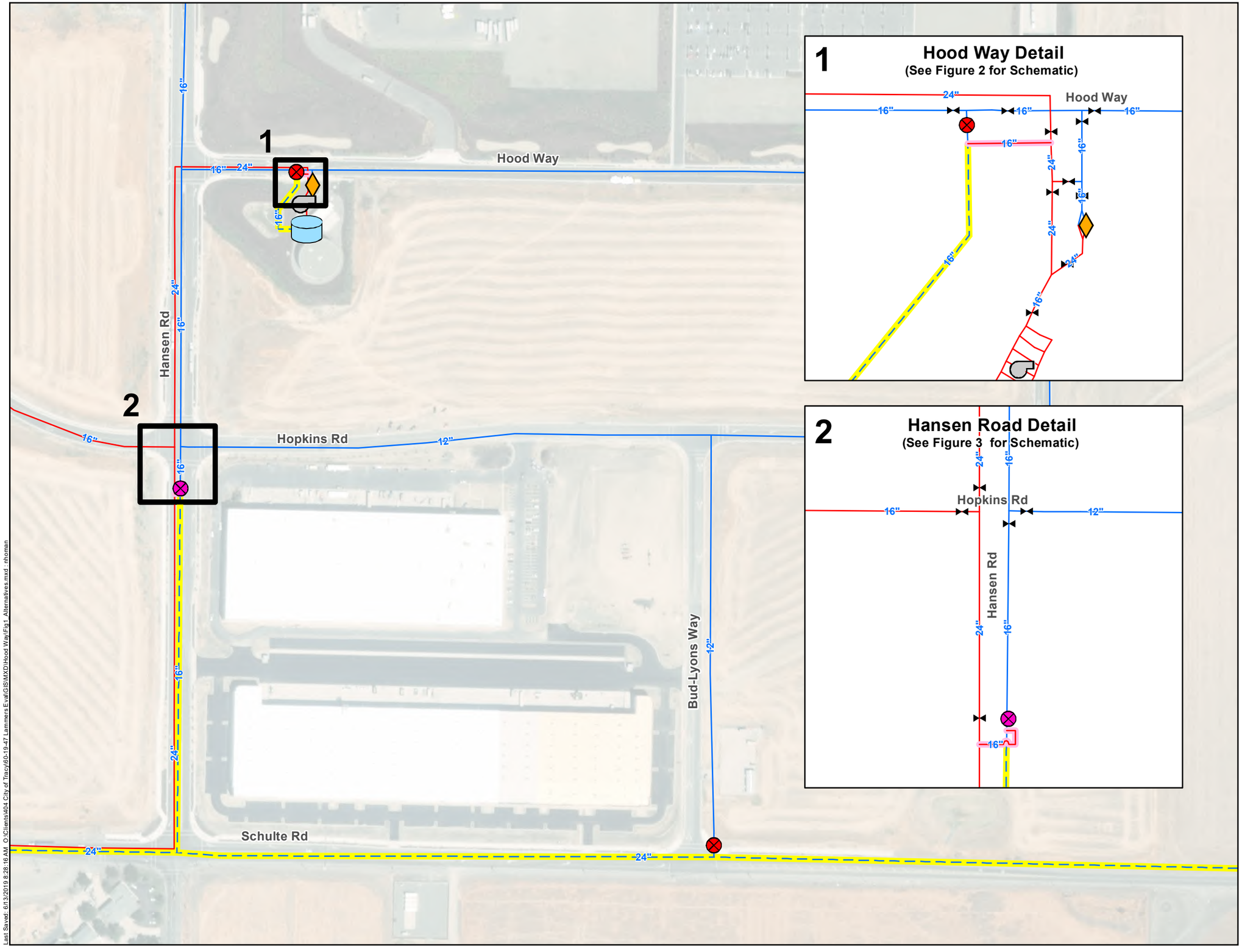
1. The total length of new pipeline required is 289 ft shorter than the previously recommended pipeline, making this alternative less expensive.
2. The proposed connections preserve the existing Zone 2 pipeline loop in Hansen Road, Hood Way, and Hopkins Road, unlike the alternative recommended in the 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:

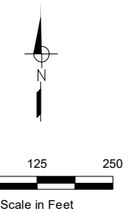
1. Placing the water service lateral for the future building located east of Bud-Lyons Way as close as possible to the southern end of Bud Lyons Way. The demands from the building would keep water flowing through the pipeline and prevent stagnant water from forming.
2. Abandoning the pipeline in Bud 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.

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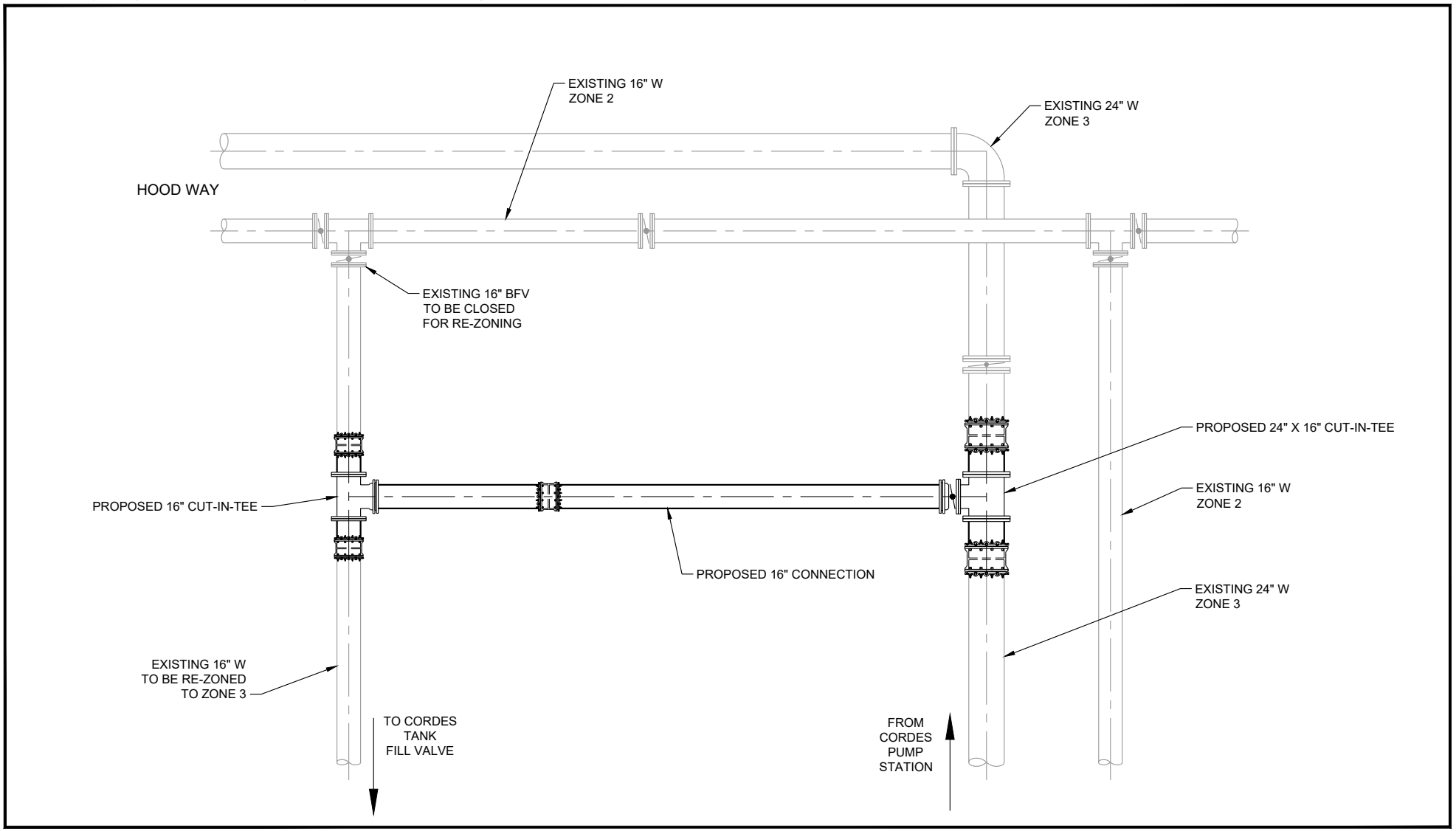
WEST YOST ASSOCIATES

Figure 1

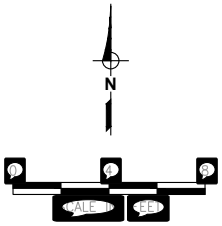
Recommended Connections for Re-Zoning at Hood Way and Hansen Road

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.



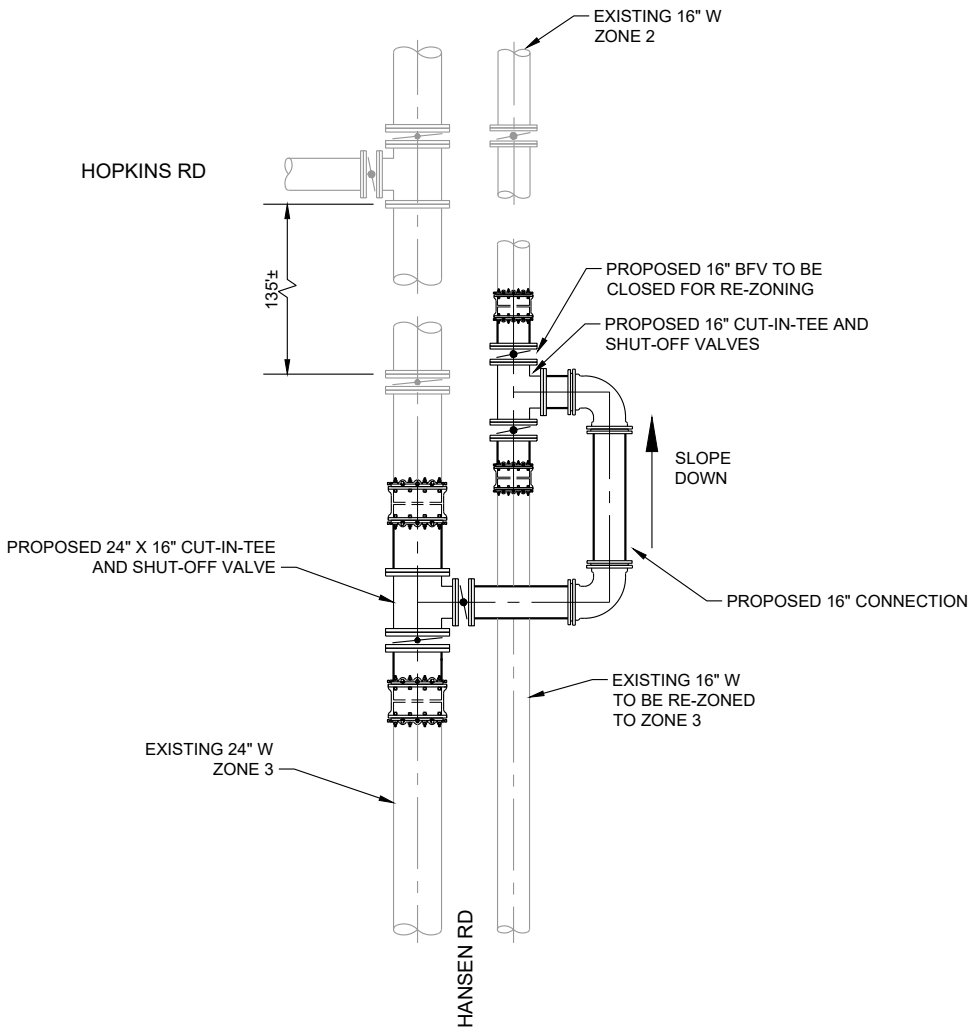
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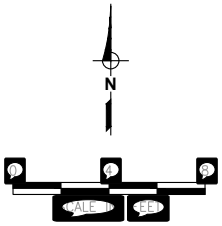
Figure 2

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.

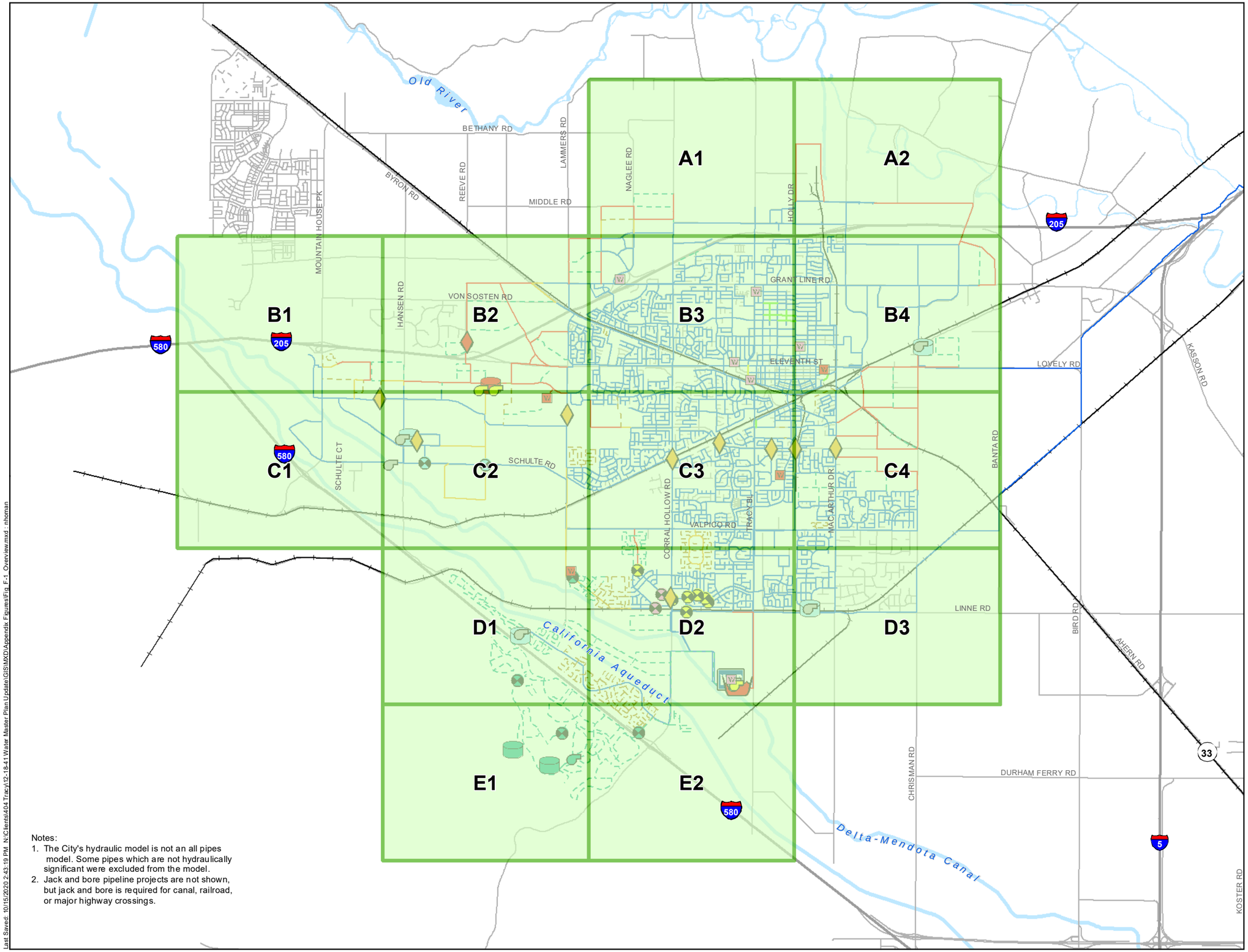
Table 9. Example Application of Mark-ups

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

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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
- WTP John Jones Water Treatment Plant
- Existing System Pipeline
- Proposed Existing System Pipeline CIP

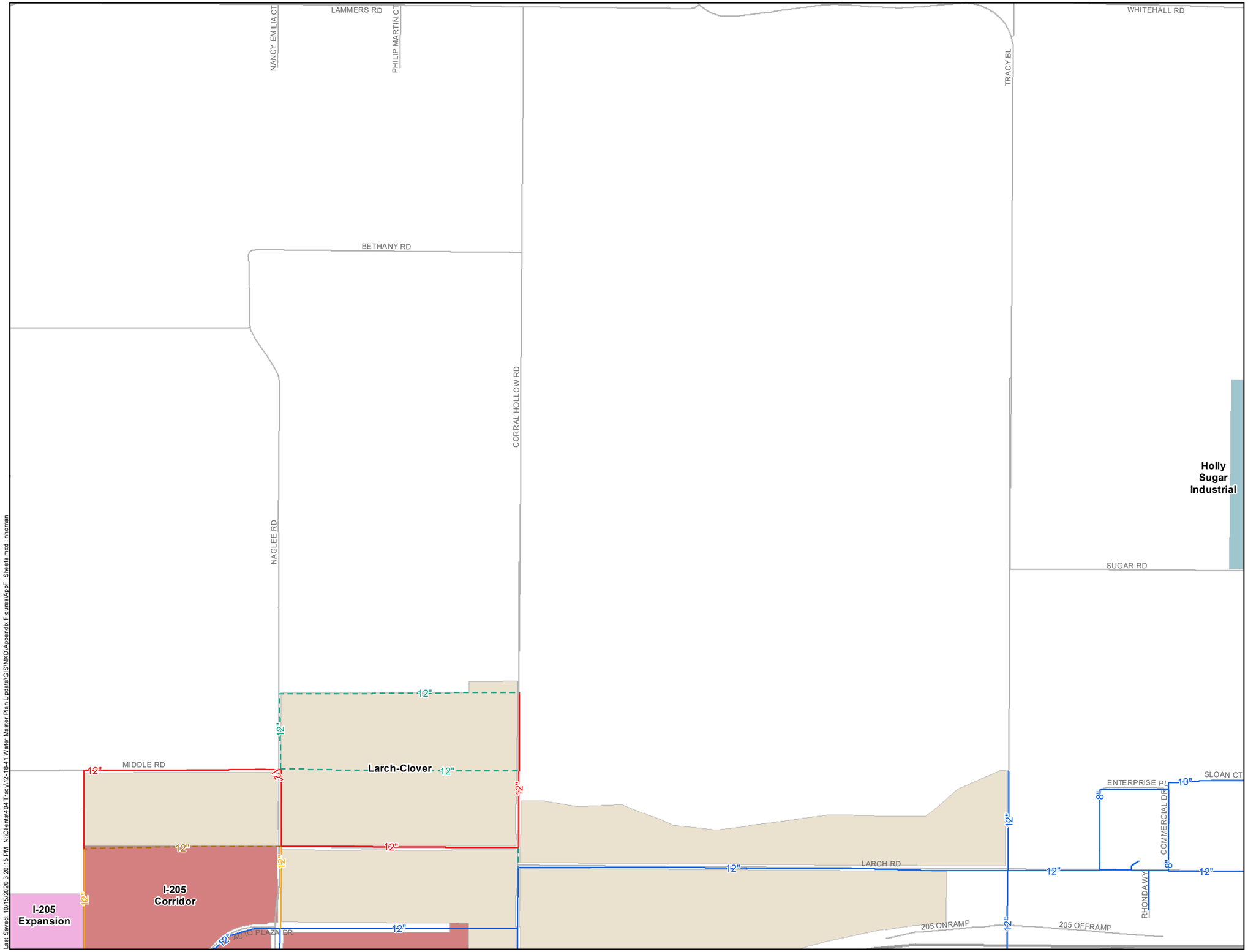
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Figure F-1

Proposed Future Potable Water System Facility Improvements

City of Tracy
Water System Master Plan Update

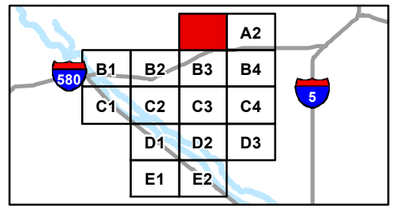


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N

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

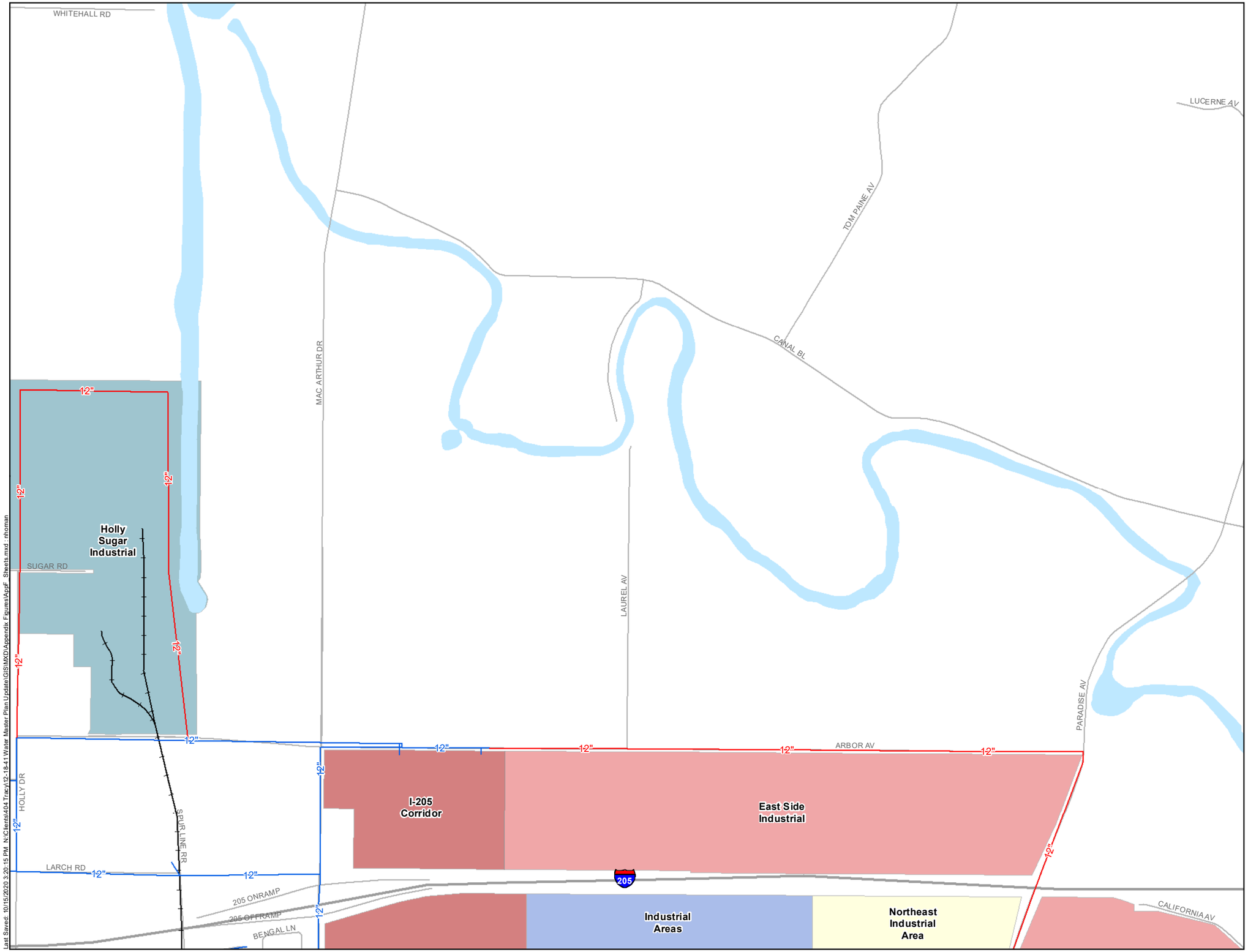
- Existing Pressure Regulating Station
- Existing Pressure Reducing Valve
- Existing Booster Pump Station
- Existing Groundwater Well
- Existing Storage Tank
- Existing System Pipeline
- Proposed Existing System Pipeline CIP

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Figure F-A1

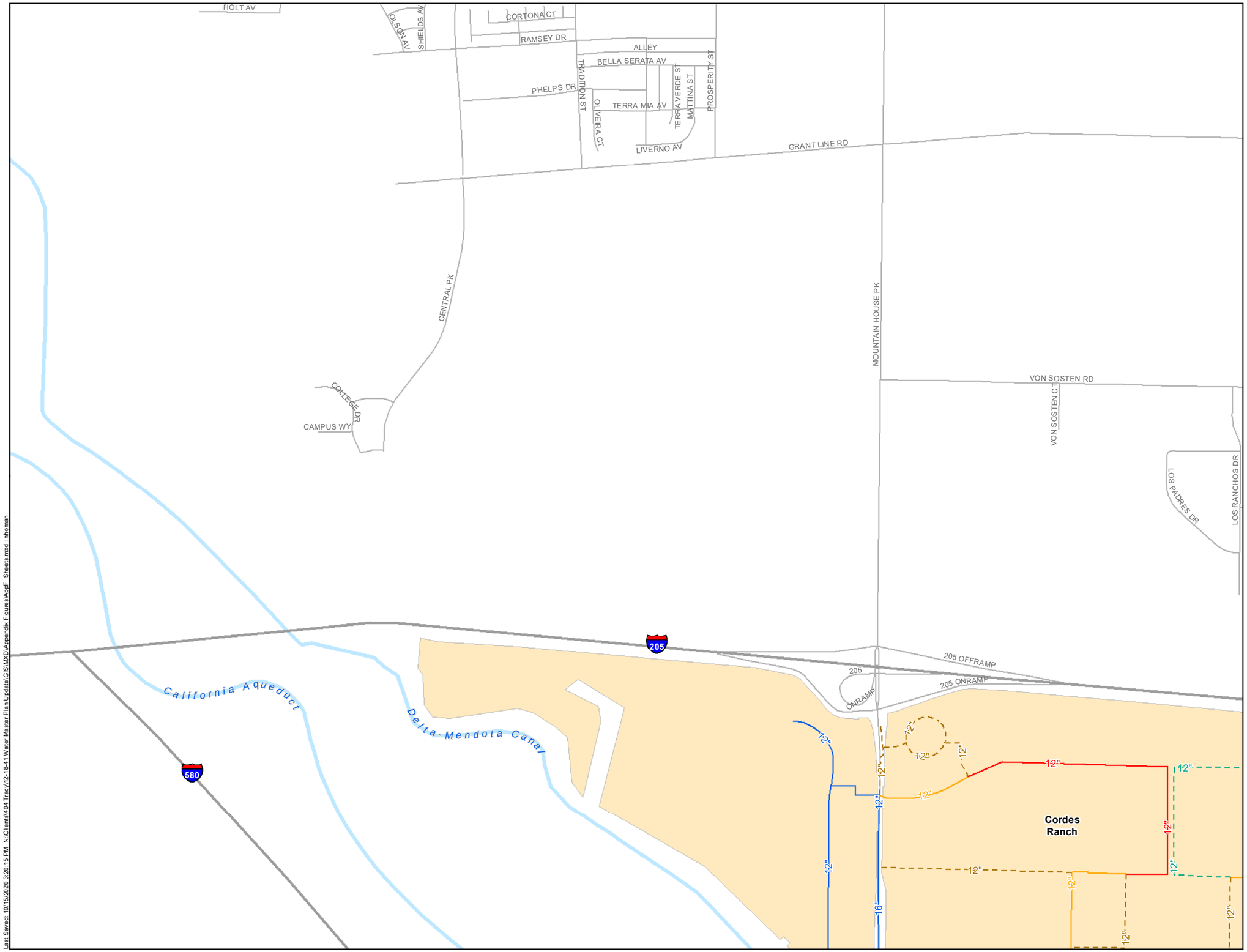
City of Tracy
Water System Master Plan Update



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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

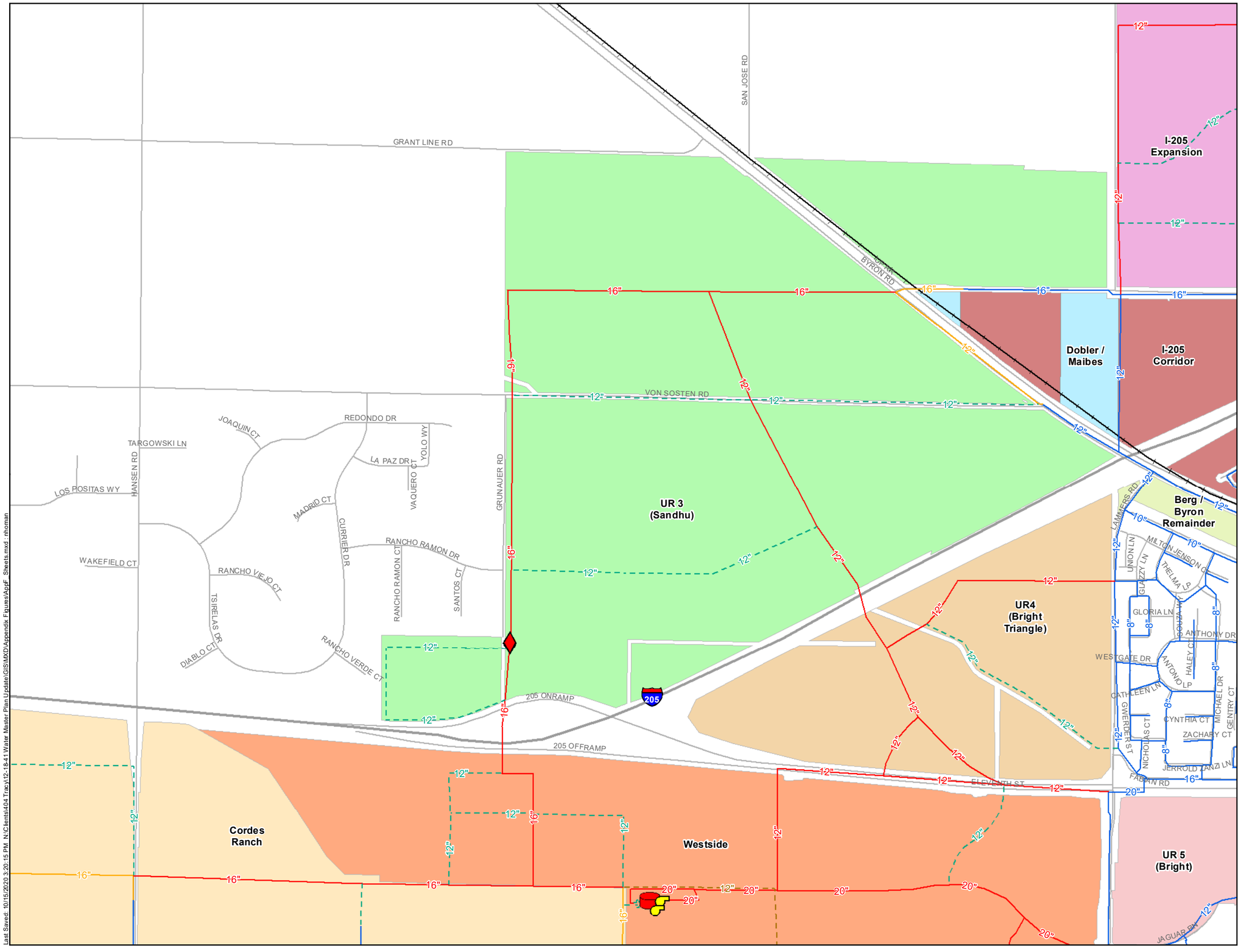
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Figure F-B1

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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

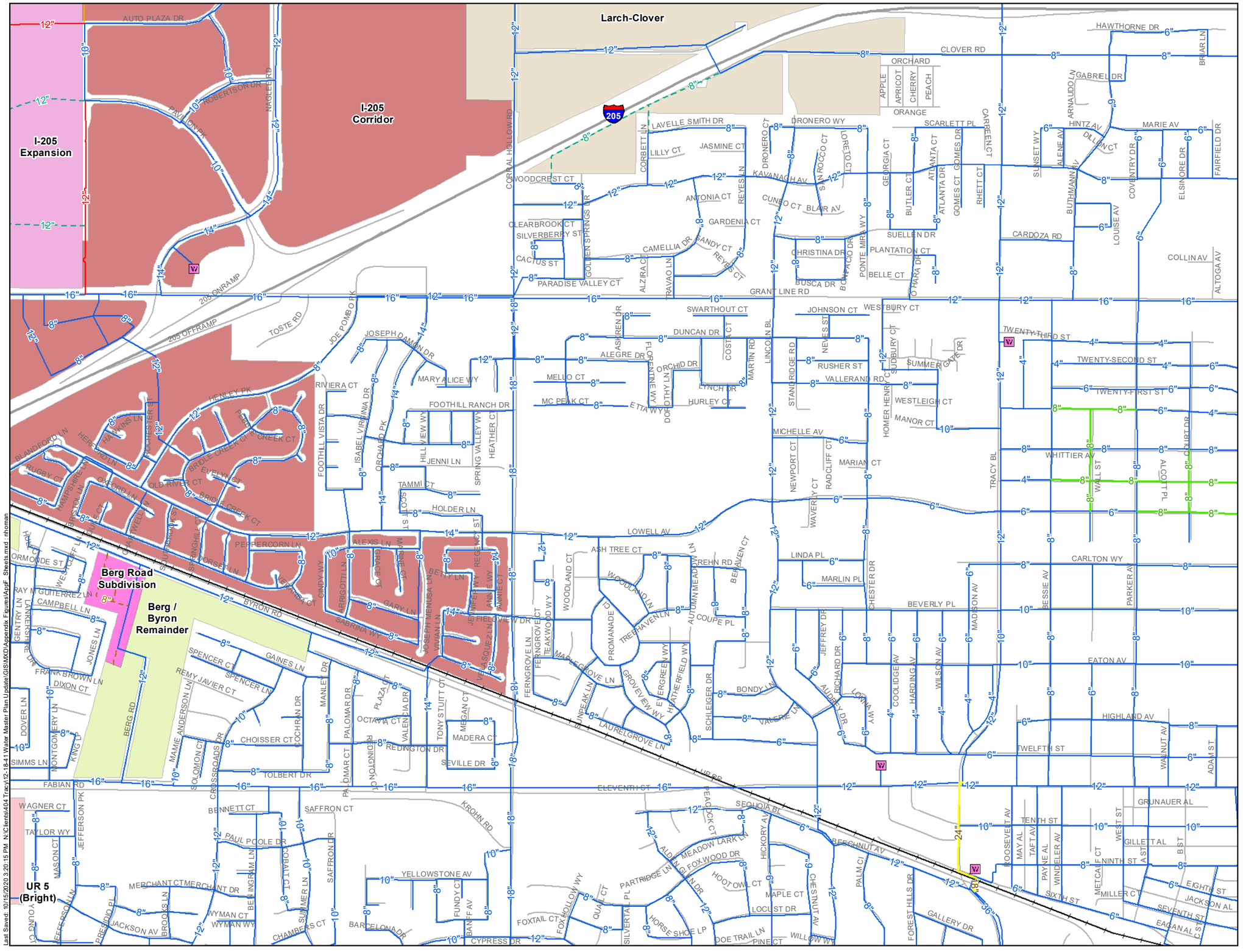
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Figure F-B2

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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

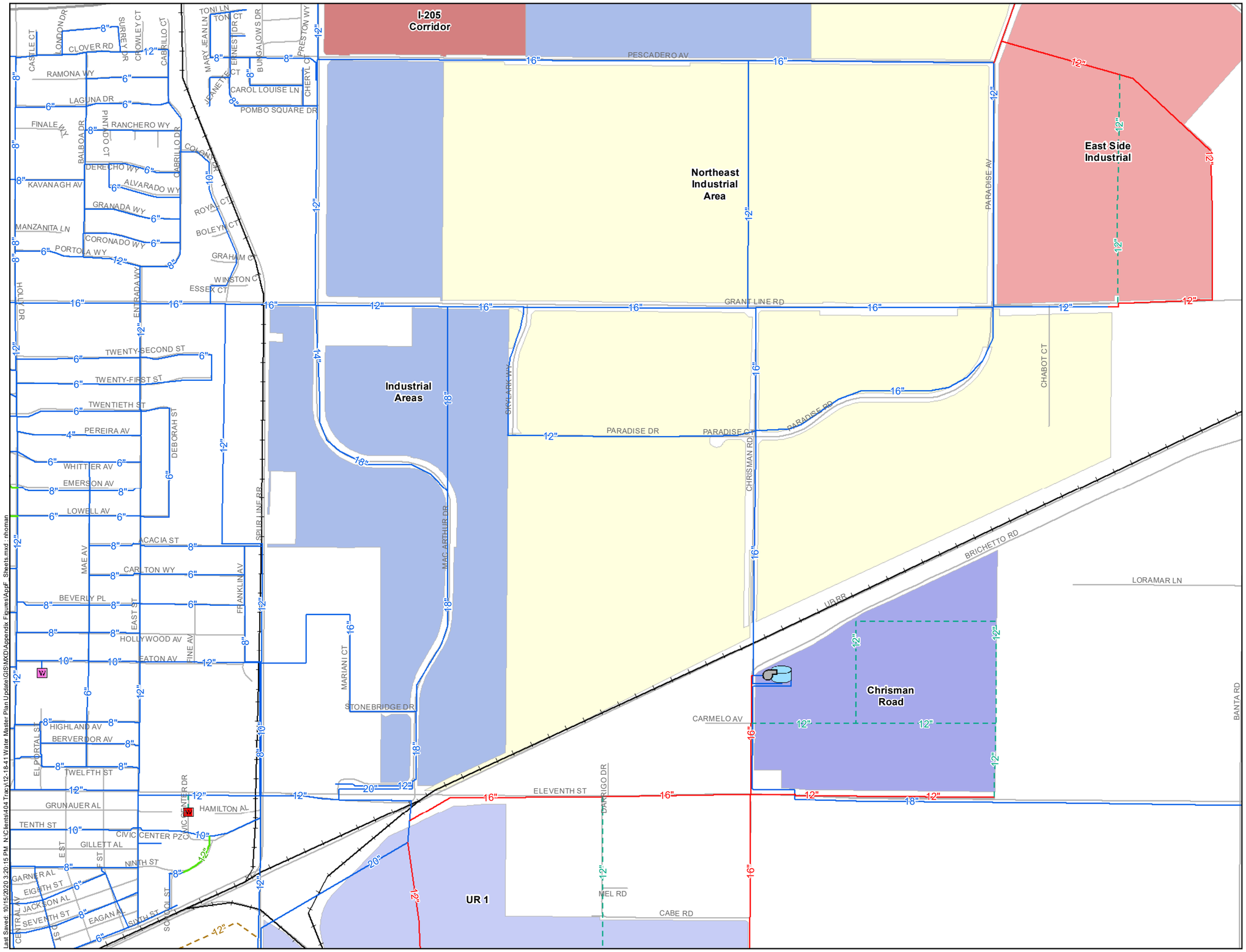
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Figure F-B3

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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

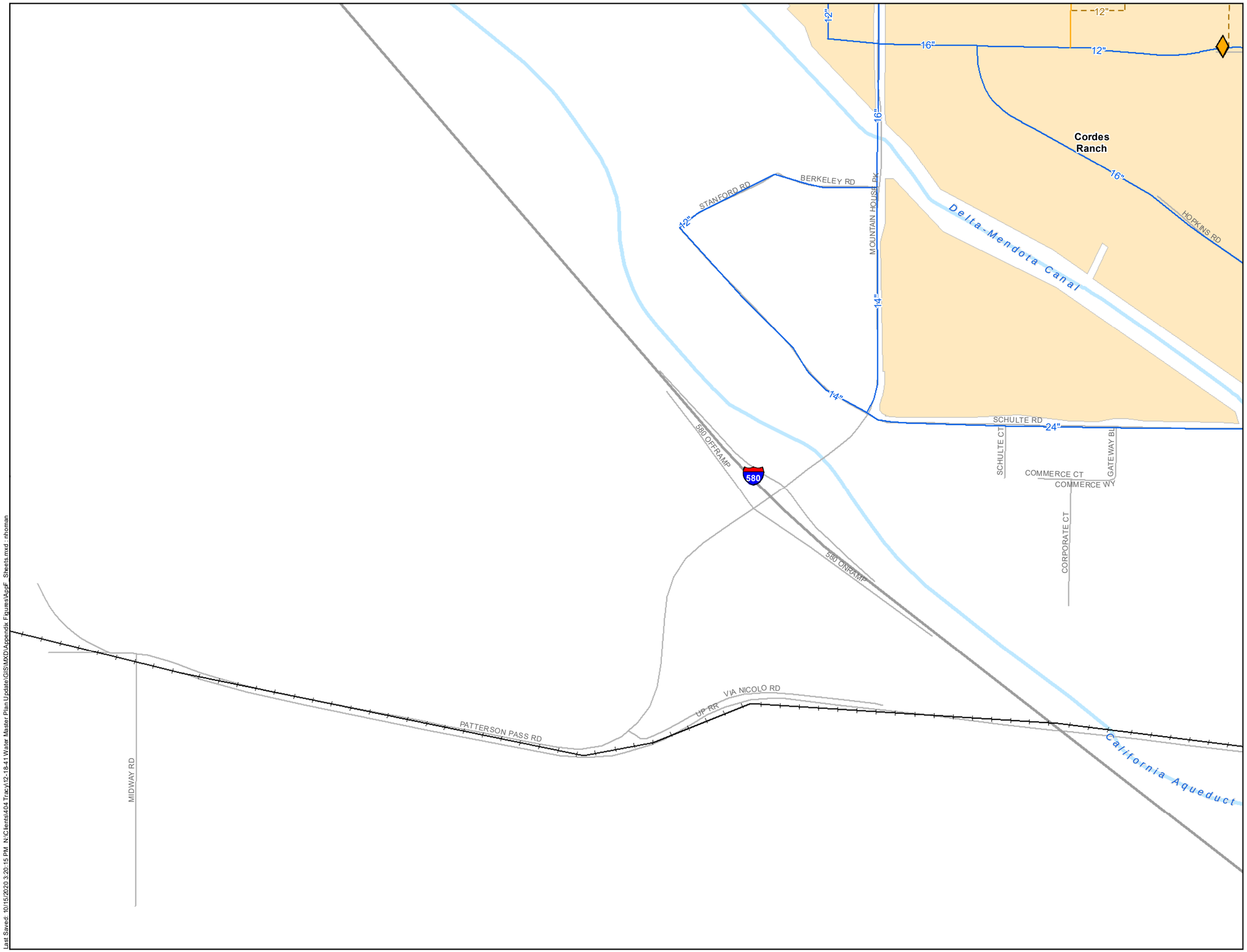
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Figure F-B4

City of Tracy
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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

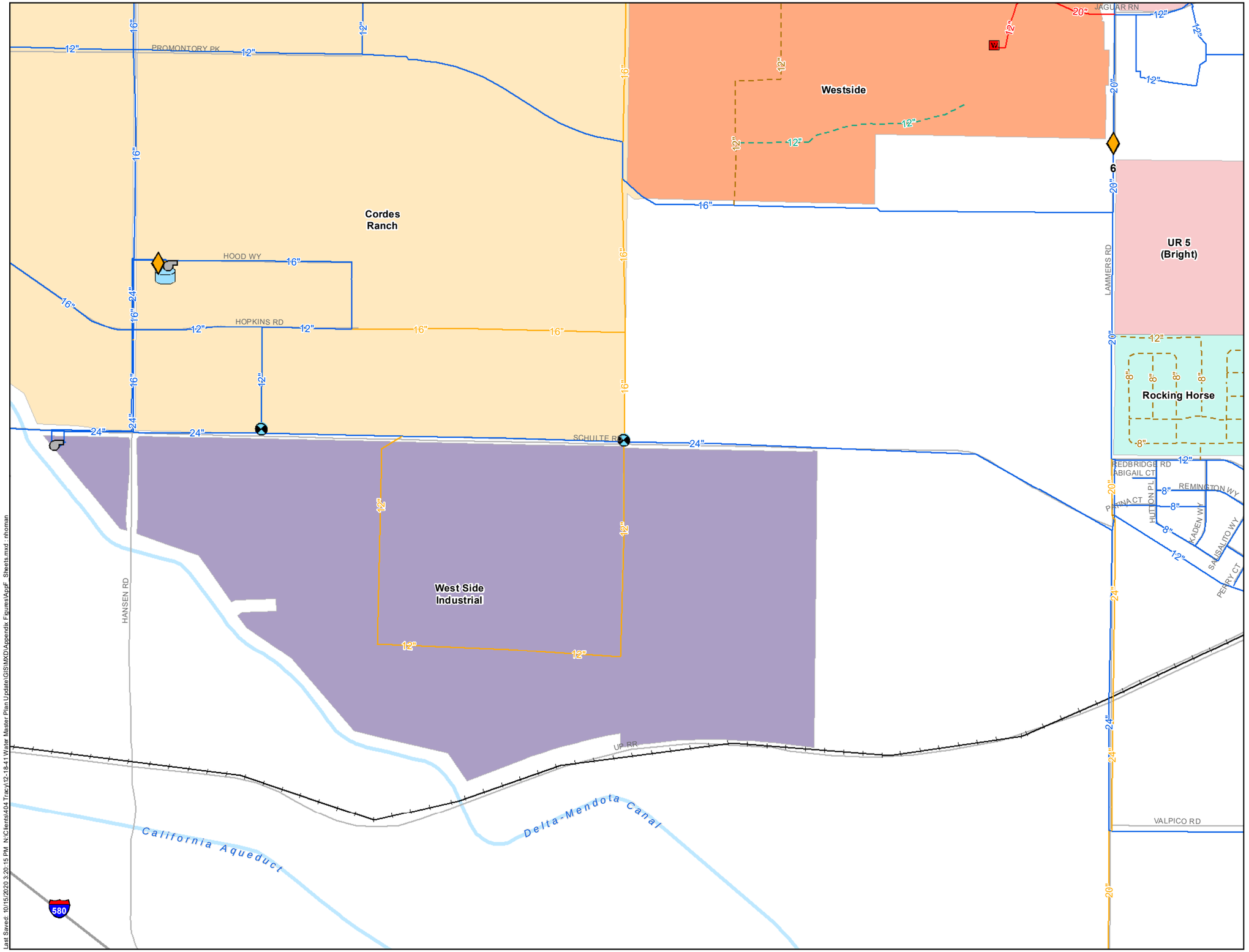
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Figure F-C1

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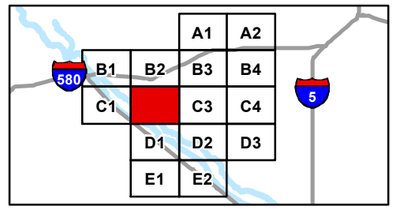
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Scale in Feet



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-C2

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Water System Master Plan Update

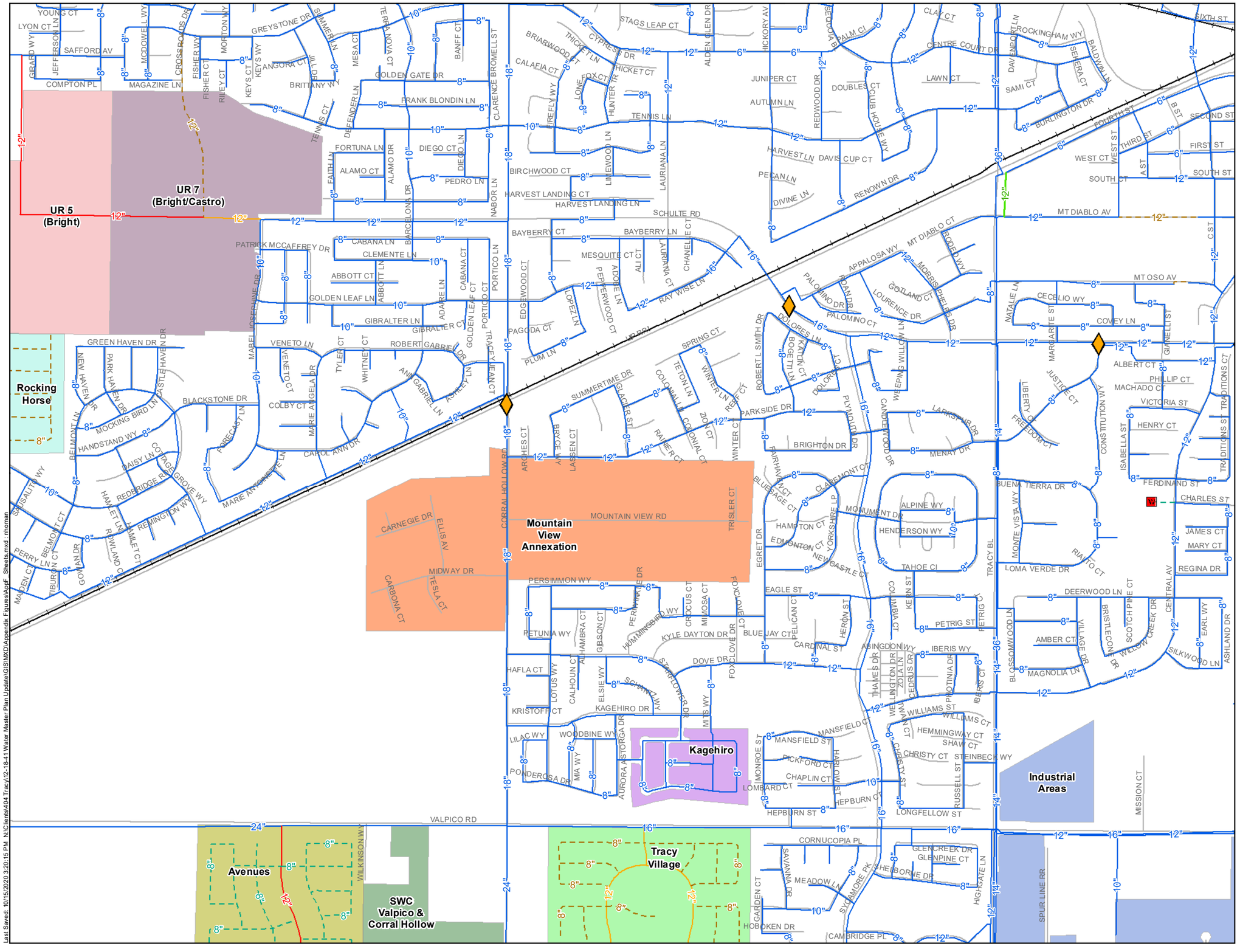
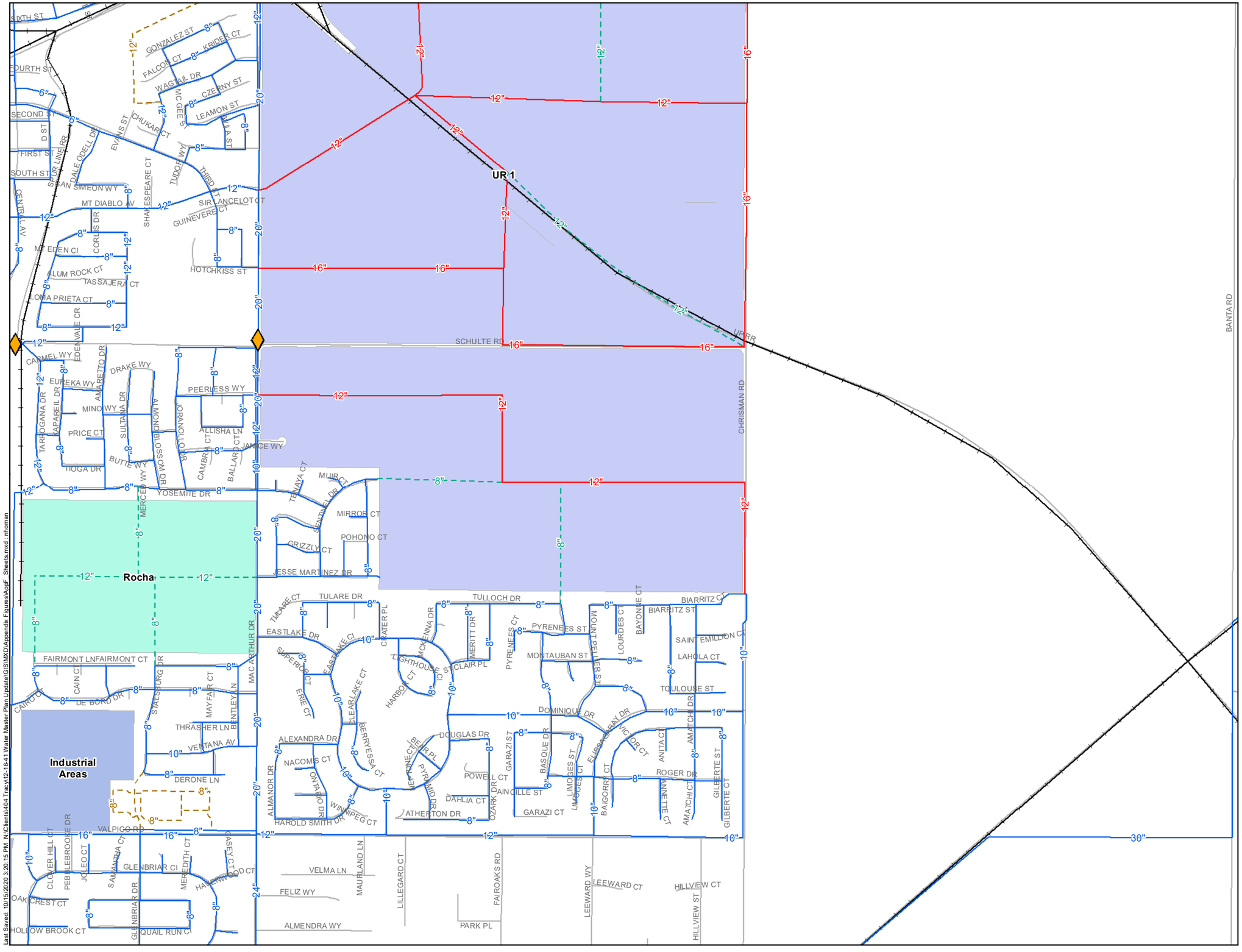


Figure F-C3

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

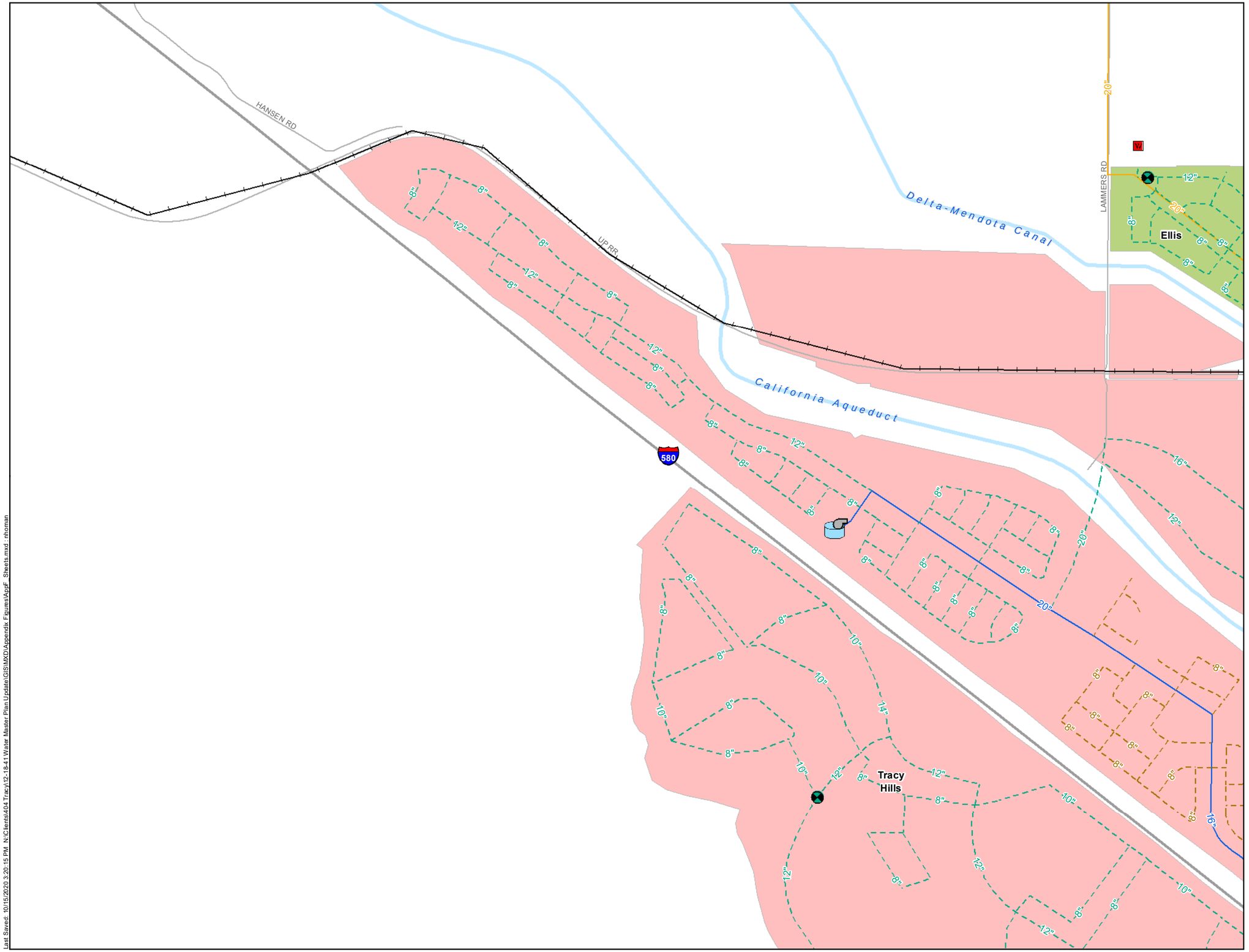
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Figure F-C4

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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

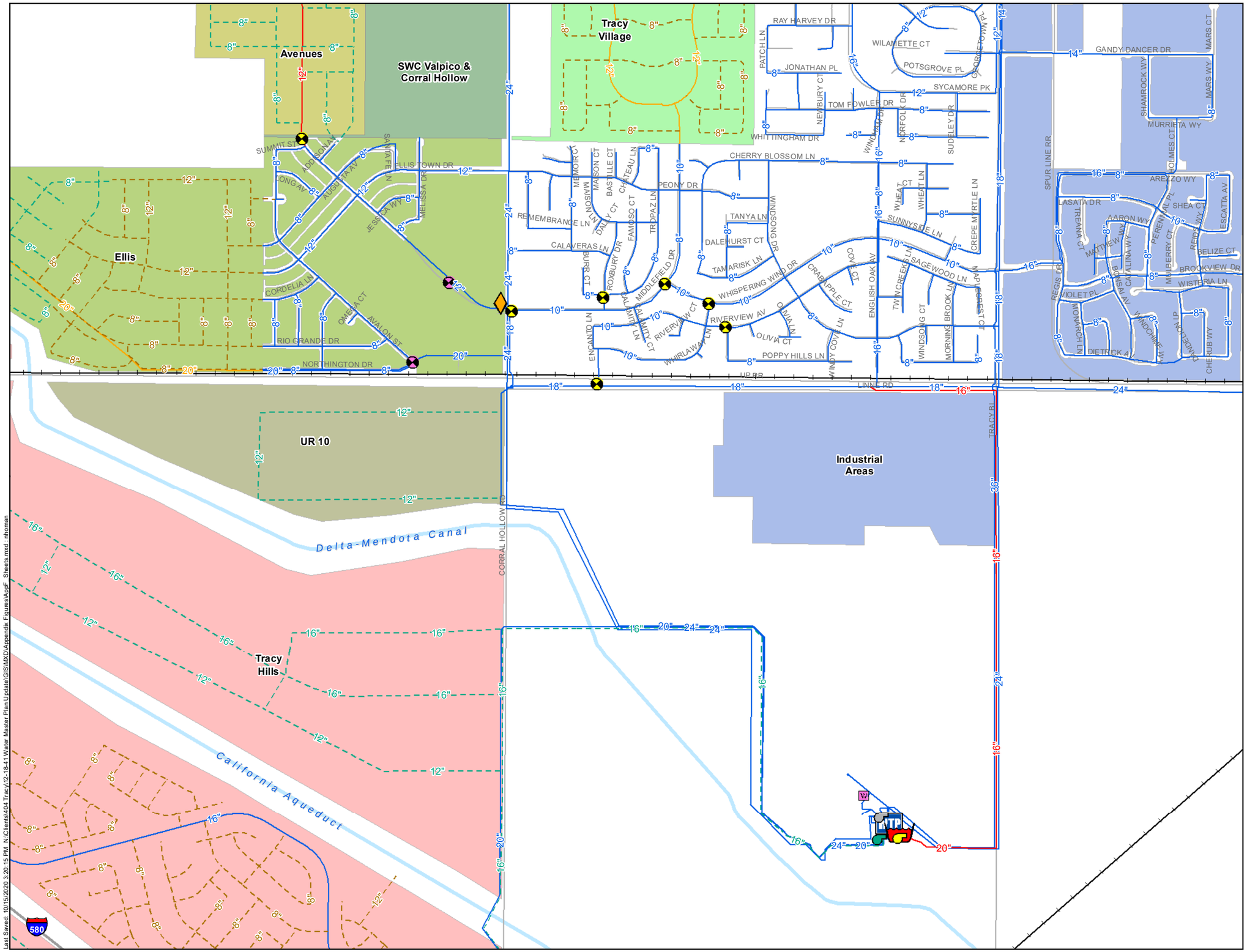
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Figure F-D1

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0 500 1,000

Scale in Feet

		A1	A2
B1	B2	B3	B4
C1	C2	C3	C4
	D1		D3
	E1	E2	

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-D2

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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
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- Existing System Pipeline
- Proposed Existing System Pipeline CIP

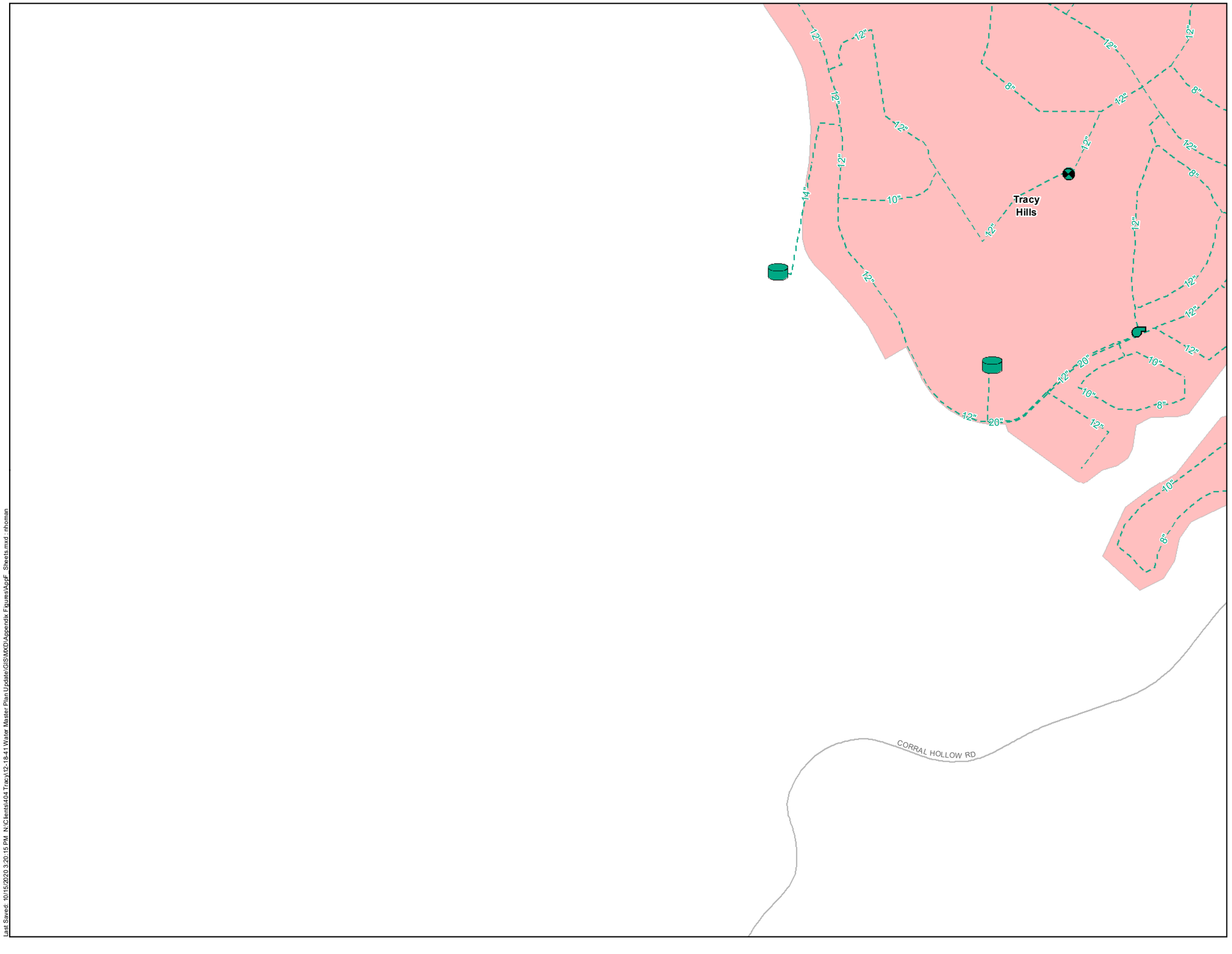
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Figure F-D3

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Scale in Feet

		A1	A2
B1	B2	B3	B4
C1	C2	C3	C4
	D1	D2	D3
		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

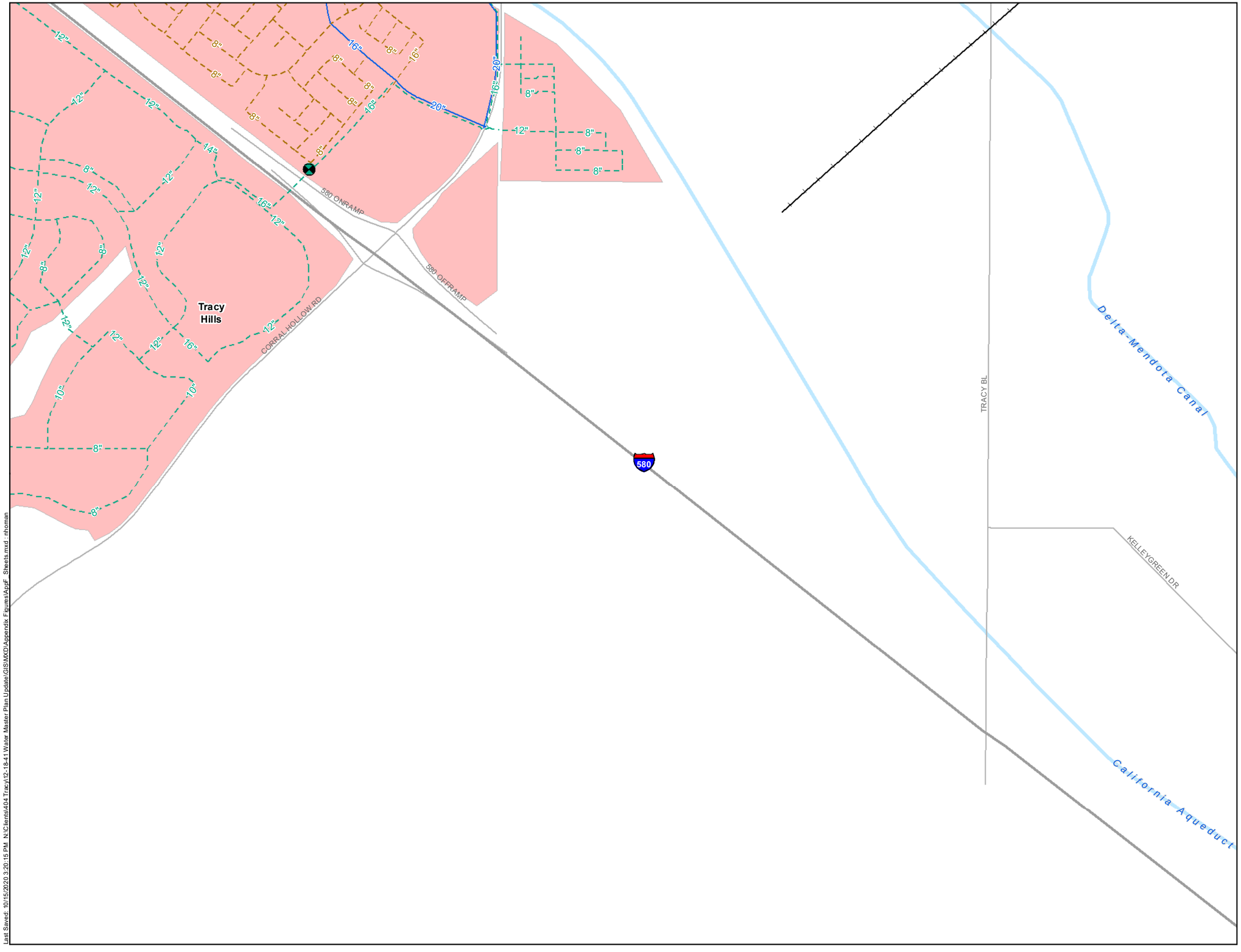
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Figure F-E1

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

TRACY

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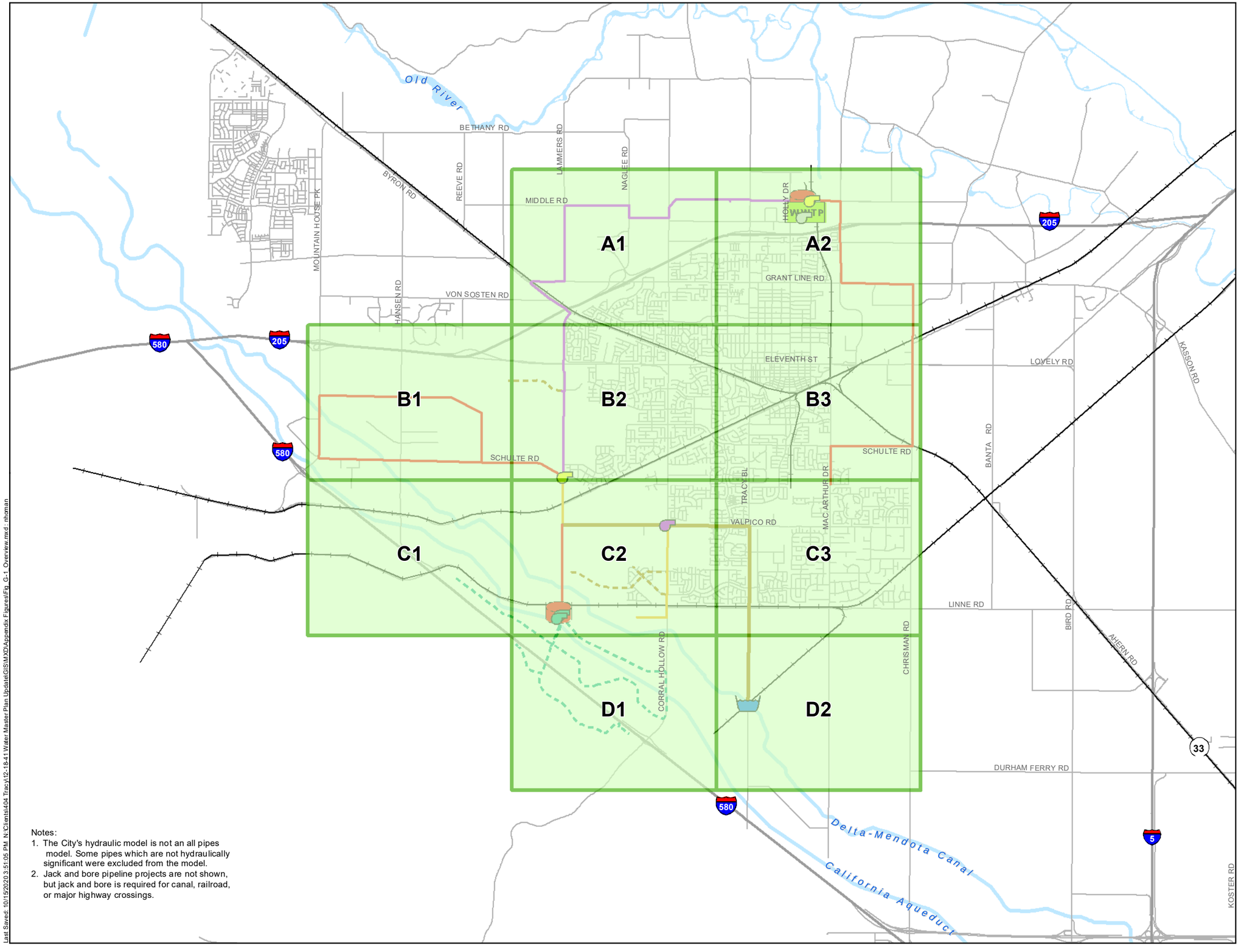
Figure F-E2

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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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

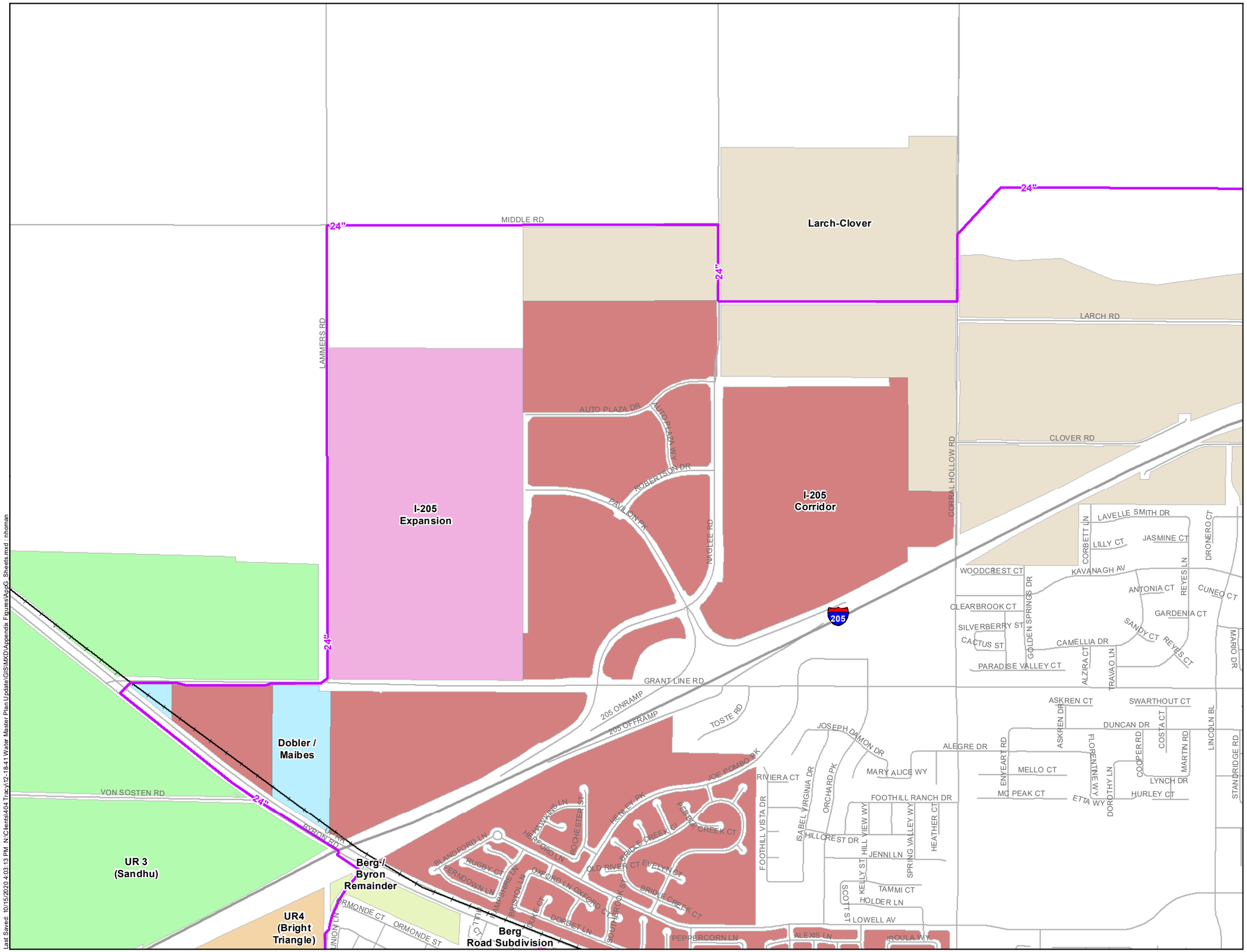
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Figure G-1

Proposed Future Recycled Water System Facility Improvements

City of Tracy
Water System Master Plan Update



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

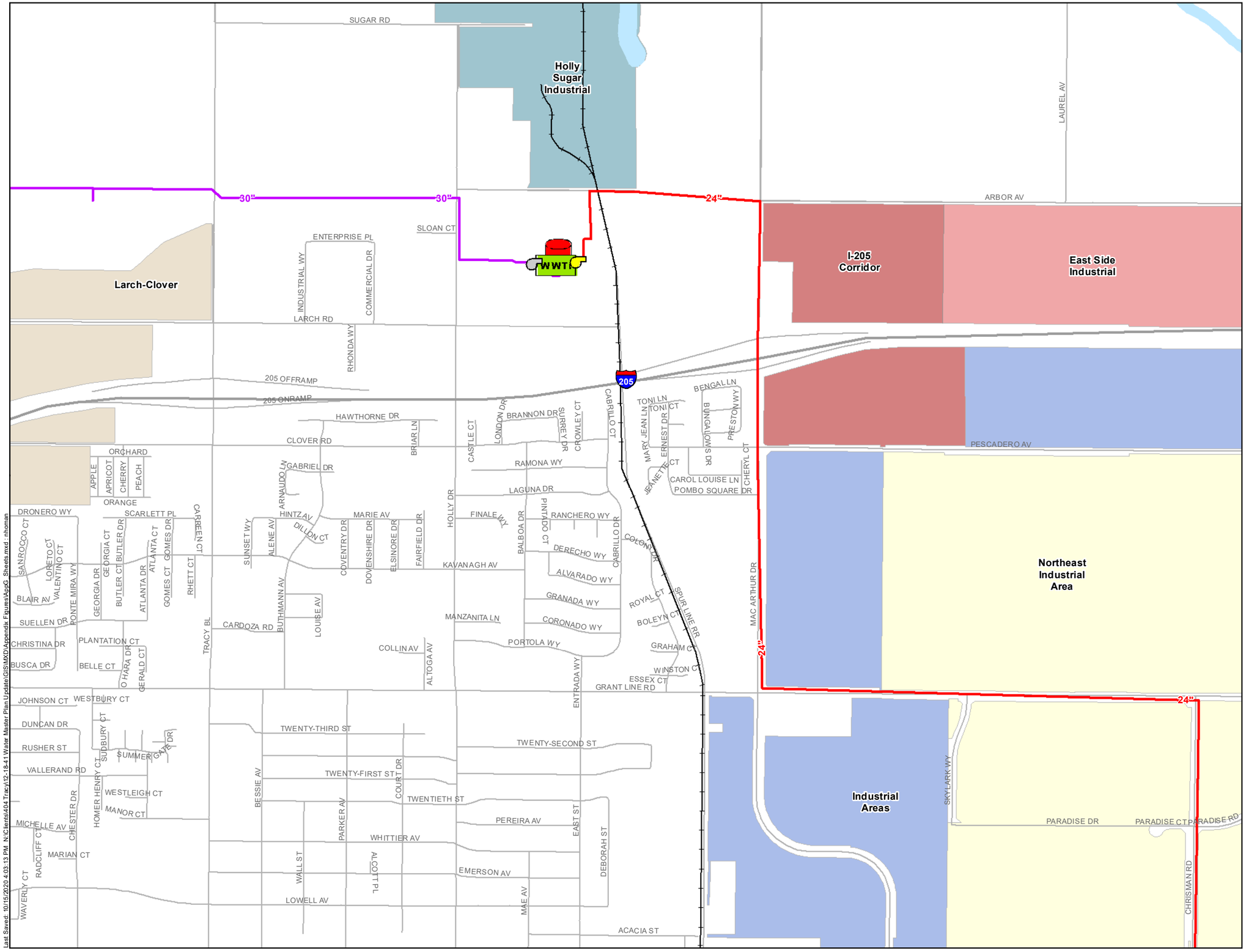
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Figure G-A1

City of Tracy
Water System Master Plan Update

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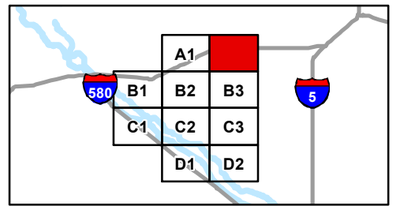


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Scale in Feet



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

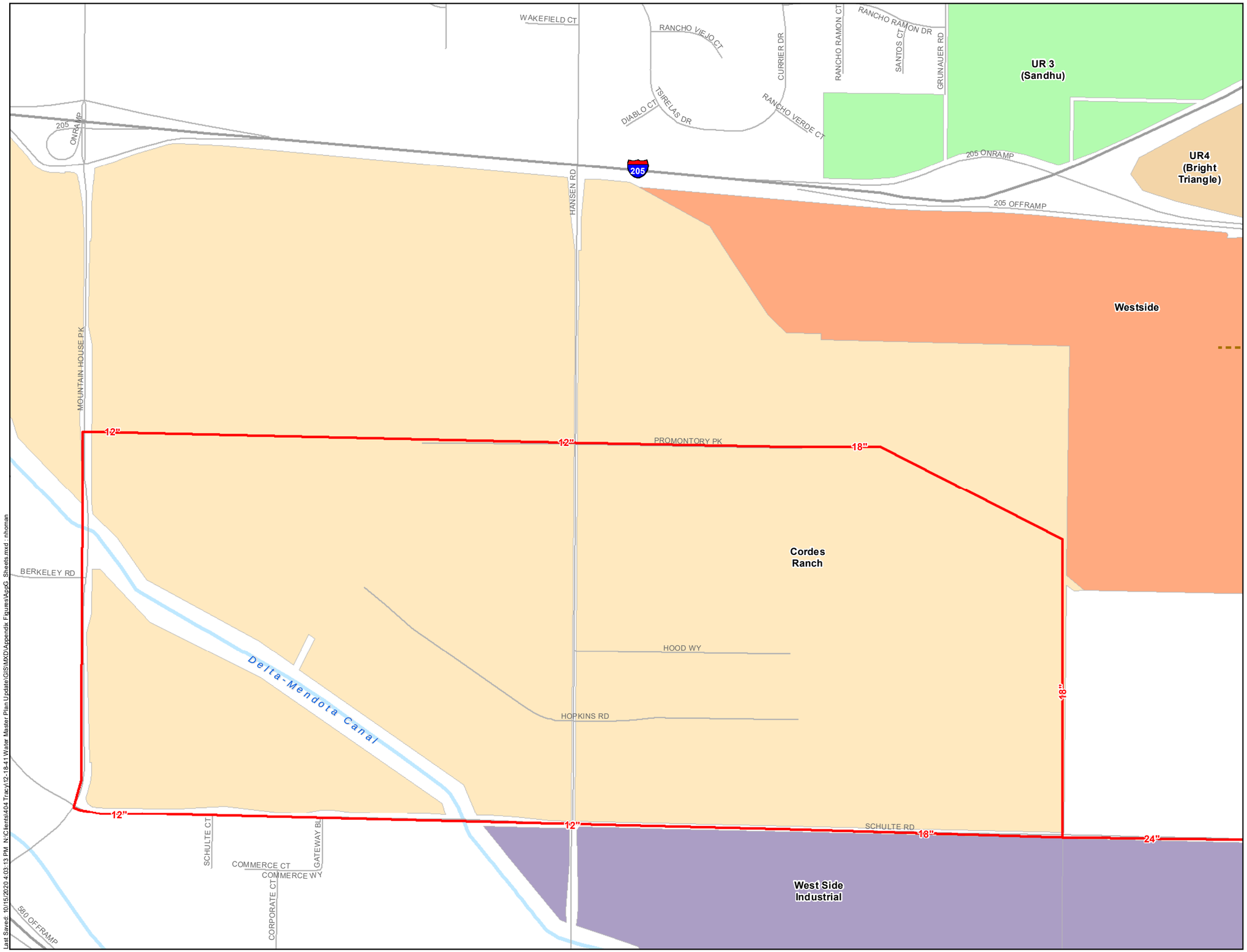
- Existing Booster Pump Station
- WWTP Wastewater Treatment Plant
- Existing System Pipeline

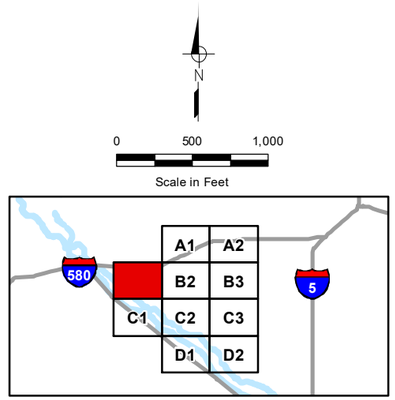
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Figure G-A2

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

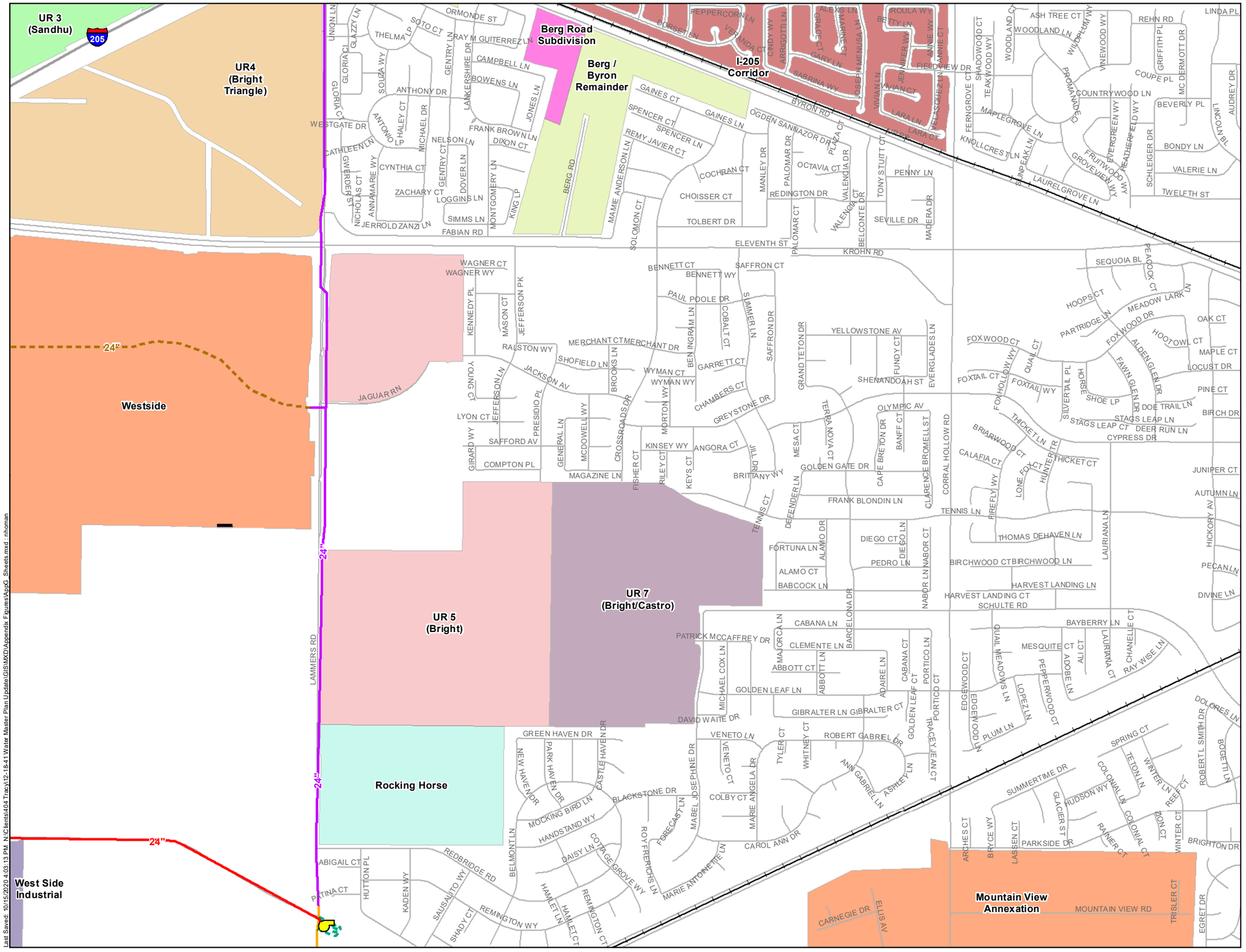
- Existing Booster Pump Station
- WWTP Wastewater Treatment Plant
- Existing System Pipeline

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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

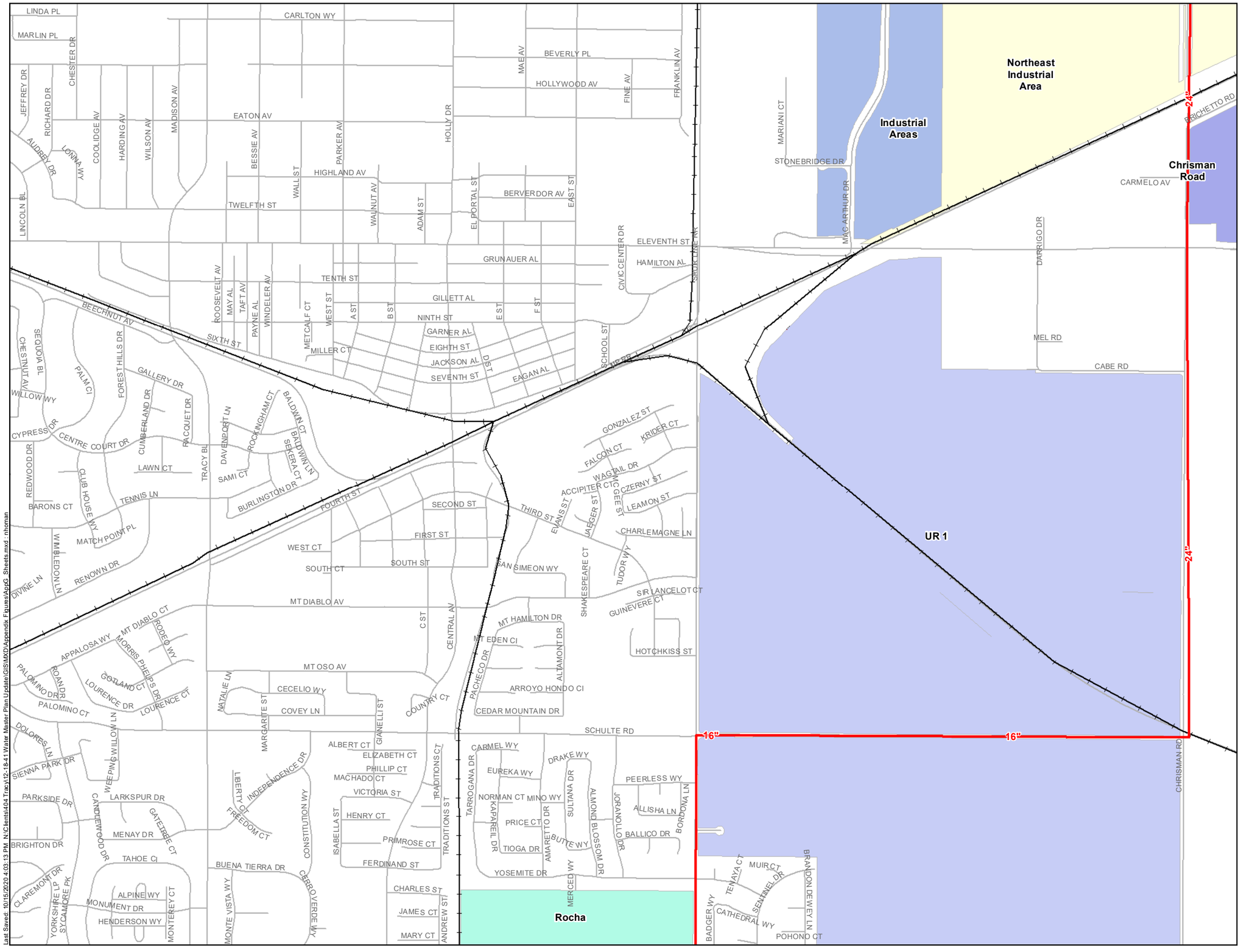
Existing System Facilities

- Existing Booster Pump Station
- WWTP Wastewater Treatment Plant
- Existing System Pipeline

Figure G-B2

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

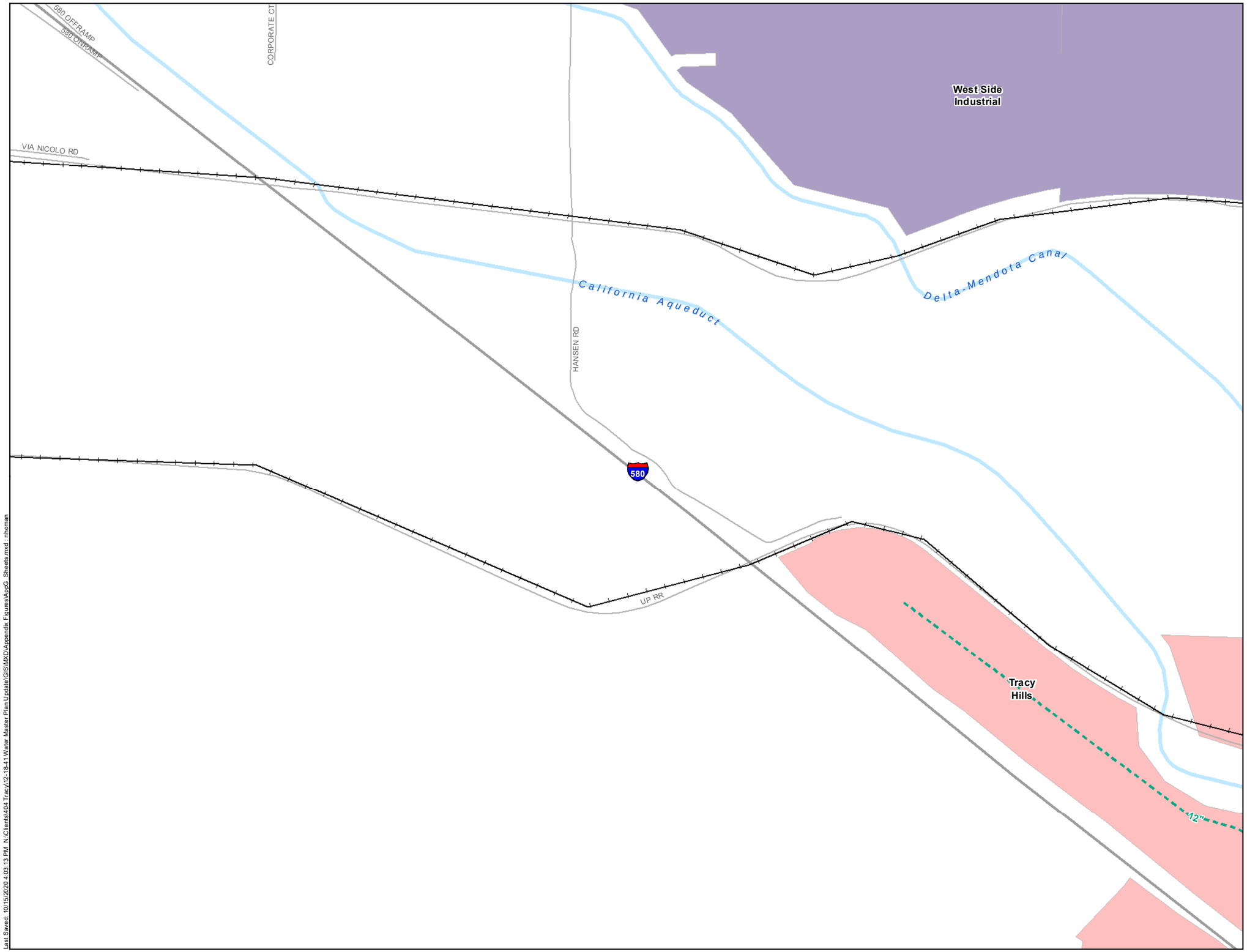
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Figure G-B3

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

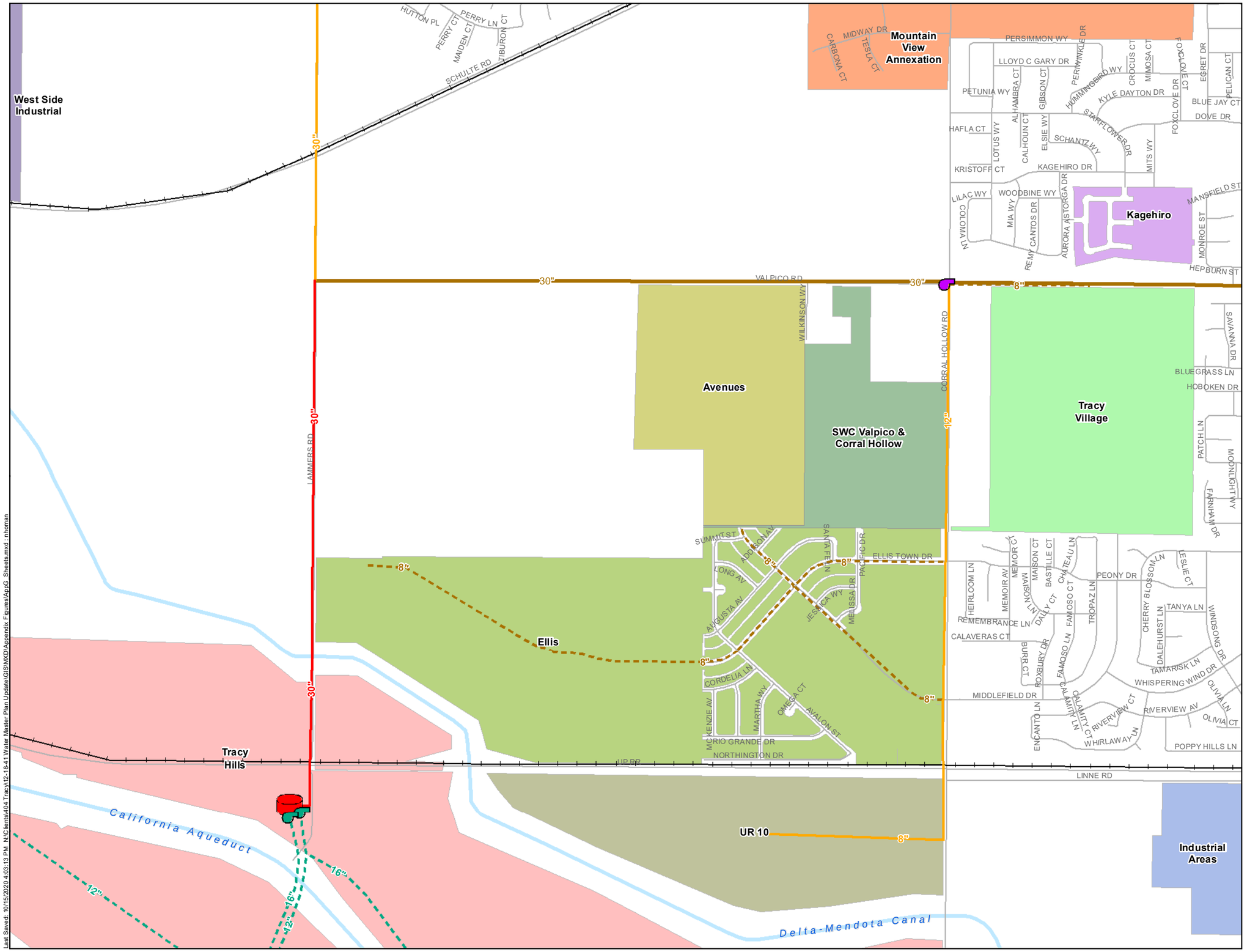
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Figure G-C1

City of Tracy
Water System Master Plan Update

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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

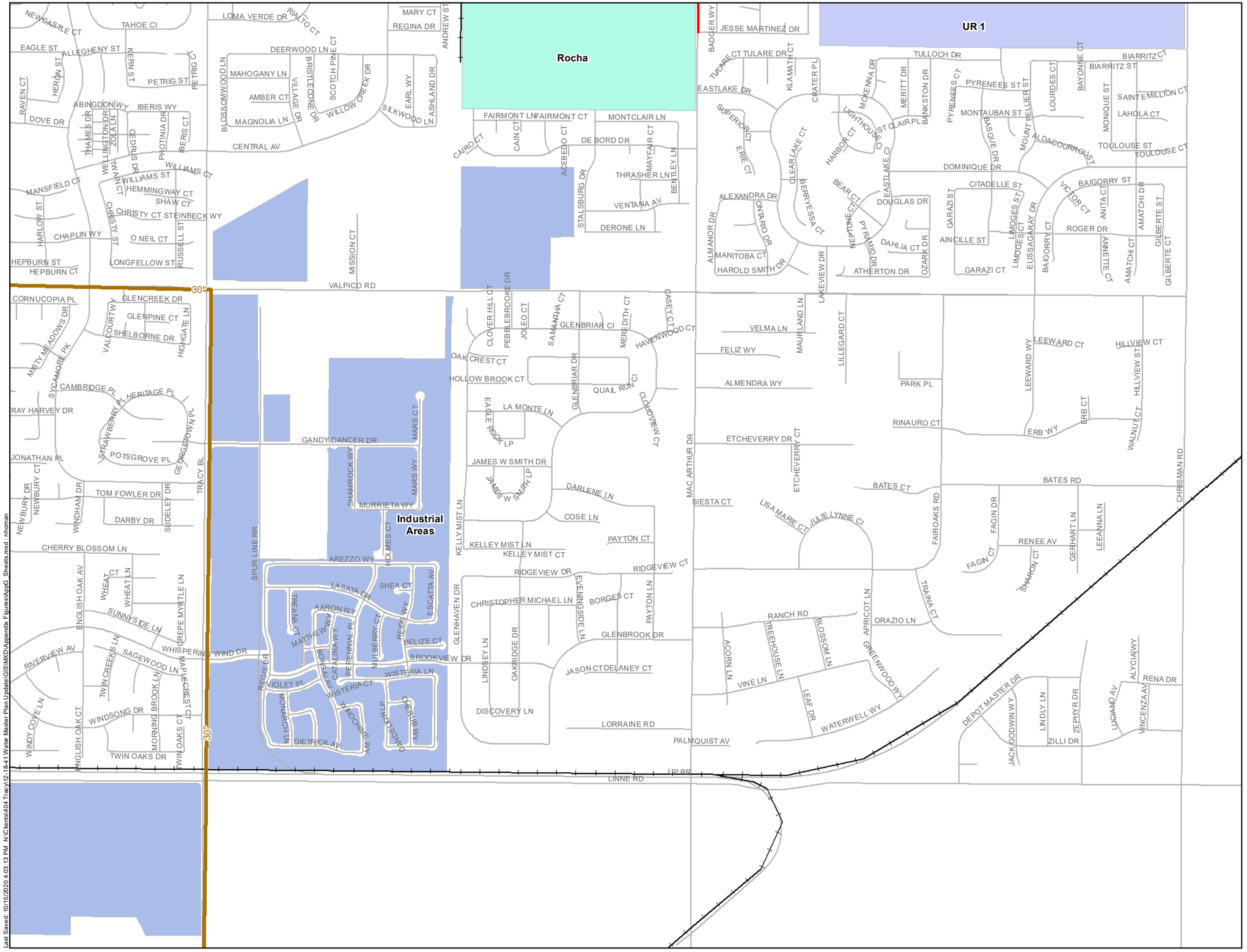
Existing System Facilities

- Existing Booster Pump Station
- WWTP Wastewater Treatment Plant
- Existing System Pipeline

Figure G-C2

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

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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

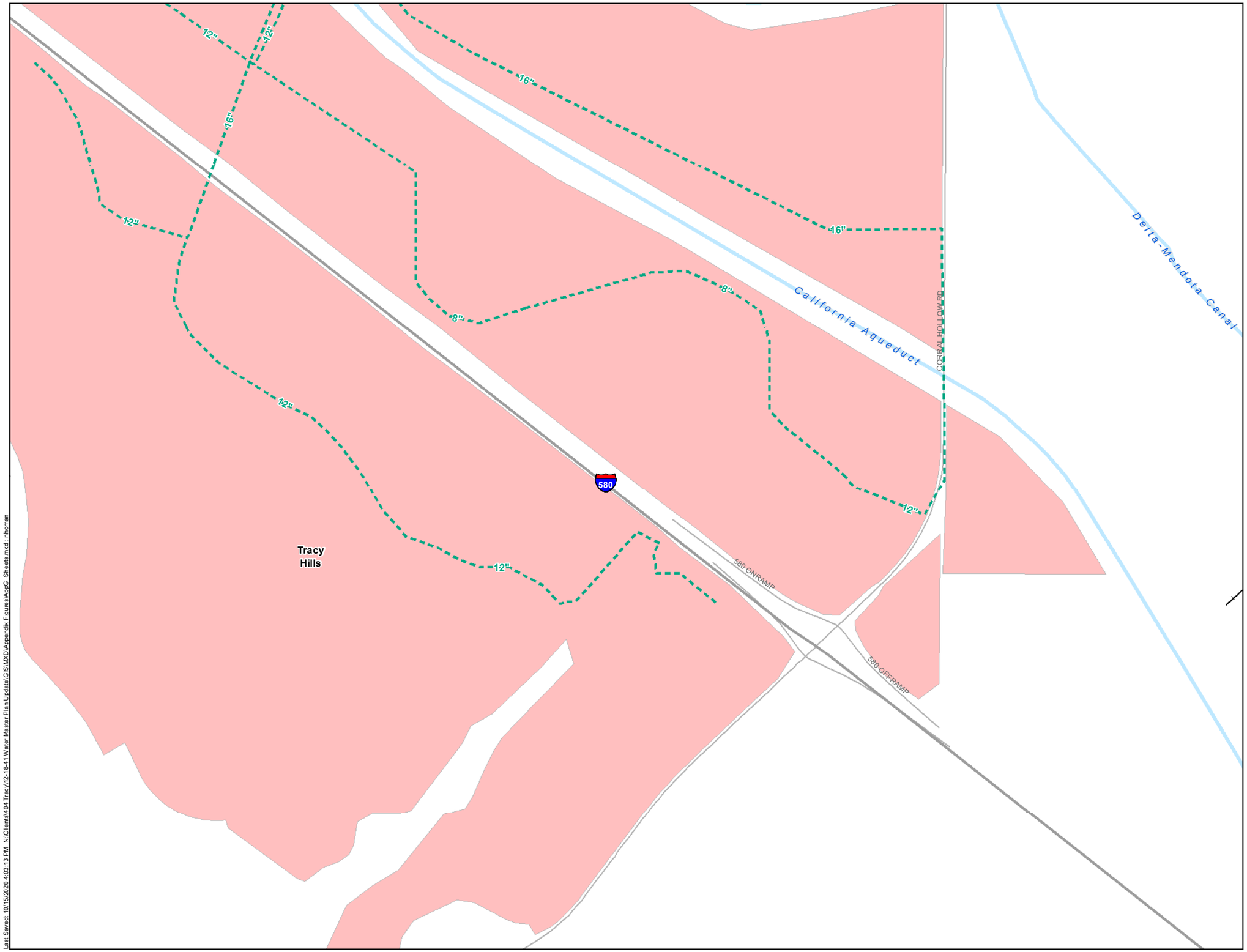
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Figure G-C3

City of Tracy
Water System Master Plan Update

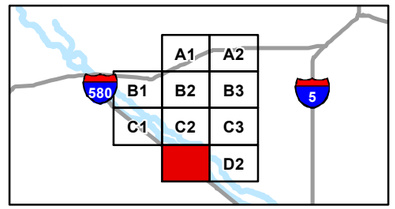
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Scale in Feet



Symbology

Proposed Buildout Program Facilities

- Buildout Booster Pump Station
- Buildout Storage Tank
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Proposed Buildout Non-Program (NP) Facilities

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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

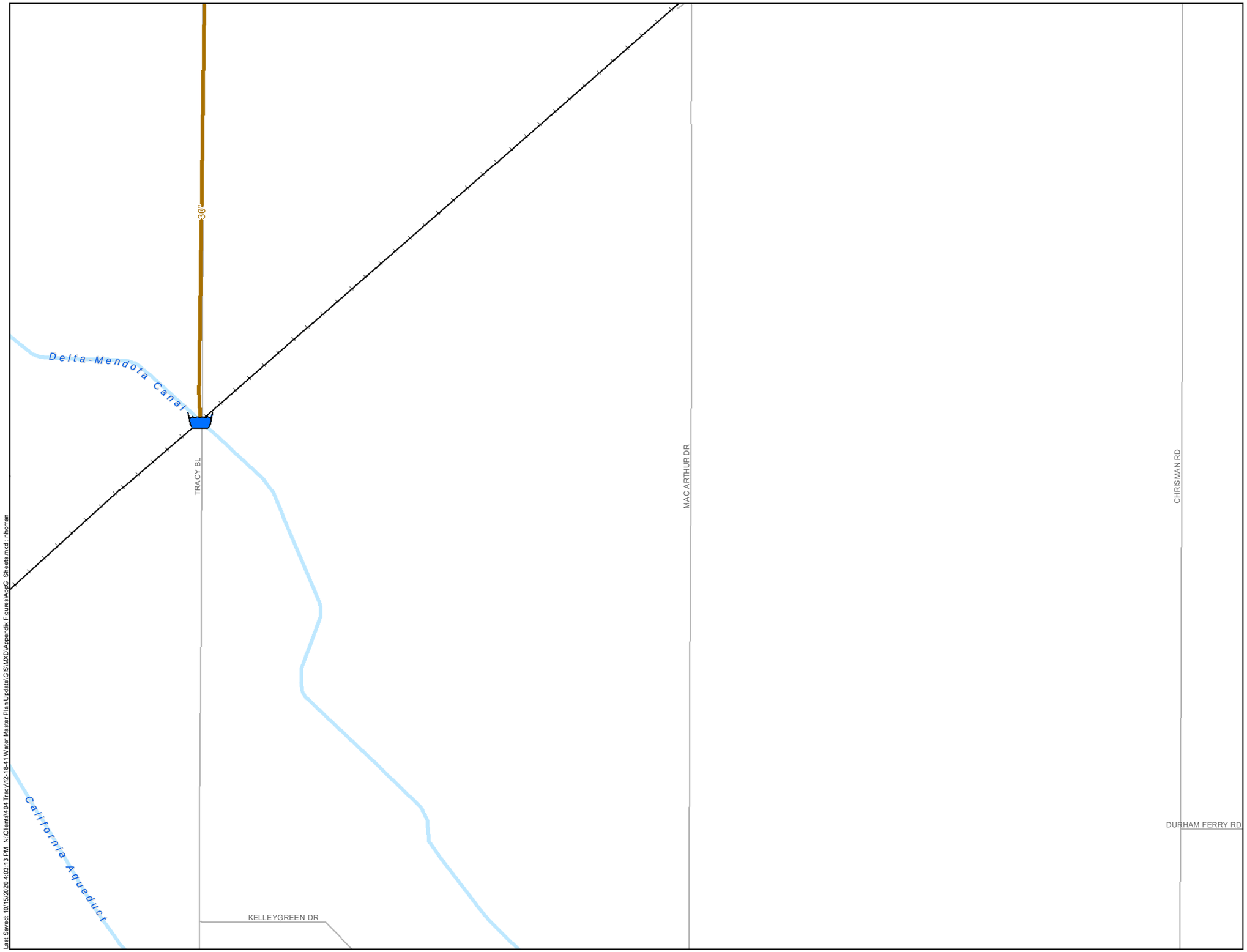
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Figure G-D1

City of Tracy
Water System Master Plan Update

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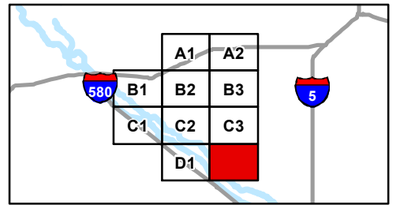


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Scale in Feet



Symbology

Proposed Buildout Program Facilities

- Buildout Booster Pump Station
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Proposed Buildout Non-Program (NP) Facilities

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- 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

TRACY

WEST YOST ASSOCIATES

Figure G-D2

City of Tracy
Water System Master Plan Update



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ATTACHMENT B

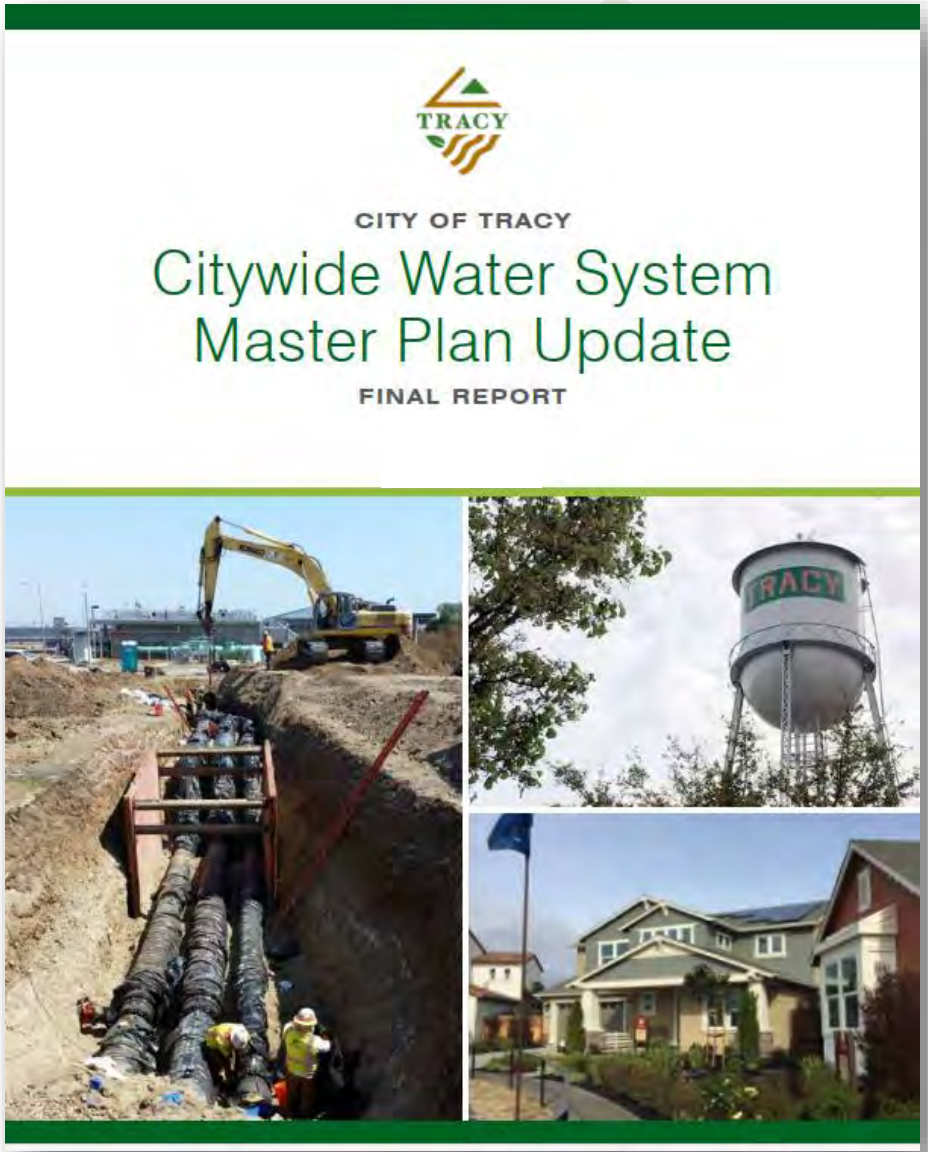
Citywide Water System Master Plan Update

Presentation to City Council

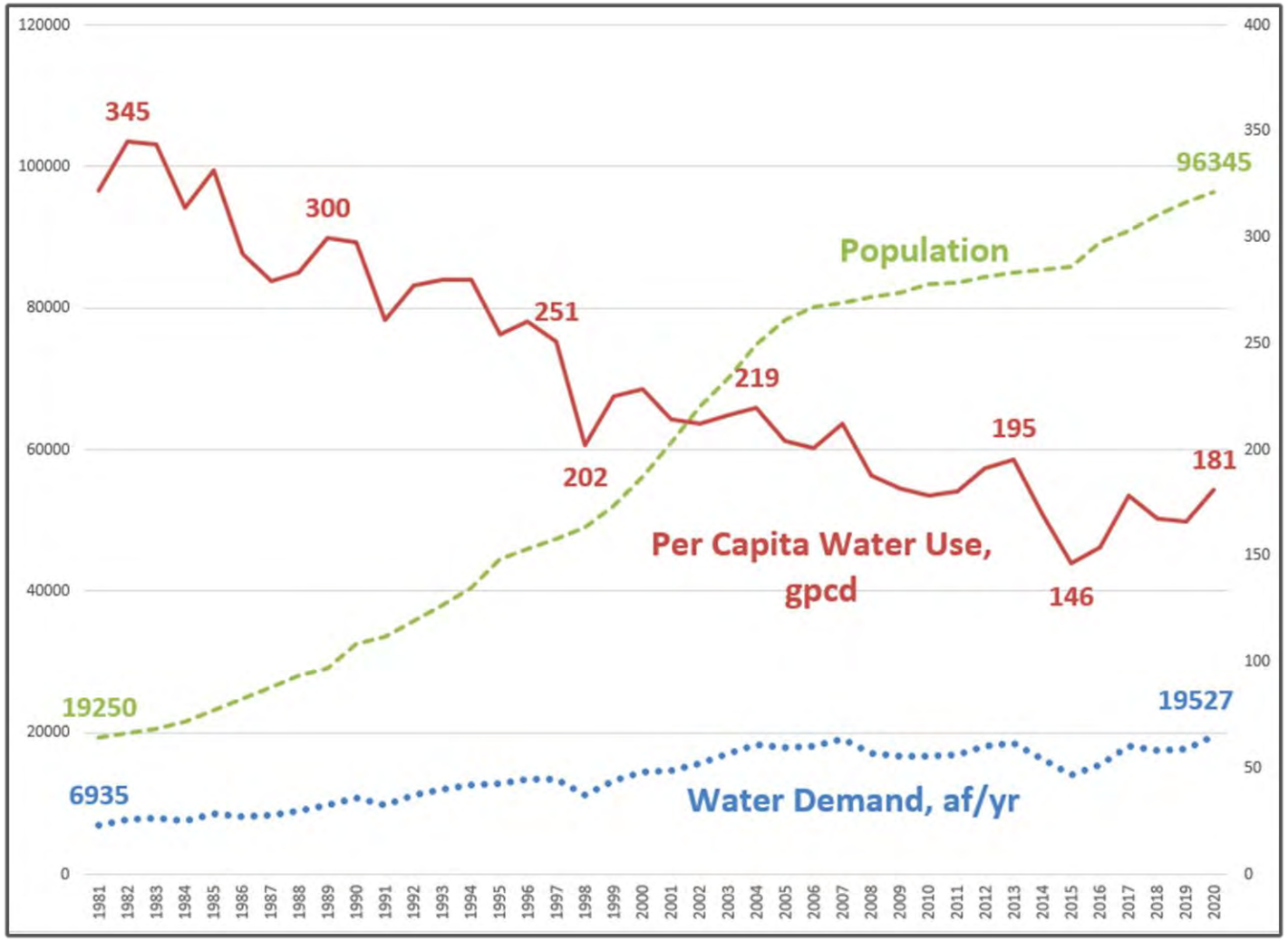
September 5, 2023

Purpose of Water Master Plan Update

- Previous Water Master Plan was completed in 2012
- Since then…
  - The City has incorporated several General Plan amendments that identify existing and new areas of development within and around the existing City limits
  - The City has experienced significant residential and commercial development (Tracy Hills, Ellis, International Park of Commerce)



Historical Water Use Trends



2020 Population & Water Use

- Population = 96,345
- Water Demand = 19,527 af/yr
- Per Capita Water Use = 181 gpcd

Since 1981…

- Population **+500%**
- Water Demand **+282%**
- Per Capita Water Use **-44%**

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Think Inside the Triangle™

City Water Supply Sources

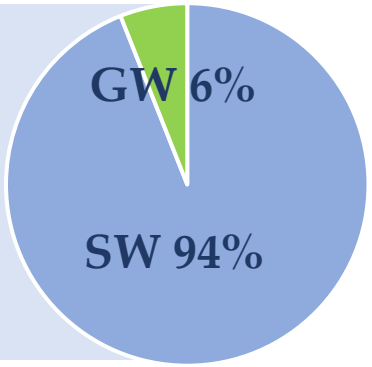
- **Treated Surface Water Supplies**
  - **Central Valley Project (CVP) Surface Water**
    - Treated at City's John Jones Water Treatment Plant
    - Subject to cutbacks in dry years
  - **BBID Pre-1914 Surface Water**
    - Treated at City's John Jones Water Treatment Plant
    - For use to meet demands in Tracy Hills
    - Historically high reliability
  - **SSJID Surface Water**
    - Treated at SSJID's Water Treatment Plant
    - City began taking deliveries in 2005
    - Historically high reliability, but subject to cutbacks in dry years

- **Groundwater Supplies**
  - Pumped from City's groundwater wells
  - Groundwater use dropped significantly when SSJID supplies became available
- **Recycled Water (coming soon)**
  - Treated at City's Wastewater Treatment Plant
  - To be used for landscape irrigation and exchange program

2022 Water Use

Treated Surface Water (17,739 af)

Groundwater (1,146 af)



Think Inside the Triangle™

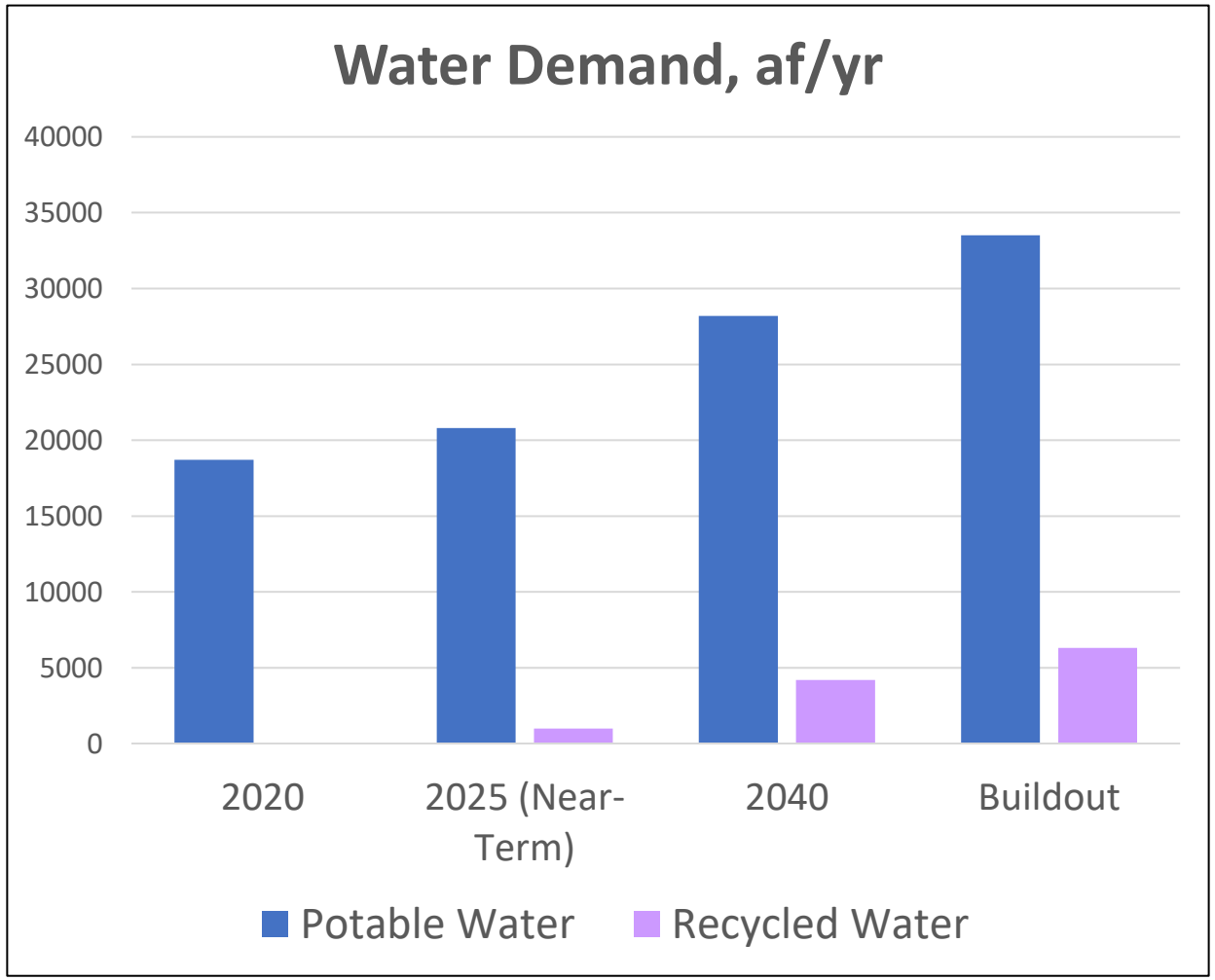
Changes since the 2012 Water Master Plan: **Supply & Demand**

- Reduction in Per Capita Water Use since the 2012-2016 drought due to more efficient water use by the City's water customers
- Reduction in Maximum Day and Peak Hour water demands from improved water use efficiency
- Reduction in water supply reliability (Central Valley Project and SSJID supplies), primarily in dry years

Think Inside the Triangle™

Projected Water Demands

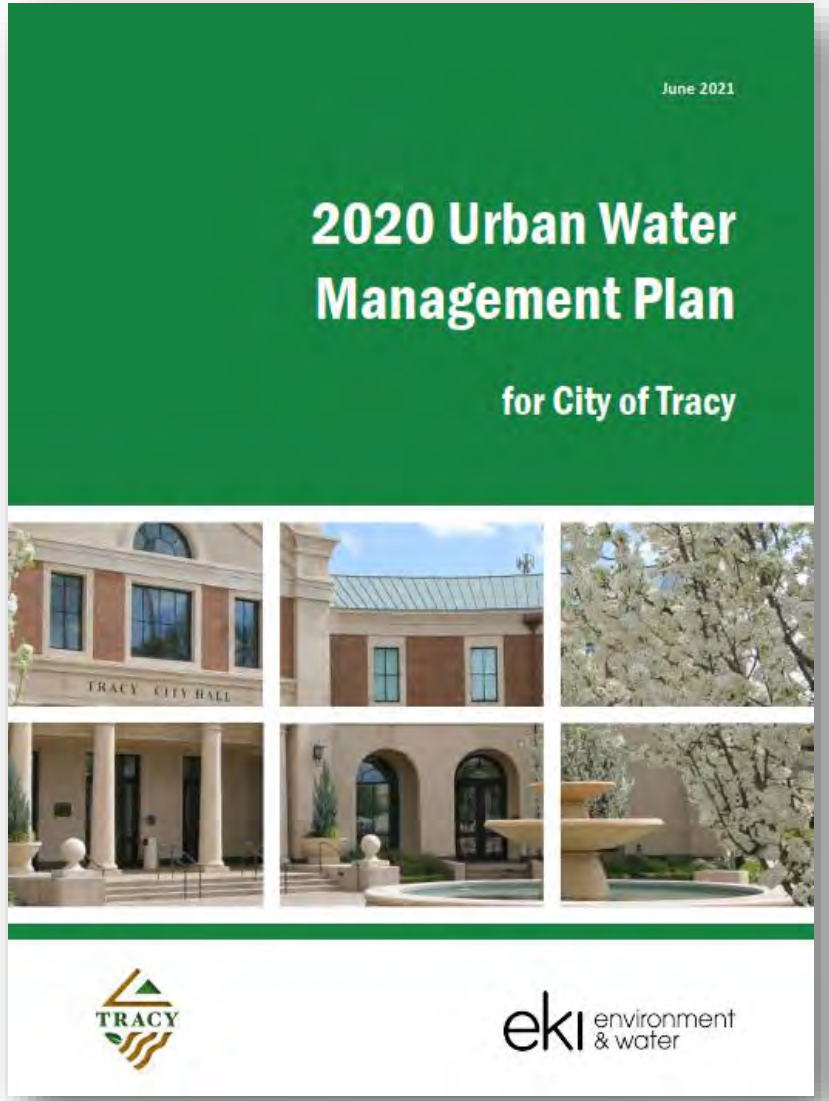
- Buildout Demand
  - 2012 Water Master Plan
    - Potable: 36,200 af/yr
    - Recycled: 7,500 af/yr
  - 2023 Water Master Plan Update
    - Potable: 33,500 af/yr
    - Recycled: 6,300 af/yr



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Water Supply Reliability

- Water supply assumptions consistent with the City's 2020 Urban Water Management Plan (UWMP) adopted in June 2021
- 2020 UWMP indicates potential surface water supply curtailments (CVP and SSJID) in dry years, resulting in potential supply shortages
- Continuing changes in water supply conditions may result in additional curtailments in dry years



Strategies and Actions to Address Potential Water Supply Shortages

- Recycled Water for non-potable use (primarily landscape irrigation)
- Recycled Water Exchange Program
- Aquifer Storage and Recovery (ASR) Program Expansion
- John Jones Water Treatment Plant Expansion, including a new admin/maintenance building to accommodate future staffing needs
- Participation in Los Vaqueros Reservoir Expansion Project and B.F. Sisk Dam Raise & Reservoir Expansion Project
- Implementation of Water Shortage Contingency Plan as needed to reduce water demands in dry years

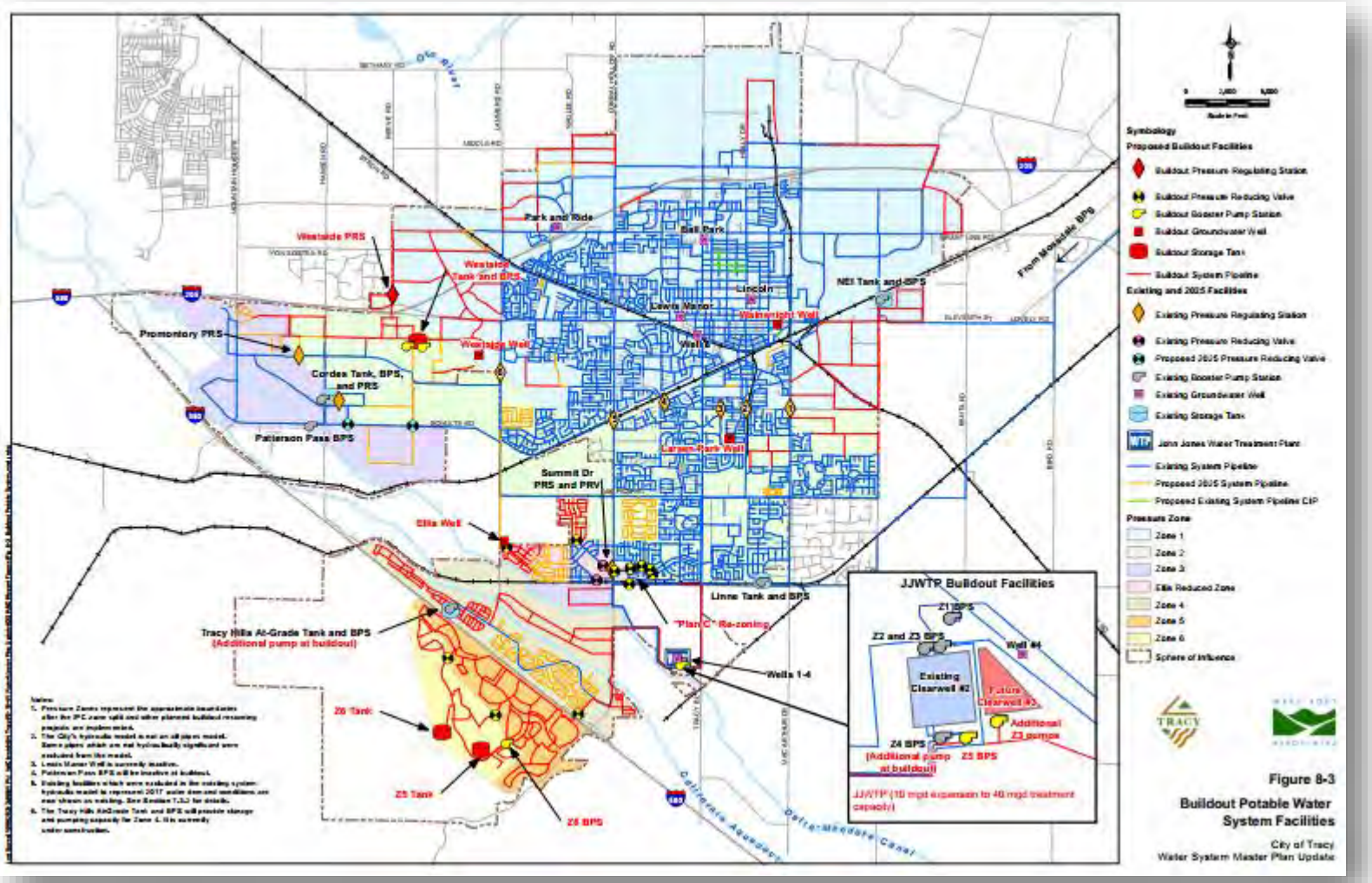
Changes since the 2012 Water Master Plan: **New Water System Facilities**

- Cordes Water Storage Tank and Pump Station
- Tracy Hills Zone 4 Pump Station at the City's JJWTP
- Tracy Hills On-site Zone 4 Water Storage Tank and Pump Station
- Recycled Water Pump Station at the City's WWTP and Recycled Water Pipeline on the west side of the City
- Potable Water and Recycled Water distribution pipelines

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Think Inside the Triangle™

Recommended System Improvements: **Potable Water**



- New Storage Tanks
- New ASR Wells
- New Transmission and Distribution Pipelines
- Expansion of John Jones Water Treatment Plant

Think Inside the Triangle™

Changes since the 2012 Water Master Plan: **Recycled Water**

- Expansion of recycled water system to focus on new development areas in the City's west, east and southern areas
- Proposed Recycled Water Exchange Agreement
  - Indirect use of recycled water through an exchange agreement with the USBR
  - One-to-one exchange of tertiary-treated wastewater from the City's WWTP discharged to the Delta Mendota Canal (DMC) for a like amount of water to be diverted from the DMC for treatment at the City's JJWTP for potable use

TRACY

Think Inside the Triangle™

Recommended System Improvements: **Recycled Water**

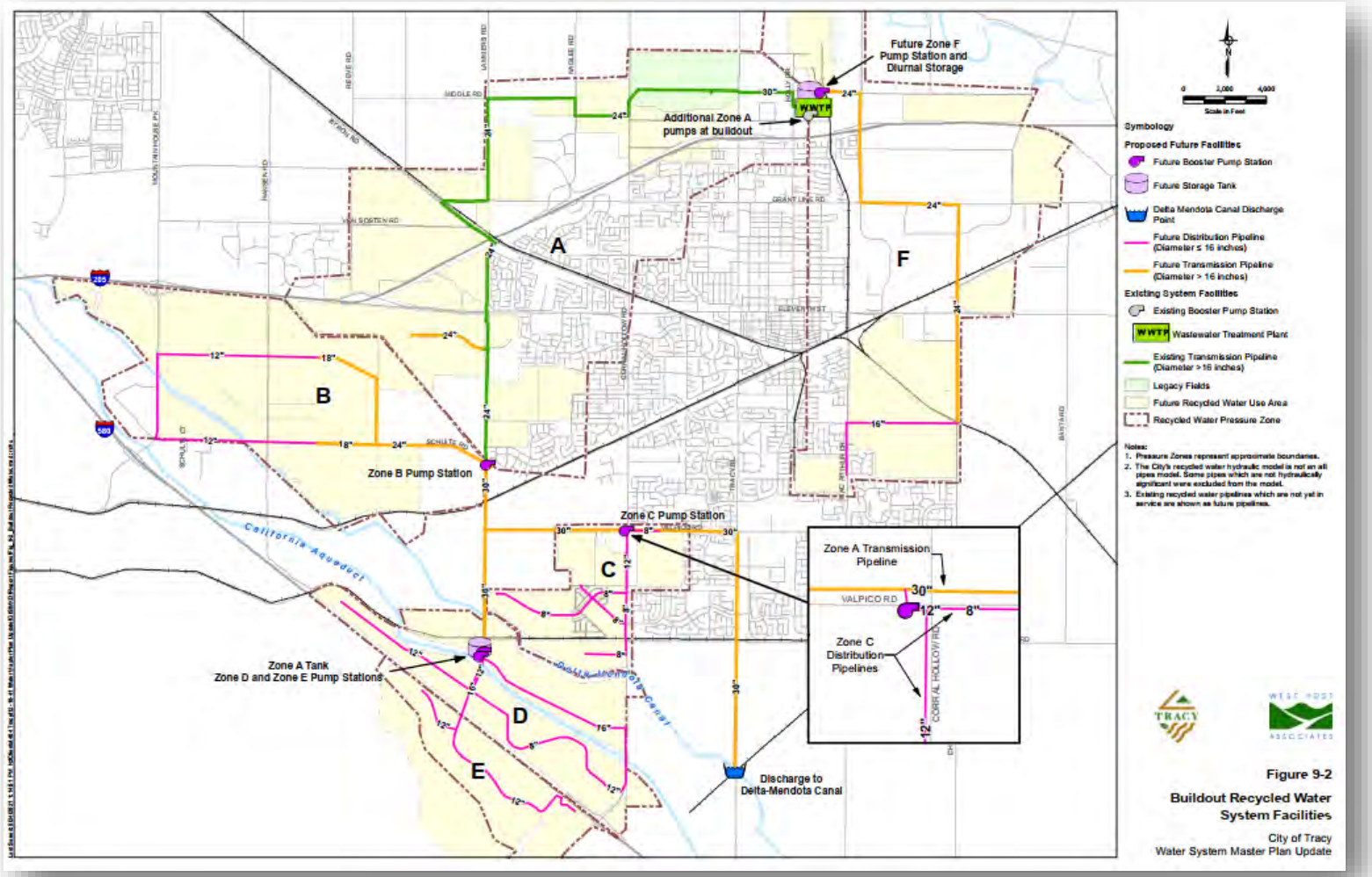
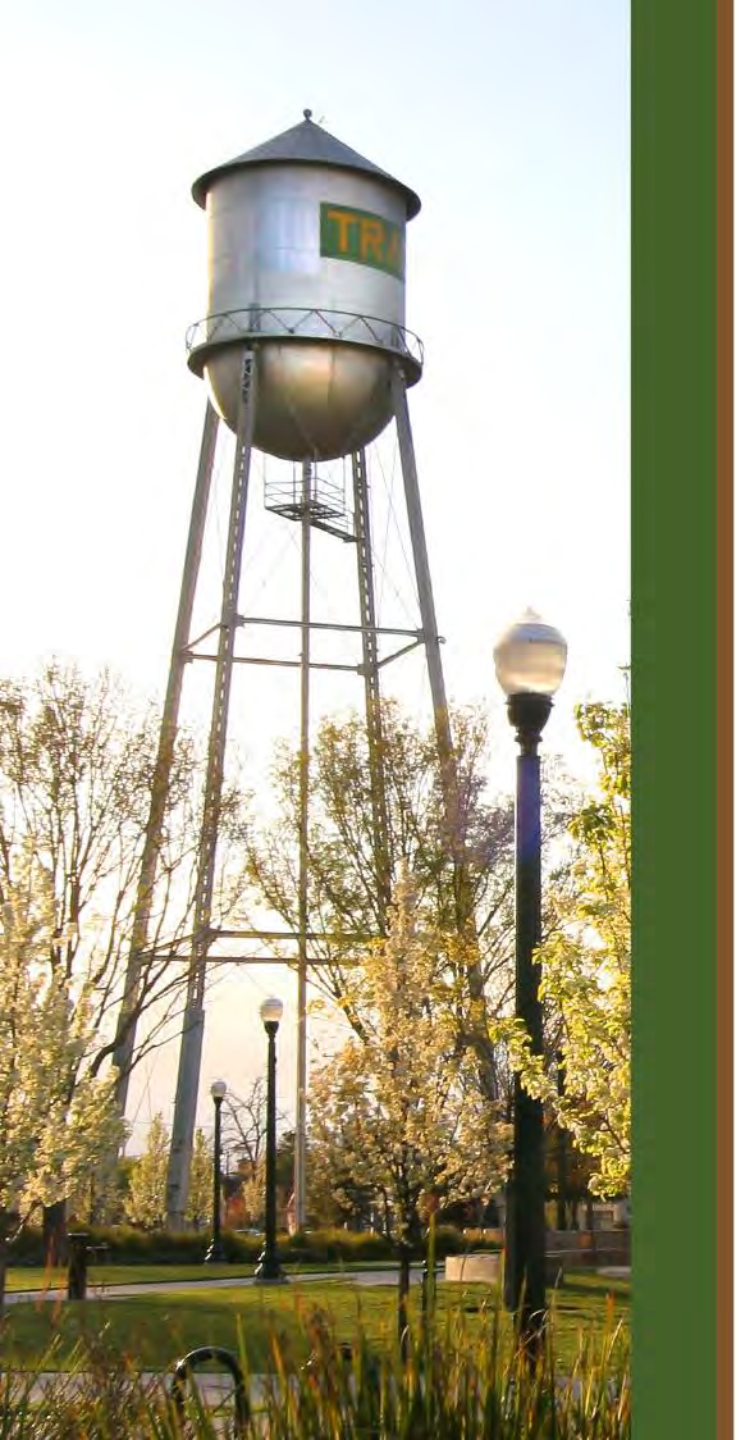


Figure 9-2
Buildout Recycled Water System Facilities
City of Tracy
Water System Master Plan Update

- Additional Pump Stations and Storage Tank
- Additional Transmission and Distribution Pipelines
- Discharge Pipeline to DMC for Exchange Program

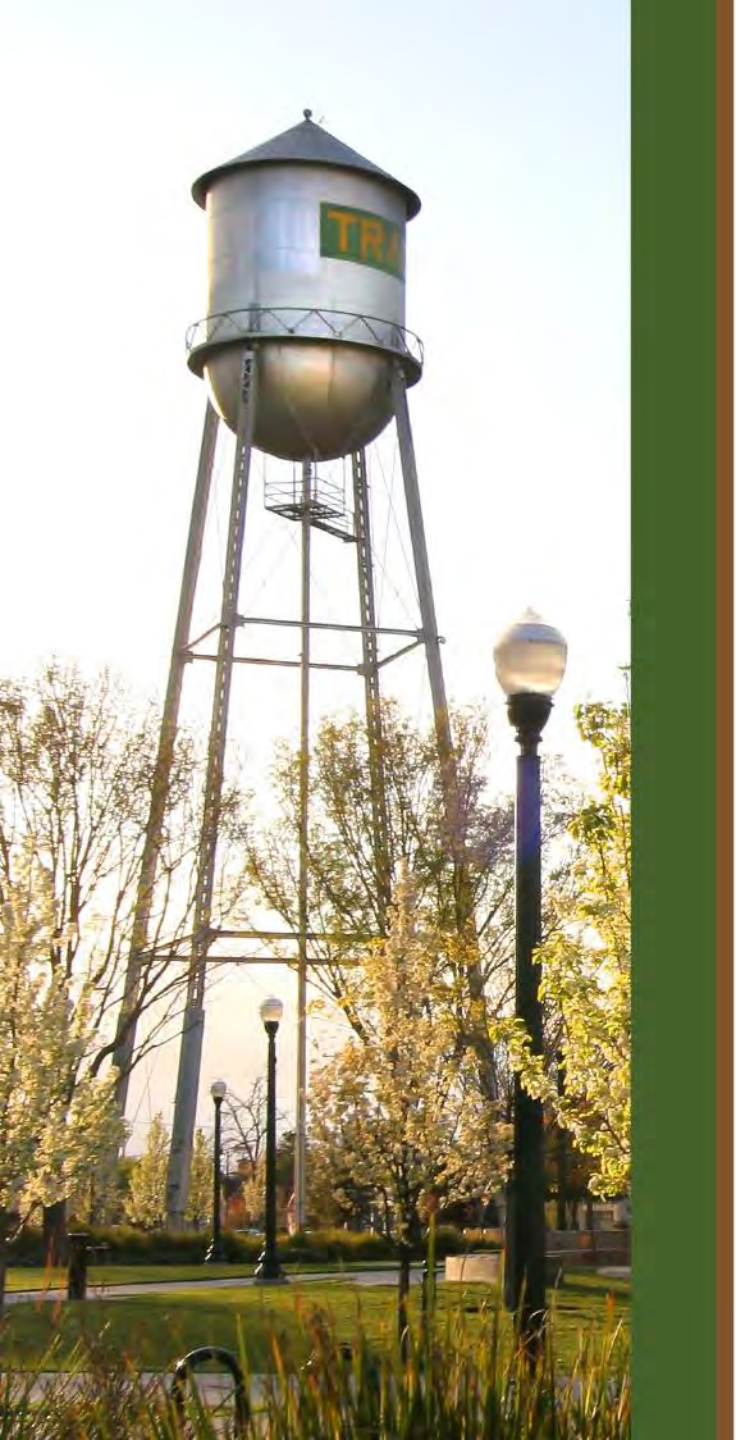


Summary of Water System Recommendations

- Potable Water System
  - Improvements to existing facilities to address existing deficiencies
  - New infrastructure to serve projected new development areas
- Recycled Water System
  - Focus on new infrastructure to provide recycled water for landscape irrigation for projected new development areas
  - New infrastructure for recycled water exchange program

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Summary of Water Supply Recommendations

- Participation in Los Vaqueros Reservoir Expansion Project and B.F. Sisk Dam Raise & Reservoir Expansion Project for additional water storage
- Expansion of John Jones Water Treatment Plant for additional water supply reliability and flexibility and future staffing needs
- New ASR wells for storage of water in wet years for use in dry years
- Update Water Master Plan as needed if water supply conditions change

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