Proposed TRU by Hilton Project
Mitigated Negative Declaration

Lead Agency:
City of Tracy, Planning Division
333 Civic Center Plaza
Tracy, CA 95376
Contact: Alan Bell, Senior Planner, alan.bell@cityoftracy.org, (209) 831-6426

Project Title: TRU by Hilton Hotel Project

Project Location: The TRU by Hilton Project site (Project site) is located at 2605 N. Corral Hollow Road in the City of Tracy, San Joaquin County, California. The Project site is identified by Assessor Parcel Number (APN) 214-020-09. The site is north of and adjacent to the Home2 Suites Hotel at the northwest corner of Grant Line Road and Corral Hollow Road. The 1.96-acre Project site is bound by vacant land and two single-family residences to the north, Corral Hollow Road to the east, an existing hotel to the south, and commercial uses to the west.

The Project site consists of vacant, undeveloped land with ruderal grasses which are regularly disced. One tree and one large bush are located on-site. Surrounding land uses include single family uses, W. Kavanagh Avenue, a commercial building (DaVita Grant Line Dialysis), and Interstate 205 (I-205) to the north, single-family residential uses to the east, commercial uses and single-family residential uses to the south, and commercial uses and I-205.

Project Description: The proposed Project would include development and subsequent operation of a four-story, 78-room hotel and associated amenities and parking. The 78-room hotel would total 40,190 square feet (SF), with 10,340 SF on the main floor and 9,950 SF on the second, third, and fourth floors. The tallest point of the hotel building would be 48 feet and nine inches, with the majority of the building at 46 feet and four inches. Landscaping would be provided throughout the site. The proposed Project would connect to existing City infrastructure to provide water, sewer, and storm drainage to the site.

If the City Council adopts the IS/MND in accordance with CEQA requirements, the City may use the IS/MND to support the following actions:

- General Plan Amendment of the property from Office to Commercial;
- Development Review Permit approval for building design, landscaping, and other site features;
- Building, grading, and other permits as necessary for Project construction;
- Adopting a Mitigation Monitoring and Reporting Program (MMRP).

Findings:

In accordance with the California Environmental Quality Act, the City of Tracy has prepared an Initial Study, attached, dated April 2023, to determine whether the proposed project may have a significant adverse effect on the environment. The Initial Study and Proposed Mitigated Negative Declaration reflect the independent judgment of City of Tracy staff. On the basis of the Initial Study, the City of Tracy hereby finds:

> *Although the proposed project could have a significant adverse effect on the environment, there will not be a significant adverse effect in this case because the project has incorporated specific provisions to reduce impacts to a less than significant level and/or the mitigation measures described herein have been added to the project. A Mitigated Negative Declaration has thus been prepared.*

The Initial Study, which provides the basis and reasons for this determination, is attached and/or referenced herein and is hereby made a part of this document.

_____ _____

Signature Date

Proposed Mitigation Measures:

The following Mitigation Measures are extracted from the Initial Study. These measures are designed to avoid or minimize potentially significant impacts, and thereby reduce them to an insignificant level. An MMRP is an integral part of project implementation to ensure that mitigation is properly implemented by the City and the implementing agencies. The MMRP will describe actions required to implement the appropriate mitigation for each CEQA category including identifying the responsible agency, program timing, and program monitoring requirements. Based on the analysis and conclusions of the Initial Study, the impacts of proposed project would be mitigated to less-than-significant levels with the implementation of the mitigation measures presented below.

AIR QUALITY

Mitigation Measure AIR-1*: Prior to the commencement of grading activities, the contractor hired to complete the grading activities shall prepare a construction emissions reduction plan that meets the requirements of SJVAPCD Rule VIII. The construction emissions reductions plan shall be submitted to the SJVAPCD for review and approval. The Project applicant shall comply with all applicable APCD requirements prior to commencement of grading activities.*

Mitigation Measure AIR-2*: The following mitigation measures, in addition to those required under Regulation VIII of the SJVAPCD, shall be implemented by the Project's contractor during all phases of Project grading and construction to reduce fugitive dust emissions:*

- *Water previously disturbed exposed surfaces (soil) a minimum of two-times/day or whenever visible dust is capable of drifting from the site or approaches 20 percent opacity.*
- *Water all haul roads (unpaved) a minimum of two-times/day or whenever visible dust is capable of drifting from the site or approaches 20 percent opacity.*
- *Reduce speed on unpaved roads to less than 5 miles per hour.*
- *Reduce the amount of disturbed surface area at any one time pursuant to the scope of work identified in approved and permitted plans.*
- *Restrict vehicular access to the area to prevent unlawful entry to disturbed areas and limit unnecessary onsite construction traffic on disturbed surfaces. Restriction measures may include fencing or signage as determined appropriate by the City.*
- *Cease grading activities during periods of high winds (greater than 20 mph over a one-hour period).*
- *Asphalt-concrete paving shall comply with SJVAPCD Rule 4641 and restrict use of cutback, slow-sure, and emulsified asphalt paving materials.*

Implementation of this mitigation shall occur during all grading or site clearing activities. The SJVAPCD shall be responsible for monitoring.

Mitigation Measure AIR-3*: Prior to the issuance of any building permits, the Project applicant shall comply with the requirements of District Rule 9510, which is aimed at the following reductions:*

- *20 percent of construction-exhaust nitrogen oxides;*
- *45 percent of construction-exhaust PM10;*
- *33 percent of operational nitrogen oxides over 10 years; and*
- *50 percent of operational PM10 over 10 years.*

The Project applicant shall coordinate with SJVAPCD to develop measures and strategies to reduce operational emissions from the proposed Project. If feasible measures are not available to meet the emissions reductions targets outlined above, then the Project applicant may be required to pay an in-lieu mitigation fee to the SJVAPCD to off-set Project-related emissions impacts. If in-lieu fees are required, the Project applicant shall coordinate with the SJVAPCD to calculate the amount of the fees required to off-set Project impacts. The Project applicant shall provide verification of compliance to the City prior to the issuance of any building permits.

BIOLOGICAL RESOURCES

Mitigation Measure BIO-1: *Prior to the commencement of grading activities or other ground disturbing activities on the Project site, the Project applicant shall arrange for a qualified biologist to conduct a preconstruction survey for western burrowing owls in accordance with SJMSCP requirements. If no owls or owl nests are detected, then construction activities may commence. If burrowing owls or occupied nests are discovered, then the following shall be implemented:*

- *During the breeding season (February 1 through September 1) occupied burrows shall not be disturbed and shall be provided with a 75 meter protective buffer until and unless the SJCOG Technical Advisory Committee (TAC), with the concurrence of the Permitting Agencies' representatives on the TAC; or unless a qualified biologist approved by the Permitting Agencies verifies through non-invasive means that either: 1) the birds have not begun egg laying, or 2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. Once the fledglings are capable of independent survival, the burrow can be destroyed. They should only be destroyed by a qualified biologist using passive one-way eviction doors to ensure that owls are not harmed*

during burrow destruction. Methods for removal of burrows are described in the California Department of Fish and Game's Staff Report on Burrowing Owls (October, 1995).

- *During the non-breeding season (September 1 through January 31) burrowing owls occupying the Project site should be evicted from the Project site by passive relocation as described in the California Department of Fish and Game's Staff Report on Burrowing Owls (Oct., 1995)*

Implementation of this mitigation shall occur prior to grading or site clearing activities. SJCOG shall be responsible for monitoring and a qualified biologist shall conduct surveys and relocate owls as required.

Mitigation Measure BIO-2: *Prior to commencement of any grading activities, the Project proponent shall seek coverage under the SJMSCP to mitigate for habitat impacts to covered special status species. Coverage involves compensation for habitat impacts on covered species through payment of development fees for conversion of open space lands that may provide habitat for covered special status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity. In addition, coverage includes incidental take avoidance and minimization measures for species that could be affected as a result of the proposed Project. There are a wide variety of incidental take avoidance and minimization measures contained in the SJMSCP that were developed in consultation with the USFWS, CDFW, and local agencies. The applicability of incidental takes avoidance and minimization measures are determined by SJCOG on a Project basis. The process of obtaining coverage for a Project includes incidental take authorization (permits) under the Endangered Species Act Section 10(a) and California Fish and Game Code Section 2081. The Section 10(a) permit also serves as a special-purpose permit for the incidental take of those species that are also protected under the MBTA. Coverage under the SJMSCP would fully mitigate all habitat impacts on covered special-status species. The SJMSCP includes the implementation of an ongoing Monitoring Plan to ensure success in mitigating the habitat impacts that are covered. The SJMSCP Monitoring Plan includes an Annual Report process, Biological Monitoring Plan, SJMSCP Compliance Monitoring Program, and the SJMSCP Adaptive Management Plan SJCOG.*

CULTURAL RESOURCES

Mitigation Measure CUL-1: *If any prehistoric or historic artifacts, human remains or other indications of archaeological or paleontological resources are found during grading and construction activities, an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, shall be consulted to evaluate the finds and recommend appropriate mitigation measures.*

- *If cultural resources or Native American resources are identified, every effort shall be made to avoid significant cultural resources, with preservation an important goal. If significant sites cannot feasibly be avoided, appropriate mitigation measures, such as data recovery excavations or photographic documentation of buildings, shall be undertaken consistent with applicable state and federal regulations.*
- *If human remains are discovered, all work shall be halted immediately within 50 meters (165 feet) of the discovery, the County Coroner must be notified, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined to be Native American, the coroner will notify the Native American Heritage Commission, and the procedures outlined in CEQA Section 15064.5(d) and (e) shall be followed.*

If any fossils are encountered, there shall be no further disturbance of the area surrounding this find until the materials have been evaluated by a qualified paleontologist, and appropriate treatment measures have been identified.

GEOLOGY AND SOILS

Mitigation Measure GEO-1: *Prior to the development of the Project site, a subsurface geotechnical investigation must be performed to identify onsite soil conditions and identify any site-specific engineering measures to be implemented during the construction of building foundations and subsurface utilities. The results of the subsurface geotechnical investigation shall be reflected on the Improvements Plans, subject to review and approval by the City's Building Safety and Fire Prevention Division.*

Mitigation Measure GEO-2: *Expansive materials and potentially weak and compressible fills at the site shall be evaluated by a Geotechnical Engineer during the grading plan stage of development. If highly expansive or compressible materials are encountered, special foundation designs and reinforcement, removal and replacement with soil with low to non-expansive characteristics, compaction strategies, or soil treatment options to lower the expansion potential shall be incorporated through requirements imposed by the City's Development Services Department.*

Mitigation Measure GEO-3: *If paleontological resources are discovered during the course of construction, work shall be halted immediately within 50 meters (165 feet) of the discovery, the City of Tracy or San Joaquin County shall be notified, and a qualified paleontologist shall be retained to determine the significance of the discovery. If the paleontological resource is considered significant, it should be excavated by a qualified paleontologist and given to a local agency, State University, or other applicable institution, where they could be curated and displayed for public education purposes.*

HAZARDS AND HAZARDOUS MATERIALS

Mitigation Measure HAZ-1: *A Soils Management Plan (SMP) shall be submitted and approved by the San Joaquin County Department of Environmental Health prior to the issuance of a grading permit. The SMP shall establish management practices for handling hazardous materials, including fuels, paints, cleaners, solvents, etc., during construction. The approved SMP shall be posted and maintained onsite during construction activities and all construction personnel shall acknowledge that they have reviewed and understand the plan.*

Mitigation Measure HAZ-2: *Prior to bringing hazardous materials onsite, the applicant shall submit a Hazardous Materials Business Plan (HMBP) to San Joaquin County Environmental Health Division (CUPA) for review and approval. If during the construction process the applicant or his subcontractors generates hazardous waste, the applicant must register with the CUPA as a generator of hazardous waste, obtain an EPA ID# and accumulate, ship and dispose of the hazardous waste per Health and Safety Code Ch. 6.5. (California Hazardous Waste Control Law).*

NOISE

Mitigation Measure NOISE-1: *The City of Tracy Development Services Department shall establish the following as conditions of approval for any permit that results in the use of construction equipment:*

- *Construction shall be limited to 7:00 a.m. to 7:00 p.m.*
- *All construction equipment powered by internal combustion engines shall be properly muffled and maintained.*
- *Quiet construction equipment, particularly air compressors, are to be selected whenever possible.*
- *All stationary noise-generating construction equipment such as generators or air compressors are to be located as far as is practical from existing residences. In addition, the Project contractor shall place such stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the Project site.*
- *Unnecessary idling of internal combustion engines is prohibited.*
- *The construction contractor shall, to the maximum extent practical, locate on-site equipment staging areas to maximize the distance between construction-related noise sources and noise-sensitive receptors nearest the Project site during all Project construction.*

These requirements shall be noted on the Project plans prior to approval of grading and/or building permits.

TRIBAL CULTURAL RESOURCES

Implement ***Mitigation Measure CUL-1***

ATTACHMENT – MITIGATED NEGATIVE DECLARATION AND INITIAL STUDY FOR THE TRU BY HILTON HOTEL PROJECT, DATED APRIL 2023

MITIGATED NEGATIVE DECLARATION AND INITIAL STUDY

FOR THE

TRU BY HILTON PROJECT

APRIL 2023

Prepared for:

City of Tracy
Development Services Department
333 Civic Center Plaza
Tracy, CA 95376

Prepared by:

De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762
(916) 235-0116

De Novo Planning Group

A Land Use Planning, Design, and Environmental Firm

MITIGATED NEGATIVE DECLARATION AND INITIAL STUDY

FOR THE

TRU BY HILTON PROJECT

APRIL 2023

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INITIAL STUDY

PROJECT TITLE

TRU by Hilton Project

LEAD AGENCY NAME AND ADDRESS

City of Tracy
Development Services Department
333 Civic Center Plaza
Tracy, CA 95376

CONTACT PERSON AND PHONE NUMBER

Alan Bell, Senior Planner
City of Tracy
Planning Division
333 Civic Center Plaza
Tracy, CA 95376
alan.bell@cityoftracy.org
(209) 831-6426

PROJECT SPONSOR'S NAME AND ADDRESS

Andy Kotecha
Raad Hospitality Group
2025 W. Grant Line Road
Tracy, CA 95377

PROJECT LOCATION AND SETTING

The TRU by Hilton Project site (Project site) is located at 2605 N. Corral Hollow Road in the City of Tracy, San Joaquin County, California (see Figures 1 and 2). The Project site is identified by Assessor Parcel Number (APN) 214-020-09. The 1.96-acre Project site consists of vacant undeveloped land with ruderal grasses which are regularly disced (see Figure 3). One tree and one large bush are located on site. The site is bound by vacant land, two single-family residences, a commercial building (Da Vita Grant Line Dialysis), and Interstate 205 (I-205) to the north; Corral Hollow Road and a residential neighborhood to the east; an existing hotel to the south; and commercial uses to the west.

PROJECT DESCRIPTION

The proposed Project would include development and subsequent operation of a four-story, 78-room hotel and associated amenities and parking (see Figure 4). The proposed Project would connect to existing City infrastructure to provide water, sewer, and storm drainage to the site.

The Project components, including the hotel building and utilities, and requested development applications and construction permits, are discussed in detail below.

HOTEL BUILDING

The 78-room hotel would total 40,190 square feet (SF), with 10,340 SF on the main floor and 9,950 SF on each of the second, third, and fourth floors. The main floor would contain the following features: front desk, guest work area and lounge, three offices for employees, employee break room, pantry, dining area with breakfast counter, game area, ice room, fitness center, elevators, laundry, linen storage, fire control room, six guest suites, elevators, and stairs. The second, third, and fourth floors would include guest rooms. Typical guest rooms include standard kings, accessible kings, standard double queens, and accessible double queens.

A pool with a patio and lounge area would be provided to the north of the hotel building, and a designated covered smoking area would be located west of the pool and patio area. A trash enclosure would be provided northwest of the hotel building.

The tallest portion of the hotel building (along a decorative parapet on the south side of the building) would be 48 feet and nine inches, with the majority of the building at 46 feet and four inches. Landscaping would be provided throughout the site. The irrigation on the site will use drip irrigation, will meet the City's requirements, and will comply with the requirements of the City's Water Efficient Landscape Ordinance. Equipment will include dedicated irrigation meter, smart controller, weather sensor, and efficient irrigation emitters, nozzles, and other equipment. The landscape design uses water-wise plant species suitable for this region and that are low maintenance and durable, uses trees to shade paved areas, and plants have been grouped into hydro-zones. A monument sign would be located at the southeastern corner of the site along Corral Hollow Road.

The proposed Project would be subject to Development Review Permit approval by the City, during which City staff would ensure that the proposed Project would comply with all applicable City regulations including, but not limited to, landscaping and visual screening.

ACCESS AND CIRCULATION

Site access would be provided by a new shared driveway located in the southeast corner of the site off Corral Hollow Road. This driveway would be shared with the adjacent Home2Suites Hotel located adjacent south of the Project site. The existing fencing at the southern boundary of the Project site and northern boundary of the adjacent hotel site would be removed to allow for free-flow of pedestrians, bicycles, and automobiles. The Project would also include a secondary shared access to the adjacent Home2Suites Hotel in the southwestern portion of the site. Additionally, a future shared access with the properties to the north and west would be provided in the northwestern portion of the Project site. This northwestern shared access would not be fully developed until the adjacent properties to the north and west are developed at some time in the future.

The proposed parking area would include 80 vehicle parking stalls. The vehicle parking area would be located in the western and southern portions of the Project site.

As part of the proposed Project, the pedestrian push button systems at the Orchard Parkway/Grant Line Road intersection and Kavanagh Avenue/Corral Hollow Road intersection

would be upgraded. Additionally, the striping on the southbound lanes of Corral Hollow Road from the Project frontage to the intersection at Grant Line Road would be refreshed. Further, the southbound bicycle lane striping would be updated from the northern property line to the intersection of Grant Line Road, per the City of Tracy Standard Plans.

UTILITIES

The proposed Project would connect to existing City infrastructure to provide water, sewer, and storm drainage utilities. Existing storm drain, sewer, water, and gas lines/pipes are currently located along S. Corral Hollow Road and Grant Line Road.

The Project would be served by the following existing service providers:

1. City of Tracy for water;
2. City of Tracy for wastewater collection and treatment;
3. City of Tracy for stormwater collection;
4. Pacific Gas and Electric Company for gas and electricity.

Utility lines within adjacent roadways would be extended throughout the Project site. Wastewater, water, and storm drainage lines would be connected via existing lines along Corral Hollow Road and Grant Line Road. The Project would also connect to existing electrical and natural gas infrastructure in the Project vicinity.

Stormwater retention treatment planters would be located throughout the Project site, mainly in the proposed landscaped areas surrounding the hotel building and within the parking areas. Stormwater runoff from each of the drainage areas would be routed to a series of on-site stormwater bioretention treatment planters and treatment/detention basins.

The preliminary plan for the Project shows an underground infiltration system to meet stormwater quality requirements. Best management practices (BMPs) will be applied to the proposed development to limit the concentrations of constituents in any site runoff to acceptable levels. Stormwater flows from the Project site would be directed to the proposed stormwater treatment basins, treatment planters, and bioretention areas by a new stormwater conveyance system on the Project site. The landscaping plan includes stormwater treatment plantings in the treatment/detention basins. Additionally, erosion and sediment control measures would be implemented during construction.

GENERAL PLAN AND ZONING

The Project site is identified as Office on the Tracy General Plan Land Use Map (see Figure 5) and General Highway Commercial (GHC) on the Tracy Zoning Map (see Figure 6). The Project would require a General Plan Amendment to change the designation from Office (O) to Commercial (C).

The C land use designation allows for a relatively wide range of uses but focuses primarily on retail and consumer service activities that meet the needs of Tracy residents and employees as well as passthrough travelers. Office uses are allowed in commercially designated areas. Mixed-use development is also permitted in the Commercial designation. Appropriately scaled and designed residential development in the density ranges permitted in Residential High (RH) may

be allowed, and other residential densities may be allowed in Commercial districts in Areas of Special Consideration as identified in the City's General Plan. In addition, parks are allowed in the Commercial designation. Regardless of configuration, there should be an attempt in both locational criteria and design criteria to be as accessible and appealing to the pedestrian as possible to encourage walking and biking. Commercially designated land may have a maximum floor-area-ratio (FAR) of 1.0. The proposed use is consistent with the proposed C land use designation.

The GHC Zone is to provide areas for commercial activities which are automobile-oriented or for those uses which seek independent locations outside shopping centers or other business clusters. The GHC Zone is not to be confused with the Highway Service (HS) Zone which is applicable to freeway interchanges only. The proposed hotel use is consistent with the current GHC zoning requirements.

REQUESTED DEVELOPMENT APPLICATIONS AND OTHER APPROVALS

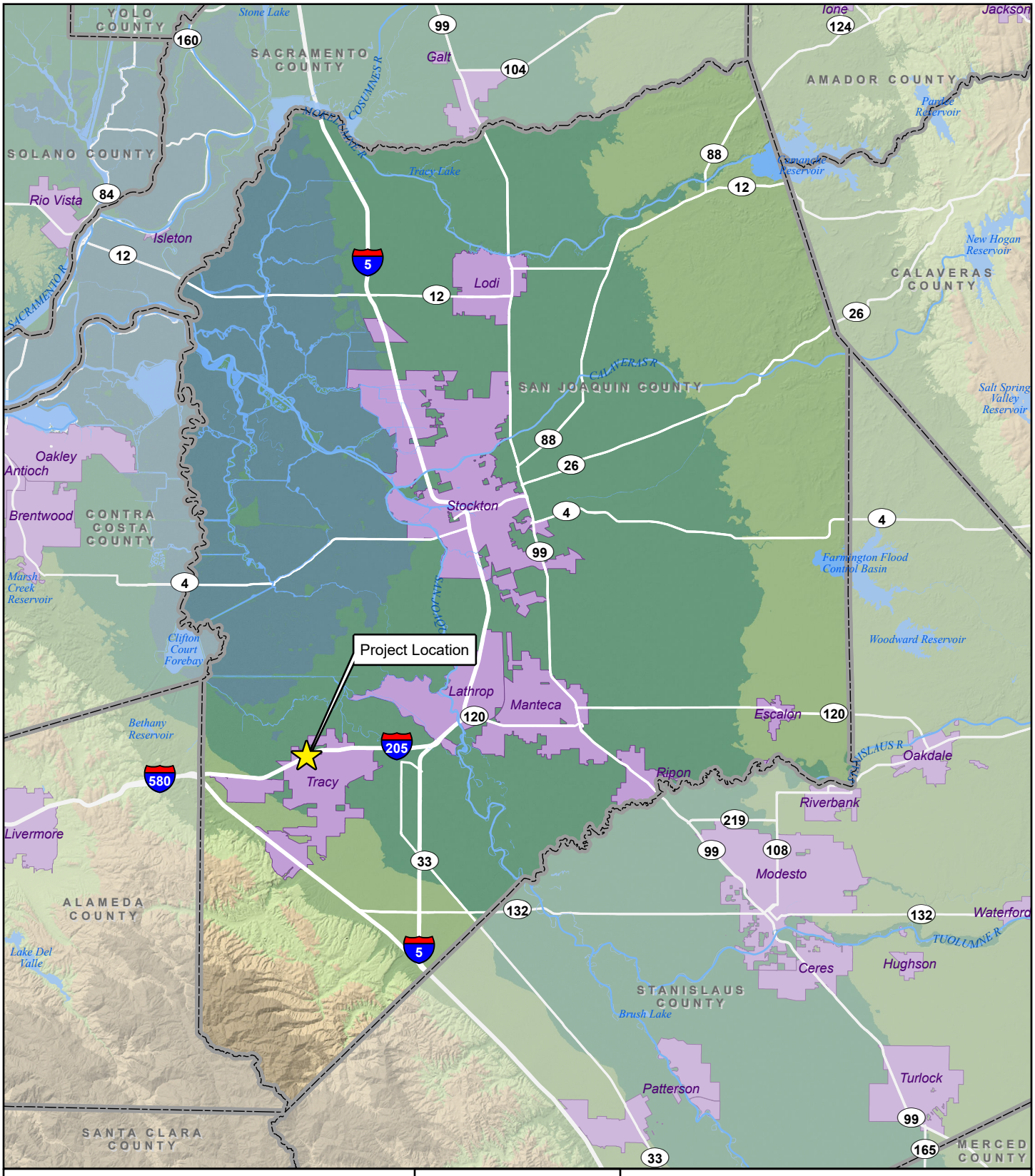
The City of Tracy is the Lead Agency for the proposed Project, pursuant to the State Guidelines for Implementation of CEQA, Section 15050.

If the City Council adopts the IS/MND in accordance with CEQA requirements, the City may use the IS/MND to support the following actions:

- General Plan Amendment of the property from O to C;
- Development Review Permit approval for building design, landscaping, and other site features;
- Building, grading, and other permits as necessary for Project construction;
- Adopting a Mitigation Monitoring and Reporting Program (MMRP).

The following agencies may rely on the adopted IS/MND to issue permits or approve certain aspects of the proposed Project:

- Regional Water Quality Control Board (RWQCB) – Construction activities would be required to be covered under the National Pollution Discharge Elimination System (NPDES);
- RWQCB – The Storm Water Pollution Prevention Plan (SWPPP) would be required to be approved prior to construction activities pursuant to the Clean Water Act;
- San Joaquin Valley Air Pollution Control District (SJVAPCD) – Construction activities would be subject to the SJVAPCD codes and requirements.



LEGEND

- Incorporated Area
- County Boundary

N

0 2½ 5

Miles

Sources: San Joaquin County GIS. Map date: October 12, 2022.

Tracy TRU by Hilton Project

Figure 1. Regional Project Location

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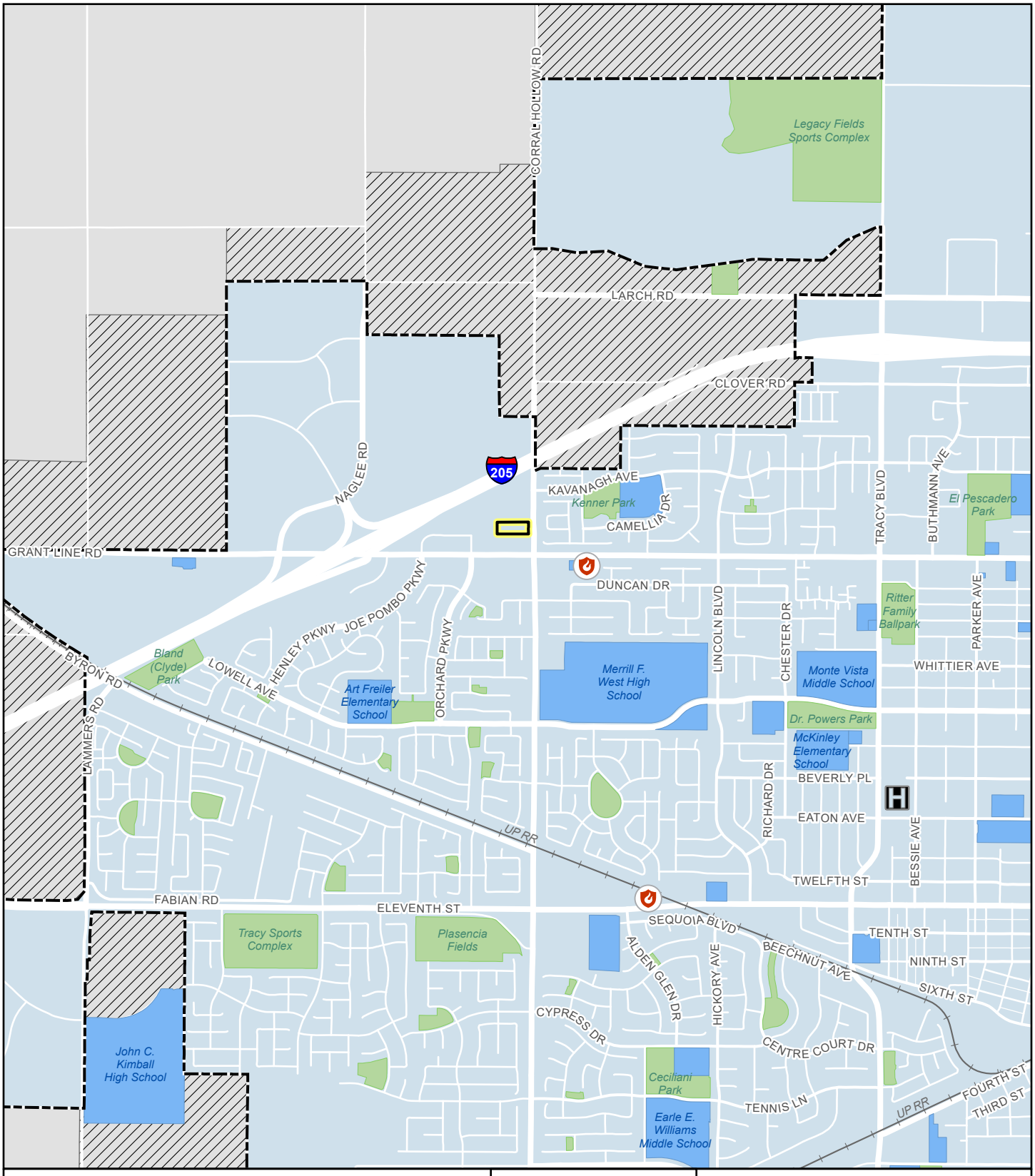

LEGEND

- Project Location
- Tracy City Limits
- Tracy SOI
- Tracy Fire Department Stations
- Sutter Tracy Community
- Schools
- Parks

N

0 1,000 2,000

Feet

Sources: San Joaquin County GIS. Map date: October 12, 2022.

Tracy TRU by Hilton Project

Figure 2. Project Vicinity

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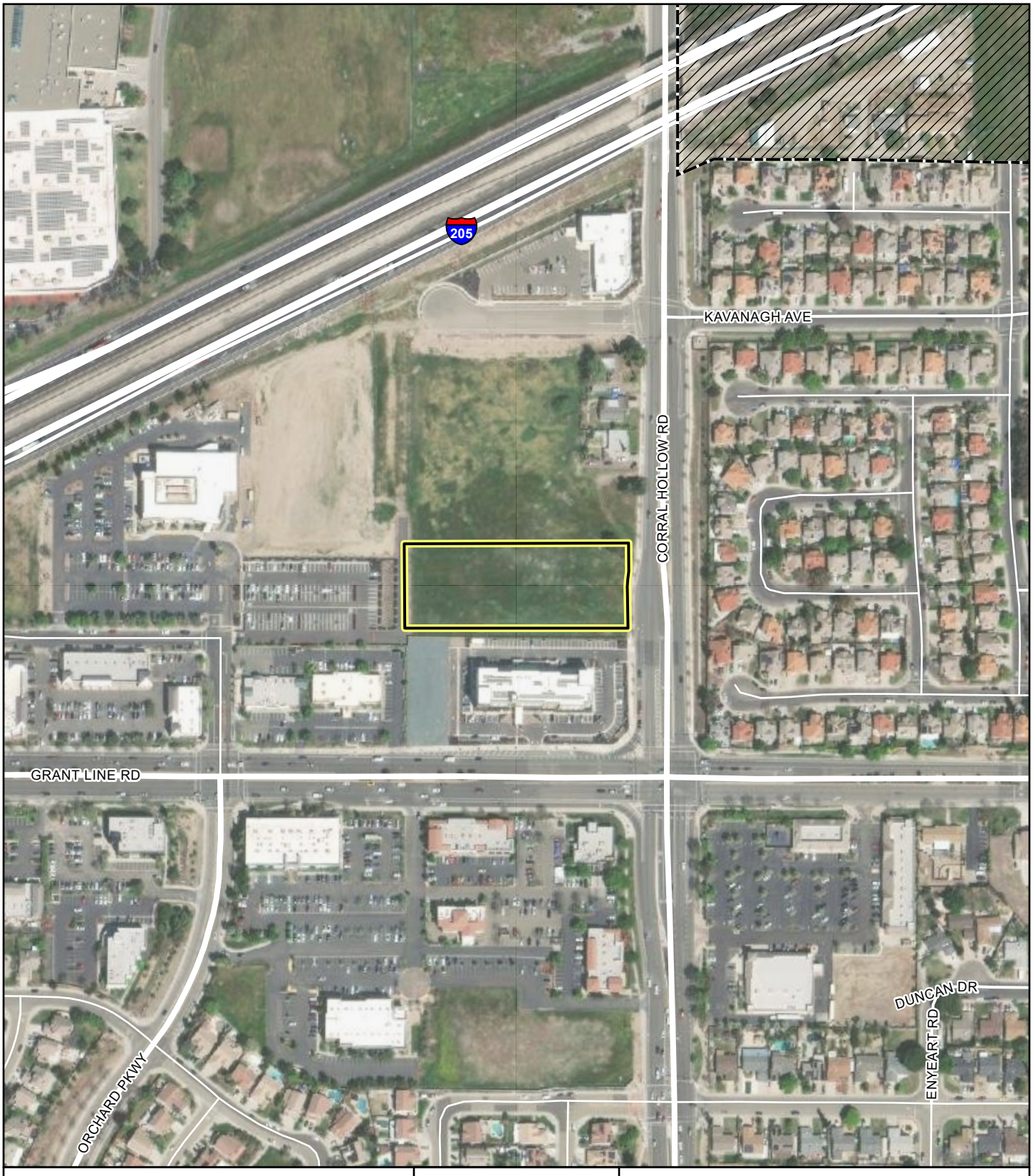

LEGEND

- Project Location
- Tracy City Limits
- Tracy SOI

N

0 100 200

Feet

Sources: San Joaquin County GIS. ArcGIS Online World Imagery Map Service(10/12/2022).
Map date: October 12, 2022.

Tracy TRU by Hilton Project

Figure 3. Aerial View of Project Site

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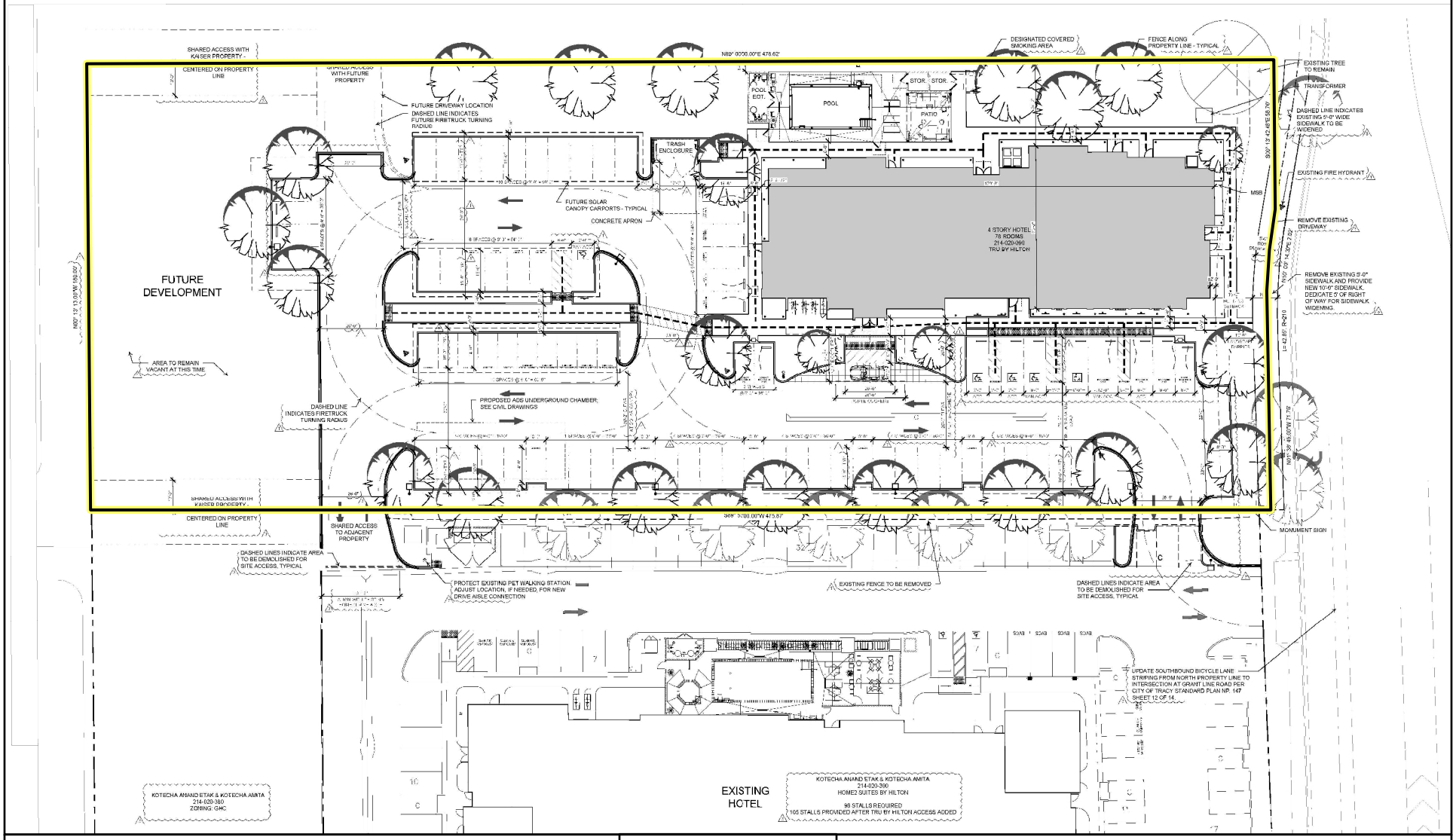

LEGEND

- Project Location
- New Building
- Indicates Accessible Route
- Ground Mounted Light Fixture - See Lighting Design Sheets
- Pole Light (1) Head Square with Pole - See Lighting Design Sheets
- 36" Bollard Light - See Lighting Design Sheets

0 25 50

Feet

Sources: RED INC ARCHITECTS. Map date: March 21, 2023.

Tracy TRU by Hilton Project

Figure 4. Site Plan

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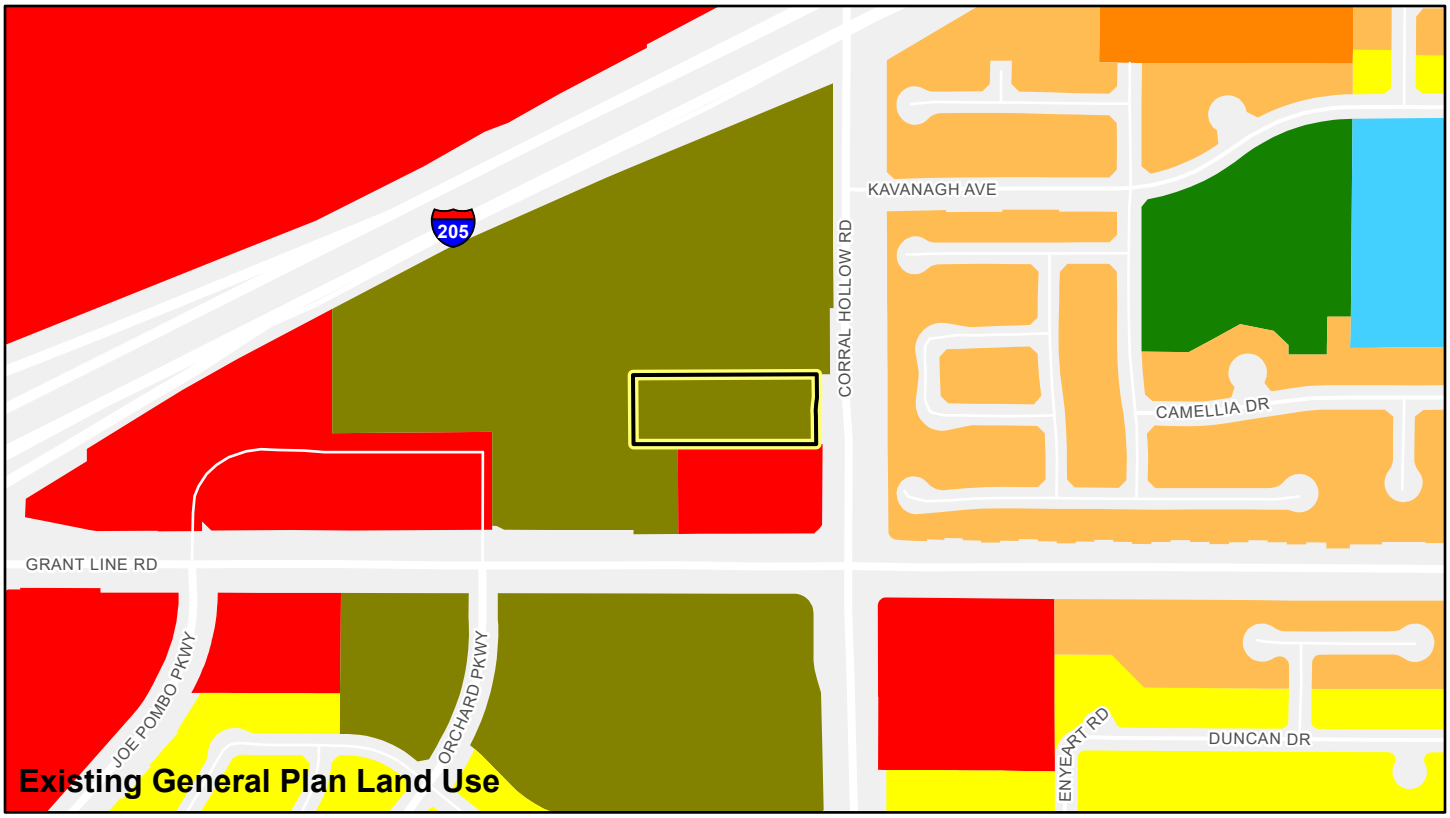

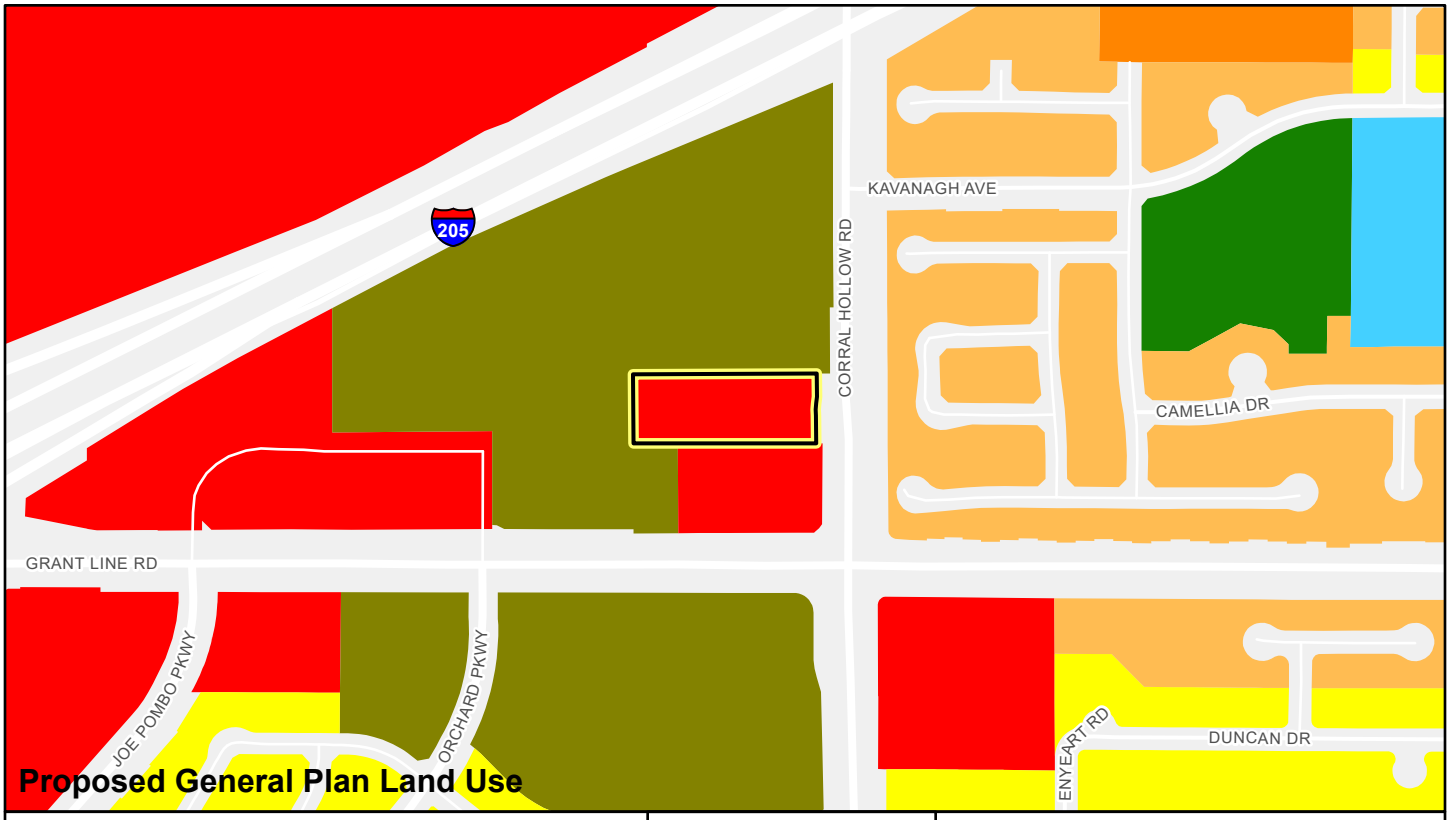

LEGEND

- Project Location

City of Tracy General Plan Land Use

- Commercial
- Office
- Park
- Public Facilities
- Residential High
- Residential Low
- Residential Medium

Sources: San Joaquin County GIS. Map date: October 12, 2022.

N

0 100 200

Feet

Tracy TRU by Hilton Project

Figure 5. Existing and Proposed General Plan Land Use Map

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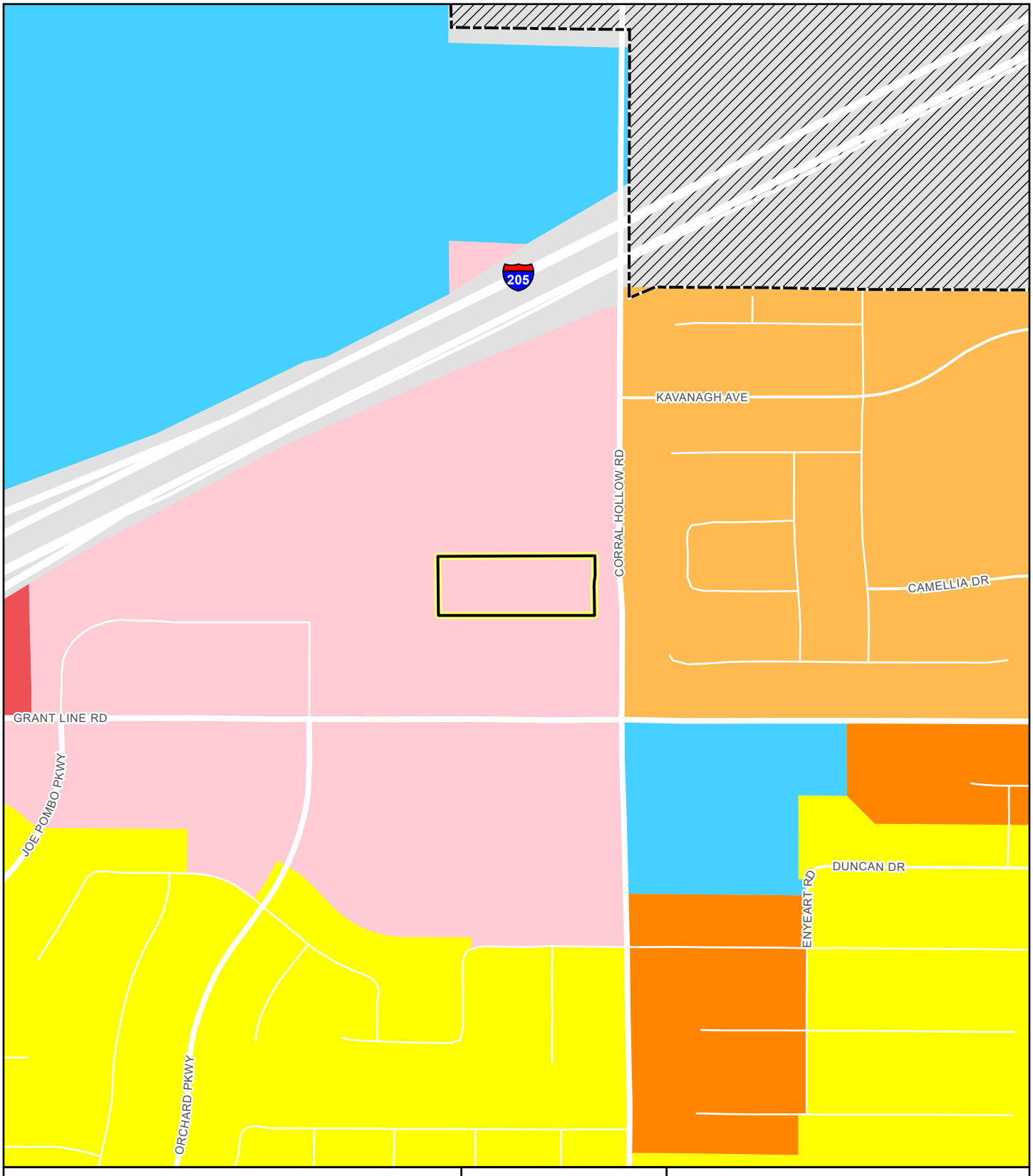

LEGEND

- Project Location
- Tracy City Limits
- Tracy SOI

City of Tracy Zoning

- GHC
- HS
- LDR
- MDC
- MDR
- PUD

N

0 100 200

Feet

Sources: San Joaquin County GIS. Map date: October 12, 2022.

Tracy TRU by Hilton Project

Figure 6. Existing Zoning Map

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ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

	Aesthetics		Agriculture and Forest Resources		Air Quality
	Biological Resources		Cultural Resources		Geology and Soils
	Greenhouse Gasses		Hazards and Hazardous Materials		Hydrology and Water Quality
	Land Use and Planning		Mineral Resources		Noise
	Population and Housing		Public Services		Recreation
	Transportation and Traffic		Tribal Cultural Resources		Utilities and Service Systems
	Mandatory Findings of Significance				

DETERMINATION:

On the basis of this initial evaluation:

	I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
X	I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
	I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
	I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
	I find that although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.

Signature Date

EVALUATION INSTRUCTIONS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).
5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
    a) Earlier Analysis Used. Identify and state where they are available for review.
    b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9) The explanation of each issue should identify:
    a) The significance criteria or threshold, if any, used to evaluate each question; and
    b) The mitigation measure identified, if any, to reduce the impact to less than significance

EVALUATION OF ENVIRONMENTAL IMPACTS:

In each area of potential impact listed in this section, there are one or more questions which assess the degree of potential environmental effect. A response is provided to each question using one of the four impact evaluation criteria described below. A discussion of the response is also included.

- Potentially Significant Impact. This response is appropriate when there is substantial evidence that an effect is significant. If there are one or more "Potentially Significant Impact" entries, upon completion of the Initial Study, an EIR is required.
- Less than Significant With Mitigation Incorporated. This response applies when the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact". The Lead Agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level.
- Less than Significant Impact. A less than significant impact is one which is deemed to have little or no adverse effect on the environment. Mitigation measures are, therefore, not necessary, although they may be recommended to further reduce a minor impact.
- No Impact. These issues were either identified as having no impact on the environment, or they are not relevant to the Project.

ENVIRONMENTAL CHECKLIST

This section of the Initial Study incorporates the most current Appendix "G" Environmental Checklist Form, contained in the CEQA Guidelines. Impact questions and responses are included in both tabular and narrative formats for each of the 18 environmental topic areas.

I. AESTHETICS -- WOULD THE PROJECT:

	Potentially Significant Impact	***Less Than Significant with Mitigation Incorporation***	***Less Than Significant Impact***	***No Impact***
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?			X	
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	

RESPONSES TO CHECKLIST QUESTIONS

Response a): Less than Significant. There are no designated scenic vistas located on or adjacent to the Project site. The Project site currently consists primarily of vacant, undeveloped land with ruderal grasses which are regularly disced and is surrounded by existing or future urban development. The vacant land to the north and northwest of the Project site is designated as Office by the City's General Plan, and I-205 is located further north.

The proposed Project uses are consistent and compatible with the surrounding land uses. Surrounding land uses include single family uses, W. Kavanagh Avenue, a commercial building (DaVita Grant Line Dialysis), and Interstate 205 (I-205) to the north, single-family residential uses to the east, commercial uses and single-family residential uses to the south, and commercial uses and I-205.

Implementation of the proposed Project would provide for additional hotel development in an area of the City that is adjacent to existing commercial development. The Project site is not topographically elevated from the surrounding lands, and is not highly visible from areas beyond the immediate vicinity of the site. There are no prominent features on the site, such as extensive trees, rock outcroppings, or other visually distinctive features that contribute to the scenic

quality of the site. The Project site is not designated as a scenic vista by the City of Tracy General Plan.

Implementation of the proposed Project would not significantly change the existing visual character of the Project area, as much of the areas immediately adjacent to the site are used for commercial purposes. Furthermore, the General Plan designates this area as Office, which is intended to provide for the maintenance and expansion of the job and economic base of the City of Tracy and to provide more Tracy residents with the potential to work in the City. The Project is consistent with the adopted Statement of Overriding Considerations, and uses established by the General Plan. Implementation of the proposed Project would introduce a hotel building to the Project area that would be generally consistent with the surrounding commercial developments, and consistent with the intended uses established by the Tracy General Plan. Therefore, this impact is considered **less than significant**.

Response b): Less than Significant. As described in the Tracy General Plan EIR**,** there are two Officially Designated California Scenic Highway segments in the Tracy Planning Area, which extend a total length of 16 miles. The first designated scenic highway is the portion of I-580 between I-205 and I-5, which offers views of the Coast Range to the west and the Central Valley's urban and agricultural lands to the east. The second scenic highway is the portion of I-5 that starts at I-205 and continues south to Stanislaus County, which allows for views of the surrounding agricultural lands and the Delta-Mendota Canal and California Aqueduct.

The Project site lies approximately 5.3 miles northeast of the I-580 scenic highway. The Project site is approximately 6.0 miles west of the I-5 scenic highway and is not visible from the Project site. Additionally, the Project site is not visible from the I-580 corridor. The Project site is consistent with the surrounding commercial uses and consists of a four-story hotel structure. The structures proposed as part of the Project present no more visual prominence within the development area relative to the existing development. Existing commercial buildings in the vicinity are one to three stories. Distant background views would remain roughly equal to existing conditions.

The Project site is not visible from any of the above-referenced scenic highways. The Project site contains one tree along the eastern boundary of the site. As shown in the landscaping plan, the tree would be retained. Development of the proposed Project would not result in the removal of any rock outcroppings, or buildings of historical significance, and would not result in substantial changes to the viewsheds from the designated scenic highways in the vicinity of the City of Tracy. Therefore, this is a **less than significant** impact.

Response c): Less than Significant. The CEQA definition for an "Urbanized area" means a central city or a group of contiguous cities with a population of 50,000 or more, together with adjacent densely populated areas having a population density of at least 1,000 persons per square mile. In addition, to be considered an Urbanized area according to CEQA, projects must also be within the boundary of a map prepared by the U.S. Bureau of the Census which designates the area as urbanized area. According to the U.S. Bureau of the Census, the Project site is mapped and designated as urbanized area. In addition, the Project site is located within the City of Tracy,

which has an estimated population of approximately 94,538 people; meaning the Project site is within an urbanized area and subjected to applicable zoning or other regulation governing scenic quality. Development of the Project site would convert the Project site from its existing state to a hotel use.

The proposed Project would add a commercial use to an area that currently contains numerous commercial buildings. The proposed Project would be visually compatible with the surrounding commercial uses. Site specific characteristics would change the site from vacant land to commercial uses. However, taking into account the scope and location of the proposed Project relative to the surrounding area uses, this would not greatly alter the area's overall visual character.

Additionally, the Project is subject to the City of Tracy's development and design review criteria, which would ensure that the exterior facades of the proposed structures, landscaping, streetscape improvements and exterior lighting improvements are compatible with the surrounding land uses. Additionally, the proposed Project includes extensive planting of new trees and other vegetation. Overall, Project implementation would not conflict with the applicable zoning and other regulations governing scenic quality. Therefore, this impact is considered **less than significant**.

Response d): Less than Significant. Daytime glare can occur when the sunlight strikes reflective surfaces such as windows, vehicle windshields and shiny reflective building materials. The proposed Project would introduce new commercial structures into the Project site; however, reflective building materials are not proposed for use in the Project, and as such, the Project is not anticipated to result in increases in daytime glare.

The proposed Project would include exterior lighting around the proposed structures. The City of Tracy Standard Plan #140 establishes street light standards, and requirements for light illumination. Exterior lighting on new projects is also regulated by the Tracy Municipal Code, 10.08.4000 (a), which specifies that the site plan and architectural review package includes an exterior lighting standards and devices review. The City addresses light and glare issues on a case-by-case basis during Project approval and typically adds requirements as a condition of Project approval to shield and protect against light spillover from one property to the next as required by Tracy Municipal Code Section 10.08.3530(h).

A lighting plan for the Project is included in the Plan Set. The lighting plan shows that exterior Project lighting has been designed to minimize light spillage onto adjacent properties to the greatest extent feasible. Therefore, this impact would be **less than significant**.

II. AGRICULTURE AND FOREST RESOURCES -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?			X	
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 1222(g)) or timberland (as defined in Public Resources Code section 4526)?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?			X	

RESPONSES TO CHECKLIST QUESTIONS

Response a): Less than Significant. The Project site is designated as Vacant or Disturbed Land by the Farmland Mapping and Monitoring Program and the California Department of Conservation.[1] Figure 7 identifies important farmlands, as mapped by the California Department of Conservation, on and near the Project site. The Project site has been historically used for agricultural production. Due to the existing surrounding land uses, the Project site is not suitable for agricultural production and agricultural operations.

The potential environmental impacts from development of the site for urban uses and the associated removal of prime farmland soil for agricultural use were considered and addressed in the City of Tracy General Plan and Final EIR. There, it was determined that buildout of the General Plan would result in the conversion of Prime Farmland, Unique Farmland and Farmland of Statewide Importance to urban uses. The General Plan Draft EIR found this to be a significant and unavoidable impact. On February 1, 2011, the Tracy City Council adopted a Statement of Overriding Considerations (Resolution 2011-028) for the loss of prime agricultural land resulting from adoption of the Plan and EIR, and provided mitigation measures for the agricultural land lost to development in the City of Tracy's urbanized areas. Mitigation measures included the implementation of a "Right to Farm" ordinance by the City (Tracy Municipal Code Chapter 10.24 et seq.), intended to preserve and protect existing agricultural operations within the

[1] Available at: http://maps.conservation.ca.gov/ciff/ciff.html.

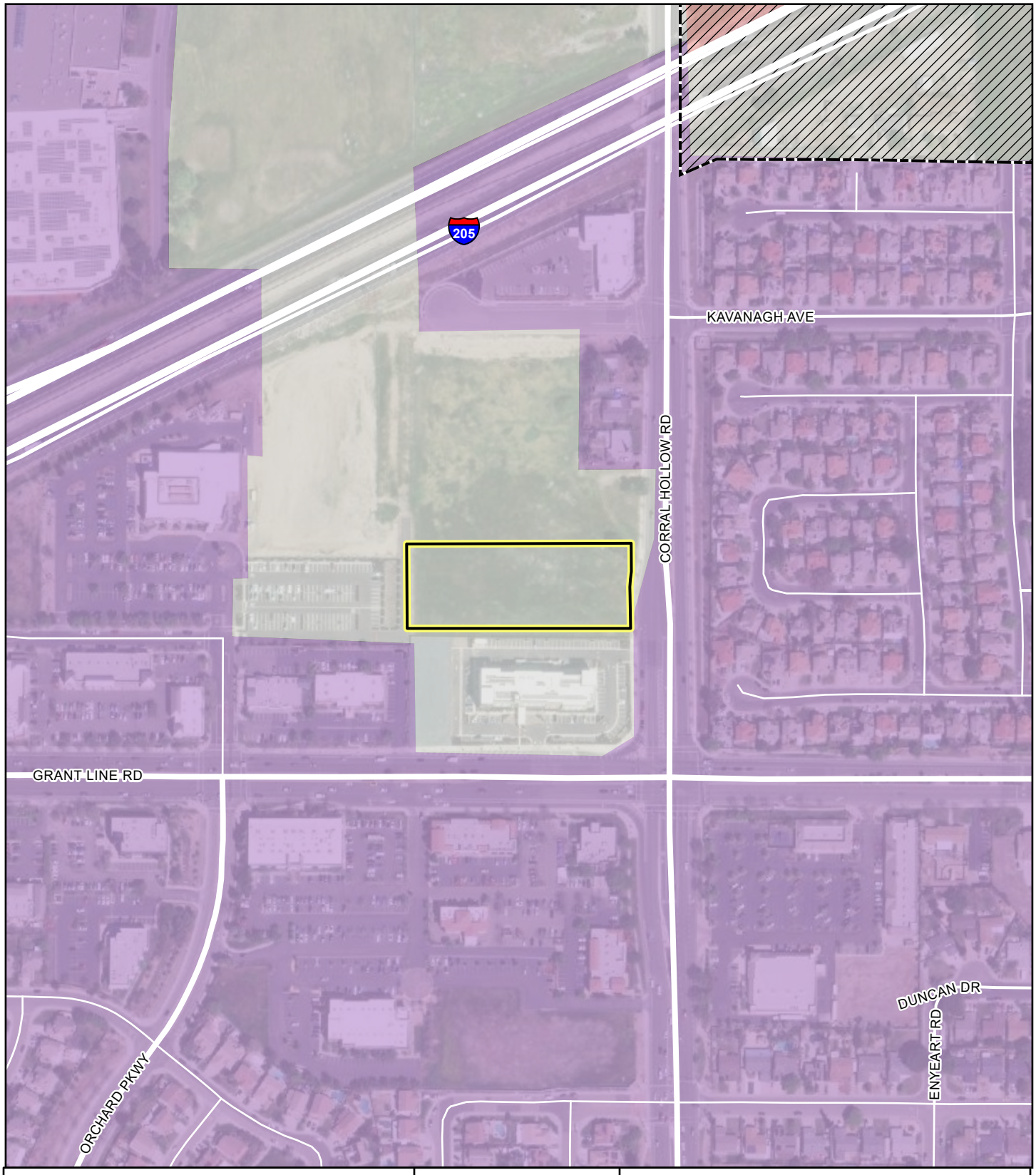
incorporated City, and participation in the City's agricultural mitigation fee program (Tracy Municipal Code, Chapter 13.26).

The proposed Project site is designated Office, which is intended for future urban land uses in the Tracy General Plan. As such, implementation of the proposed Project would not create new impacts over and above those identified in the General Plan Final EIR, nor significantly change previously identified impacts. Therefore, this would be considered a **less than significant** impact.

Response b): No Impact. The Project site is not under a Williamson Act Contract, nor are any of the parcels immediately adjacent to the Project site under a Williamson Act Contract. Therefore, implementation of the proposed Project would not conflict with a Williamson Act Contract. The Project site is currently zoned GHC by the City's Zoning Map. As such, the proposed Project would not conflict with any agricultural zoning or Williamson Act Contract. There is **no impact**.

Responses c) and d): No Impact. The Project site is located in an area consisting of residential and commercial development. One tree is present on the Project site; however, this tree is ornamental in nature. There are no forest resources on the Project site or in the immediate vicinity of the Project site. Therefore, development of the Project would result in **no impact**.

Response e): Less than Significant. As described under Responses (a) above, the proposed Project site has previously been used for agricultural purposes, but is not designated or zoned for agricultural uses. The proposed Project is identified for urban land uses in the Tracy General Plan. The proposed Project is consistent with the overriding considerations that were adopted for the General Plan. As such, implementation of the proposed Project would not create new impacts over and above those identified in the General Plan Final EIR, nor significantly change previously identified impacts. Therefore, implementation of the proposed Project would result in a **less than significant** impact.



LEGEND

- Project Location
- Tracy City Limits
- Tracy SOI
- Vacant or Disturbed Land
- Rural Residential Land
- Urban and Built-Up Land

N

0 100 200

Feet

Sources:California Department of Conservation Farmland Mapping and Monitoring Program; San Joaquin County GIS. ArcGIS Online World Imagery Map Service(10/12/2022).
Map date: October 12, 2022.

Tracy TRU by Hilton Project

Figure 7. Important Farmland Map

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

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III. AIR QUALITY -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Conflict with or obstruct implementation of the applicable air quality plan?		X		
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		X		
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?		X		
d) Expose sensitive receptors to substantial pollutant concentrations?			X	
e) Create objectionable odors affecting a substantial number of people?			X	

EXISTING SETTING

The Project site is located within the boundaries of the San Joaquin Valley Air Pollution Control District (SJVAPCD). This agency is responsible for monitoring air pollution levels and ensuring compliance with federal and state air quality regulations within the San Joaquin Valley Air Basin (SJVAB) and has jurisdiction over most air quality matters within its borders.

RESPONSES TO CHECKLIST QUESTIONS

Responses a), b), c): Less than Significant with Mitigation. Air quality emissions would be generated during construction of the proposed Project and during operation of the proposed Project. Construction-related air quality impacts and operational air quality impacts are addressed separately below.

Construction-Related Emissions

The SJVAPCD has published guidance on determining CEQA applicability, significance of impacts, and potential mitigation of significant impacts, in the SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI). The SJVAPCD has established thresholds of significance for criteria pollutant emissions, which are based on District New Source Review (NSR) offset requirements for stationary sources. Using project type and size, the SJVAPCD has pre-quantified emissions and determined a size below which it is reasonable to conclude that a project would not exceed applicable thresholds of significance for criteria pollutants. In the interest of streamlining CEQA requirements, projects that fit the descriptions and project sizes provided in the SJVAPCD Small Project Level (SPAL) are deemed to have a less than significant impact on air quality and, as such, are excluded from quantifying criteria pollutant emissions for CEQA purposes.

The SJVAPCD's approach to analysis of construction impacts is that quantification of construction emissions is not necessary if an Initial Study demonstrates that construction emissions would less than significant based on the SJVAPCD SPAL screening levels (SJVAPCD, 2015). The proposed Project would only generate a very small number of vehicle trips during its construction and operational phases and would not require a large Project area (far less than the SPAL screening threshold of 1,673 daily trips for commercial land uses, and 200 units for the hotel land use, respectively). Specifically, the Project would only include 78 hotel rooms and, as provided in the Transportation Analysis provided by Kimley Horn (2023), only generate approximately 623 daily trips. Based on these Project characteristics, the proposed Project would be deemed to have a less than significant impact on air quality under the SPAL guidelines (SJVAPCD, 2015). As such, the proposed Project is excluded from quantifying criteria pollutant emissions for CEQA purposes.

However, regardless of emission quantities, the SJVAPCD requires construction related mitigation in accordance with their rules and regulations. Implementation of the following mitigation measures in addition to compliance with all applicable measures from SJVAPCD Rule VIII would ensure that the Project would have a **less than significant** impact related to construction emissions.

MITIGATION MEASURE(S)

Mitigation Measure AIR-1*: Prior to the commencement of grading activities, the contractor hired to complete the grading activities shall prepare a construction emissions reduction plan that meets the requirements of SJVAPCD Rule VIII. The construction emissions reductions plan shall be submitted to the SJVAPCD for review and approval. The Project applicant shall comply with all applicable APCD requirements prior to commencement of grading activities.*

Mitigation Measure AIR-2*: The following mitigation measures, in addition to those required under Regulation VIII of the SJVAPCD, shall be implemented by the Project's contractor during all phases of Project grading and construction to reduce fugitive dust emissions:*

- *Water previously disturbed exposed surfaces (soil) a minimum of two-times/day or whenever visible dust is capable of drifting from the site or approaches 20 percent opacity.*
- *Water all haul roads (unpaved) a minimum of two-times/day or whenever visible dust is capable of drifting from the site or approaches 20 percent opacity.*
- *Reduce speed on unpaved roads to less than 5 miles per hour.*
- *Reduce the amount of disturbed surface area at any one time pursuant to the scope of work identified in approved and permitted plans.*
- *Restrict vehicular access to the area to prevent unlawful entry to disturbed areas and limit unnecessary onsite construction traffic on disturbed surfaces. Restriction measures may include fencing or signage as determined appropriate by the City.*

- *Cease grading activities during periods of high winds (greater than 20 mph over a one-hour period).*
- *Asphalt-concrete paving shall comply with SJVAPCD Rule 4641 and restrict use of cutback, slow-sure, and emulsified asphalt paving materials.*

Implementation of this mitigation shall occur during all grading or site clearing activities. The SJVAPCD shall be responsible for monitoring.

Operational-Related Emissions

For the purposes of this operational air quality analysis, actions that violate Federal standards for criteria pollutants (i.e., primary standards designed to safeguard the health of people considered to be sensitive receptors while outdoors and secondary standards designed to safeguard human welfare) are considered significant impacts. Additionally, the SJVAPCD has established operations related emissions thresholds of significance as follows: 10 tons per year of oxides of nitrogen (NO_x), 10 tons per year of reactive organic gases (ROG), and 15 tons per year particulate matter of 10 microns or less in size (PM_{10}) and 15 tons per year particulate matter of 2.5 microns or less in size ($PM_{2.5}$). Additionally, as discussed previously, the SJVAPCD has established thresholds of significance for criteria pollutant emissions, which are based on District NSR offset requirements for stationary sources. Using project type and size, the SJVAPCD has pre-quantified emissions and determined a size below which it is reasonable to conclude that a project would not exceed applicable thresholds of significance for criteria pollutants.

The proposed Project is smaller in scope and size than the SJVAPCD's SPAL for hotel uses (200 rooms). Therefore, localized CO modeling is not warranted for this Project.

Rule 9510 Indirect Source Review

District Rule 9510 requires developers of large residential, commercial and industrial projects to reduce smog-forming (NOx) and particulate (PM_{10} and $PM_{2.5}$) emissions generated by their projects. The Rule applies to projects which, upon full build-out, will include 2,000 square feet of commercial space. Project developers are required to reduce:

- 20 percent of construction-exhaust nitrogen oxides;
- 45 percent of construction-exhaust PM_{10};
- 33 percent of operational nitrogen oxides over 10 years; and
- 50 percent of operational PM_{10} over 10 years.

Developers are encouraged to meet these reduction requirements through the implementation of on-site mitigation; however, if the on-site mitigation does not achieve the required baseline emission reductions, the developer will mitigate the difference by paying an off-site fee to the District. Fees reduce emissions by helping to fund clean-air projects in the District.

The proposed Project includes development of a 78-room hotel. Therefore, the Project would be subject to the requirements of Direct Rule 9510. Additionally, the SJVAPCD has established thresholds of significance for criteria pollutant emissions, which are based on District New

Source Review (NSR) requirements. Projects with emissions below the thresholds of significance for criteria pollutants would be determined to "not conflict or obstruct implementation of the District's air quality plan." As such, the Project would result in **less than significant** air quality impacts, and would not conflict or obstruct implementation of the District's air quality plan. However, regardless of the emissions totals presented above, the Project is still subject to the requirements of SJVAPCD Rule 9510, as described above and required by Mitigation Measure AIR-3.

MITIGATION MEASURE(S)

Mitigation Measure AIR-3*: Prior to the issuance of any building permits, the Project applicant shall comply with the requirements of District Rule 9510, which is aimed at the following reductions:*

- *20 percent of construction-exhaust nitrogen oxides;*
- *45 percent of construction-exhaust PM10;*
- *33 percent of operational nitrogen oxides over 10 years; and*
- *50 percent of operational PM10 over 10 years.*

The Project applicant shall coordinate with SJVAPCD to develop measures and strategies to reduce operational emissions from the proposed Project. If feasible measures are not available to meet the emissions reductions targets outlined above, then the Project applicant may be required to pay an in-lieu mitigation fee to the SJVAPCD to off-set Project-related emissions impacts. If in-lieu fees are required, the Project applicant shall coordinate with the SJVAPCD to calculate the amount of the fees required to off-set Project impacts. The Project applicant shall provide verification of compliance to the City prior to the issuance of any building permits.

Response d): Less than Significant. Sensitive receptors are those parts of the population that can be severely impacted by air pollution. Sensitive receptors include children, the elderly, and the infirm. The closest sensitive receptors are located approximately 200 feet to the north and 175 feet to the east of the Project site.

Implementation of the proposed Project would not expose these or other nearby sensitive receptors to substantial pollutant concentrations. Air emissions would be generated during the construction phase of the Project. The construction phase of the Project would be temporary and short-term, and the implementation of Mitigation Measures AIR-1, AIR-2, and AIR-3 would greatly reduce pollution concentrations generated during construction activities.

Operation of the proposed Project would result in emissions primarily from vehicle trips. As described under Response a) – c) above, the proposed Project would not generate significant concentrations of air emissions. Impacts to sensitive receptors would be negligible and this is a **less than significant** impact.

Response e): Less than Significant. Operation of the proposed Project would not generate notable odors. The proposed Project includes development of hotel uses, which is compatible with the surrounding land uses. Occasional mild odors may be generated during landscaping

maintenance (equipment exhaust), but the Project would not otherwise generate odors. Trash receptacles would be provided in the northern portion of the site. The receptacles would have lids in order to contain potential odor from trash and waste. This is a **less than significant** impact and no mitigation is required.

IV. BIOLOGICAL RESOURCES -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?				X
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			X	
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?		X		
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?		X		

RESPONSES TO CHECKLIST QUESTIONS

Response a): Less than Significant with Mitigation. A background search of special-status species within one mile of the Project site that are documented in the California Natural Diversity Database (CNDDB) was completed. Figure 8 illustrates the special-status species records located within the nine-quadrangle radius of the Project site.

Special-status invertebrates that occur within the San Joaquin County region include: longhorn fairy shrimp, vernal pool fairy shrimp, and midvalley fairy shrimp, which requires vernal pools and swale areas within grasslands; and the valley elderberry longhorn beetle, which is an insect that is only associated with blue elderberry plants, oftentimes in riparian areas and sometimes on land in the vicinity of riparian areas. The Project site does not contain essential habitat for these special status invertebrates. Additionally, no CNDDB records of the aforementioned special-status invertebrates exist within one-mile of the Project site. Implementation of the

proposed Project would have a **less than significant** impact on these species. No mitigation is necessary.

Special-status reptiles and amphibians that occur within the region include the western pond turtle, which requires aquatic environments located along ponds, marshes, rivers, and ditches; the California tiger salamander, which is found is grassland habitats where there are nearby seasonal wetlands for breeding; the silvery legless lizard, which is found in sandy or loose loamy soils under sparse vegetation with high moisture content; San Joaquin whipsnake, which requires open, dry habitats with little or no tree cover with mammal burrows for refuge; the Alameda whipsnake, which is restricted to valley-foothill hardwood habitat on south-facing slopes; the California horned lizard, which occurs in a variety of habitats including, woodland, forest, riparian, and annual grasslands, usually in open sandy areas; the foothill yellow-legged frog, which occurs in partly shaded and shallow streams with rocky soils; the California red legged frog, which occurs in stream pools and ponds with riparian or emergent marsh vegetation; and the western spadefoot toad, which requires grassland habitats associated with vernal pools.

No CNDDB records of the aforementioned special-status reptiles or amphibians exist within one-mile of the Project site. The Project site does not contain essential habitat for these special status reptiles and amphibians. Implementation of the proposed Project would have a **less than significant** impact on these species. No mitigation is necessary.

Numerous special-status plant species are known to occur in the region. Many of these special status plant species require specialized habitats such as serpentine soils, rocky outcrops, slopes, vernal pools, marshes, swamps, riparian habitat, alkali soils, and chaparral, which are not present on the Project site. The Project site is located in an area that was likely valley grassland prior to human settlement, and there are several plant species that are found in valley and foothills grasslands areas. These species include large-flowered fiddleneck, bent-flowered fiddleneck, big balsamroot, big tarplant, round-leaved filaree, Lemmon's jewelflower, and showy golden madia. Human settlement has involved a high frequency of ground disturbance associated with the historical farming activities in the region, including the Project site.

CNDDB records of two special-status plant species exist within one mile of the Project site: big tarplant and caper-fruited tropidocarpum. The Project site does not contain suitable habitat for special-status plant species, and these species are not expected to be present on the site due to ongoing site disturbance. Implementation of the proposed Project would have a **less than significant** impact on these species. No mitigation is necessary.

Special-status birds that occur within the region include tricolored blackbird, Swainson's hawk, northern harrier, and bald eagle, which are associated with streams, rivers, lakes, wetlands, marshes, and other wet environments; loggerhead shrike, and burrowing owl, which lives in open areas, usually grasslands, with scattered trees and brush; and raptors that are present in varying habitats throughout the region.

Swainson's Hawk. The Swainson's hawk is threatened in California and is protected by the California Department of Fish and Wildlife (CDFW) and the Migratory Bird Treaty Act (MBTA).

Additionally, Swainson's hawk foraging habitat is protected by the CDFW. Swainson's hawks forage in open grasslands and agricultural fields and commonly nest in solitary trees and riparian areas in close proximity to foraging habitat. The foraging range for Swainson's hawk is ten miles from its nesting location. There is one documented occurrence of Swainson's hawk within one mile of the Project site; although not of high quality, potentially suitable nesting habitat for this species occurs within the on-site tree along the eastern site boundary. Additionally, the site and the surrounding open grassland habitat will provide low to medium quality foraging opportunities for local Swainson's hawks. The San Joaquin Council of Governments (SJCOG) administers the San Joaquin County Multi- Species Open Space and Conservation Plan (SJMSCP) for the region. The proposed Project would require coverage under the SJMSCP. SJCOG would apply incidental take minimization measures for the Project. As such, impacts to Swainson's hawk are **less than significant** with implementation of Mitigation Measure BIO-1.

Burrowing Owls. Burrowing owls are a California Species of Special Concern and are protected by the CDFW and the MBTA. Burrowing owls forage in open grasslands and shrublands and typically nest in old ground squirrel burrows. There are four documented occurrences of burrowing owls within one mile of the Project site. The nearest documented occurrence of burrowing owl is located approximately 0.26 miles north of the northern boundary of the Project site. The Project site contains suitable, but not high quality, habitat for burrowing owls. The Project site is near to other lands that are currently undeveloped that offer foraging and roosting habitat for wintering or breeding owls. Overall, there is the potential for burrowing owls to occupy the site. While considered unlikely, this is considered potentially significant impact.

The proposed Project would require coverage under the SJMSCP and SJCOG would apply incidental take minimization measures for the Project. In addition, implementation of Mitigation Measure BIO-1 would ensure that burrowing owls are not impacted during construction activities. Implementation of Mitigation Measure BIO-1 would ensure a **less than significant** impact to burrowing owls.

Tricolored Blackbird. Tricolored blackbirds are a California Species of Special Concern and are protected by the CDFW and the MBTA. Tricolored blackbirds nest in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grainfields. Tricolored blackbird habitat must be large enough to support 50 pairs and likely requires water at or near the nesting colony. The Project site does not contain suitable habitat for tricolored blackbirds. As such, impacts to tricolored blackbirds are **less than significant**.

Participation in the SJMSCP is recommended for all new projects on previously undeveloped land in Tracy. Although the likelihood for the occurrence of any special status plant or wildlife species on the site is extremely low, the implementation of Mitigation Measure BIO-2 would ensure that special status plant or wildlife species are protected throughout the region. Impacts to special status plant or wildlife species would be reduced to a **less than significant** level with mitigation.

MITIGATION MEASURE(S)

Mitigation Measure BIO-1*: Prior to the commencement of grading activities or other ground disturbing activities on the Project site, the Project applicant shall arrange for a*

qualified biologist to conduct a preconstruction survey for western burrowing owls in accordance with SJMSCP requirements. If no owls or owl nests are detected, then construction activities may commence. If burrowing owls or occupied nests are discovered, then the following shall be implemented:

- *During the breeding season (February 1 through September 1) occupied burrows shall not be disturbed and shall be provided with a 75 meter protective buffer until and unless the SJCOG Technical Advisory Committee (TAC), with the concurrence of the Permitting Agencies' representatives on the TAC; or unless a qualified biologist approved by the Permitting Agencies verifies through non-invasive means that either: 1) the birds have not begun egg laying, or 2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. Once the fledglings are capable of independent survival, the burrow can be destroyed. They should only be destroyed by a qualified biologist using passive one-way eviction doors to ensure that owls are not harmed during burrow destruction. Methods for removal of burrows are described in the California Department of Fish and Game's Staff Report on Burrowing Owls (October, 1995).*
- *During the non-breeding season (September 1 through January 31) burrowing owls occupying the Project site should be evicted from the Project site by passive relocation as described in the California Department of Fish and Game's Staff Report on Burrowing Owls (Oct., 1995)*

Implementation of this mitigation shall occur prior to grading or site clearing activities. SJCOG shall be responsible for monitoring and a qualified biologist shall conduct surveys and relocate owls as required.

***Mitigation Measure BIO-2**: Prior to commencement of any grading activities, the Project proponent shall seek coverage under the SJMSCP to mitigate for habitat impacts to covered special status species. Coverage involves compensation for habitat impacts on covered species through payment of development fees for conversion of open space lands that may provide habitat for covered special status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity. In addition, coverage includes incidental take avoidance and minimization measures for species that could be affected as a result of the proposed Project. There are a wide variety of incidental take avoidance and minimization measures contained in the SJMSCP that were developed in consultation with the USFWS, CDFW, and local agencies. The applicability of incidental takes avoidance and minimization measures are determined by SJCOG on a Project basis. The process of obtaining coverage for a Project includes incidental take authorization (permits) under the Endangered Species Act Section 10(a) and California Fish and Game Code Section 2081. The Section 10(a) permit also serves as a special-purpose permit for the incidental take of those species that are also protected under the MBTA. Coverage under the SJMSCP would fully mitigate all habitat impacts on covered special-status species. The SJMSCP includes the implementation of an ongoing Monitoring Plan to ensure success in mitigating the habitat impacts that are covered. The SJMSCP Monitoring Plan includes an Annual Report process,*

Biological Monitoring Plan, SJMSCP Compliance Monitoring Program, and the SJMSCP Adaptive Management Plan SJCOG.

Responses b): No Impact. Riparian natural communities support woody vegetation found along rivers, creeks and streams. Riparian habitat can range from a dense thicket of shrubs to a closed canopy of large mature trees covered by vines. Riparian systems are considered one of the most important natural resources. While small in total area when compared to the state's size, they provide a special value for wildlife habitat.

Over 135 California bird species either completely depend upon riparian habitats or use them preferentially at some stage of their life history. Riparian habitat provides food, nesting habitat, cover, and migration corridors. Another 90 species of mammals, reptiles, invertebrates and amphibians depend on riparian habitat. Riparian habitat also provides riverbank protection, erosion control and improved water quality, as well as numerous recreational and aesthetic values.

There is no riparian habitat or other sensitive natural communities located on the Project site. As such, the proposed Project would have **no impact** on these resources, and no mitigation is required.

Response c): Less than Significant. A wetland is an area that is inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Wetlands are defined by regulatory agencies as having special vegetation, soil, and hydrology characteristics. Hydrology, or water inundation, is a catalyst for the formation of wetlands. Frequent inundation and low oxygen causes chemical changes to the soil properties resulting in what is known as hydric soils. The prevalent vegetation in wetland communities consists of hydrophytic plants, which are adapted to areas that are frequently inundated with water. Hydrophytic plant species have the ability to grow, effectively compete, reproduce, and persist in low oxygen soil conditions.

Below is a list of wetlands that are found in the Tracy planning area:

- Farmed Wetlands: This category of wetlands includes areas that are currently in agricultural uses. This type of area occurs in the northern portion of the Tracy Planning Area.
- Lakes, Ponds and Open Water: This category of wetlands includes both natural and human-made water bodies such as that associated with working landscapes, municipal water facilities and canals, creeks and rivers.
- Seasonal Wetlands: This category of wetlands includes areas that typically fill with water during the wet winter months and then drain enough to become ideal plant habitats throughout the spring and summer. There are numerous seasonal wetlands throughout the Tracy Planning Area.

- Tidal Salt Ponds and Brackish Marsh: This category of wetlands includes areas affected by irregular tidal flooding with generally poor drainage and standing water. There are minimal occurrences along some of the larger river channels in the northern portion of the Tracy Planning Area.

There are no wetlands located on the Project site. Therefore, this is a **less than significant** impact and no mitigation is required.

Response d): Less than Significant. The CNDDB record search did not reveal any documented wildlife corridors or nursery sites on or adjacent to the Project site. Furthermore, field surveys did not reveal any wildlife nursery sites on or adjacent to the Project site. Implementation of the proposed Project would have a **less than significant** impact. No mitigation is necessary.

Responses e), f): Less than Significant with mitigation. The Project site is located within the jurisdiction of the SJMSCP and is located within the Central/Southwest Transition Zone of the SJMSCP. The SJCOG prepared the Plan pursuant to a Memorandum of Understanding adopted by SJCOG, San Joaquin County, the United States Fish and Wildlife Service (USFWS), the CDFW, Caltrans, and the cities of Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton, and Tracy in October 1978. On February 27, 2001, the Plan was unanimously adopted in its entirety by SJCOG. The City of Tracy adopted the Plan on November 6, 2001.

According to Chapter 1 of the SJMSCP, its key purpose is to "provide a strategy for balancing the need to conserve open space and the need to convert open space to non-open space uses, while protecting the region's agricultural economy; preserving landowner property rights; providing for the long-term management of plant, fish and wildlife species, especially those that are currently listed, or may be listed in the future, under the Federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA); providing and maintaining multiple use Open Spaces which contribute to the quality of life of the residents of San Joaquin County; and, accommodating a growing population while minimizing costs to project proponents and society at large."

In addition, the goals and principles of the SJMSCP include the following:

- Provide a County-wide strategy for balancing the need to conserve open space and the need to convert open space to non-open space uses, while protecting the region's agricultural economy.
- Preserve landowner property rights.
- Provide for the long-term management of plant, fish, and wildlife species, especially those that are currently listed, or may be listed in the future, under the ESA or the CESA.
- Provide and maintain multiple-use open spaces, which contribute to the quality of life of the residents of San Joaquin County.
- Accommodate a growing population while minimizing costs to project proponents and society at large.

In addition to providing compensation for conversion of open space to non-open space uses, which affect plant and animal species covered by the SJMSCP, the SJMSCP also provides some compensation to offset impacts of open space conversions on non-wildlife related resources such as recreation, agriculture, scenic values and other beneficial open space uses. Specifically, the SJMSCP compensates for conversions of open space to urban development and the expansion of existing urban boundaries, among other activities, for public and private activities throughout the County and within Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton, and Tracy.

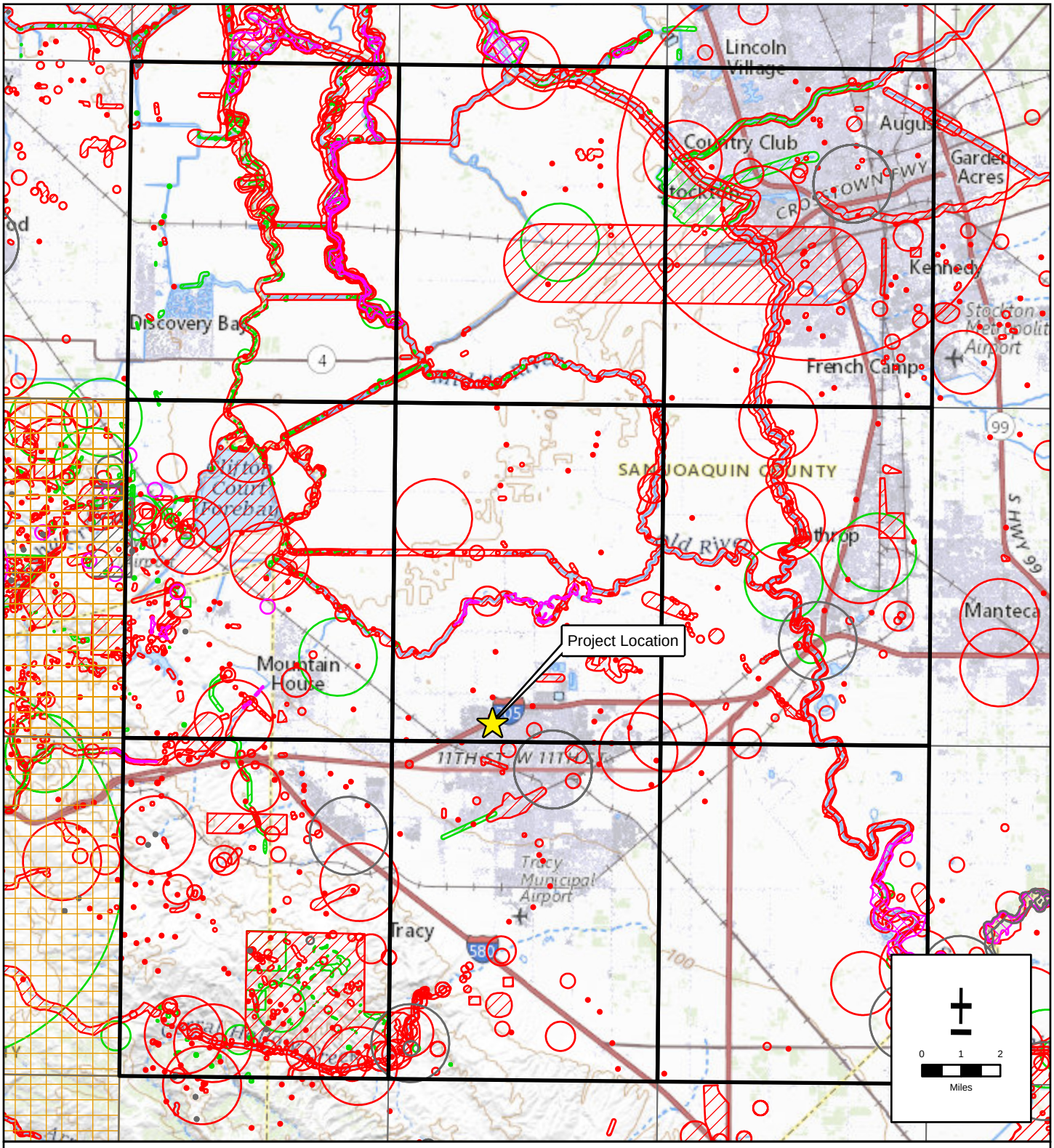
Participation in the SJMSCP is voluntary for both local jurisdictions and project applicants. Only agencies adopting the SJMSCP would be covered by the SJMSCP. Individual project applicants have two options if their project is located in a jurisdiction participating in the SJMSCP: mitigating under the SJMSCP or negotiating directly with the state and/or federal permitting agencies. If a project applicant opts for SJMSCP coverage in a jurisdiction that is participating under the SJMSCP, the following options are available, unless their activities are otherwise exempted: pay the appropriate fee; dedicate, as conservation easements or fee title, habitat lands; purchase approved mitigation bank credits; or, propose an alternative mitigation plan.

Responsibilities of permittees covered by the SJMSCP include collection of fees, maintenance of implementing ordinances/resolutions, conditioning permits (if applicable), and coordinating with the Joint Powers Authority (JPA) for Annual Report accounting. Funds collected for the SJMSCP are to be used for the following: acquiring Preserve lands, enhancing Preserve lands, monitoring and management of Preserve lands in perpetuity, and the administration of the SJMSCP. Because the primary goal of SJMSCP to preserve productive agricultural use that is compatible with SJMSCP's biological goals, most of the SJMSCP's Preserve lands would be acquired through the purchase of easements in which landowners retain ownership of the land and continue to farm the land. These functions are managed by San Joaquin Council of Governments.

As described under Response (a), the proposed Project is subject to participation in the SJMSCP by Mitigation Measure BIO-2. The City of Tracy and the Project applicant shall consult with SJCOG and determine coverage of the Project pursuant to the SJMSCP. Implementation of Mitigation Measure BIO-2 would ensure that the Project complies with the requirements of the SJMSCP, and would not conflict with any applicable habitat conservation plans. With the implementation of Mitigation Measure BIO-2, the Project would have a **less than significant** impact.

MITIGATION MEASURE(S)

Implement Mitigation Measure BIO-2



LEGEND

- Plant (80m)
- Plant (specific)
- Plant (non-specific)
- Plant (circular)
- Animal (80m)
- Animal (specific)
- Animal (non-specific)
- Animal (circular)
- Terrestrial Comm. (specific)
- Terrestrial Comm. (circular)
- Multiple (80m)
- Multiple (specific)
- Multiple (non-specific)
- Multiple (circular)
- Sensitive EO's (Commercial only)

Tracy TRU by Hilton Project

Figure 8. CNDDB 9-quad Map

Sources: ArcGIS Online USGS Topo Map Service; CNDDB version 3/1/2023. Note: the occurrences shown on this map represent the known locations of the species listed here as of the date of this version. There may be additional occurrences or additional species within this area which have not been surveyed and/or mapped. Lack of information in the CNDDB about a species or an area can never be used as proof that no special status species occur in an area. Map date: March 28, 2023

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V. CULTURAL RESOURCES -- WOULD THE PROJECT:

Would the project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section15064.5?		X		
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?		X		
c) Disturb any human remains, including those interred outside of formal cemeteries?		X		

RESPONSES TO CHECKLIST QUESTIONS

Responses a)-c): Less than Significant with Mitigation. The City of Tracy General Plan and subsequent EIR does not identify the site as having prehistoric period cultural resources. Additionally, there are no known unique cultural, historical, paleontological or archeological resources known to occur on, or within the immediate vicinity of the Project site. Furthermore, the site is not designated as a historical resource as defined by Public Resources Code § 21084.1, or listed in, or eligible for listing in the California Register of Historical Resources.

The site has previously been used for agricultural uses. No instances of cultural resources or human remains have been unearthed on the Project site, and site visits did not identify any historical, cultural, paleontological, or archeological resources present on site. Therefore, it is not anticipated that site grading and preparation activities would result in impacts to cultural, historical, archaeological or paleontological resources. There are no known human remains located on the Project site, nor is there evidence to suggest that human remains may be present on the Project site. However, as with most projects in California that involve ground-disturbing activities, there is the potential for discovery of a previously-unknown cultural or historical resource or human remains. This is considered a **potentially significant** impact.

The implementation of the following mitigation measure would require appropriate steps to preserve and/or document any previously undiscovered resources that may be encountered during construction activities, including human remains. Implementation of this measure would reduce this impact to a **less-than-significant** level.

MITIGATION MEASURE(S)

Mitigation Measure CUL-1*: If any prehistoric or historic artifacts, human remains or other indications of archaeological or paleontological resources are found during grading and construction activities, an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, shall be consulted to evaluate the finds and recommend appropriate mitigation measures.*

- *If cultural resources or Native American resources are identified, every effort shall be made to avoid significant cultural resources, with preservation an*

important goal. If significant sites cannot feasibly be avoided, appropriate mitigation measures, such as data recovery excavations or photographic documentation of buildings, shall be undertaken consistent with applicable state and federal regulations.

- *If human remains are discovered, all work shall be halted immediately within 50 meters (165 feet) of the discovery, the County Coroner must be notified, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined to be Native American, the coroner will notify the Native American Heritage Commission, and the procedures outlined in CEQA Section 15064.5(d) and (e) shall be followed.*
- *If any fossils are encountered, there shall be no further disturbance of the area surrounding this find until the materials have been evaluated by a qualified paleontologist, and appropriate treatment measures have been identified.*

VI. ENERGY

Would the project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

Responses to Checklist Questions

Responses a) and b): Appendix G of the State CEQA Guidelines requires consideration of the potentially significant energy implications of a project. CEQA requires mitigation measures to reduce "wasteful, inefficient and unnecessary" energy usage (Public Resources Code Section 21100, subdivision [b][3]). According to Appendix G of the CEQA Guidelines, the means to achieve the goal of conserving energy include decreasing overall energy consumption, decreasing reliance on natural gas and oil, and increasing reliance on renewable energy sources. In particular, the proposed Project would be considered "wasteful, inefficient, and unnecessary" if it were to violate state and federal energy standards and/or result in significant adverse impacts related to Project energy requirements, energy inefficiencies, energy intensiveness of materials, cause significant impacts on local and regional energy supplies or generate requirements for additional capacity, fail to comply with existing energy standards, otherwise result in significant adverse impacts on energy resources, or conflict or create an inconsistency with applicable plan, policy, or regulation.

The amount of energy used at the Project site would directly correlate to the energy consumption (including fuel) used by vehicle trips generated during Project construction, fuel used by off-road construction vehicles during construction, fuel used by vehicles during Project operation, and electricity and other energy usage during Project operation.

Electricity and Natural Gas

The CalEEMod modeling results for the proposed Project estimate annual operational electricity usage at approximately 727,104 kWh/year, and annual natural gas usage at 299,6750 kBTU/year (see Appendix A for further detail).

On-road Vehicles (Operation)

The proposed Project would generate vehicle trips (i.e. passenger vehicles for employees and heavy-duty trucks for hauling) during its operational phase. Requirements to limit the idling of vehicles and equipment would result in fuel savings. Similarly, compliance with applicable State laws and regulations would limit idling and a part of a comprehensive regulatory framework that is implemented by the CARB. A description of Project operational on-road mobile energy usage is provided below.

According to the Traffic Study prepared for the proposed Project (Kimley Horn, 2023), and as described in more detail in Section XVI. Transportation of this IS/MND, the proposed Project would increase total vehicle trips by approximately 623 daily trips. In order to calculate operational on-road vehicle energy usage, De Novo Planning Group used fleet mix data from the CalEEMod (v2022.4.0) output for the proposed Project, and Year 2025 gasoline and diesel MPG (miles per gallon) factors for individual vehicle classes as provided by EMFAC2021, to derive weighted average gasoline and diesel MPG factors for the vehicle fleet as a whole. Based on these calculations, as provided in Appendix B, upon full buildout, the proposed Project would generate operational vehicle trips that would use a total of approximately 120 gallons of gasoline and 20 gallons of diesel per day, or 43,762 gallons of gasoline and 7,135 gallons of diesel per year.

The proposed Project's building would be designed and constructed in accordance with the City's latest adopted energy efficiency standards, which are based on the State's Title 24 Energy Efficiency Standards for Nonresidential Buildings and Green Building Code Standards. These standards include minimum energy efficiency requirements related to building envelope, mechanical systems (e.g., heating, ventilation, and air conditioning [HVAC] and water heating systems), and indoor and outdoor lighting, are widely regarded as the some of the most advanced and stringent building energy efficiency standards in the country. Therefore, building energy consumption would not be considered wasteful, inefficient, or unnecessary.

Moreover, the proposed Project would be required to comply with transportation efficiency standards, as promulgated at the State and federal levels. Thus, transportation fuel consumption would not be wasteful, inefficient, or unnecessary.

On-road Vehicles (Construction)

The proposed Project would also generate on-road vehicle trips during Project construction (from construction workers and vendors travelling to and from the Project site). De Novo Planning Group estimated the vehicle fuel consumed during these trips based on the assumed construction schedule, vehicle trip lengths and number of workers per construction phase as provided by CalEEMod, and Year 2023 gasoline and diesel MPG factors provided by EMFAC2021 (year 2023 factors were used to represent a conservative analysis, as the energy efficiency of construction activities is anticipated to improve over time). For the sake of simplicity and to be conservative, it was assumed that all construction worker light duty passenger cars and truck trips use gasoline as a fuel source, and all medium and heavy-duty vendor trucks use diesel fuel. Table ENERGY-1, below, describes gasoline and diesel fuel consumed during each construction phase (in aggregate). As shown, the vast majority of on-road mobile vehicle fuel used during the construction of the proposed Project would occur during the building construction phase. See Appendix A of this EIR for a detailed accounting of construction on-road vehicle fuel usage estimates.

Table ENERGY-1: Project On-Road Vehicles (Construction) Fuel Consumption

CONSTRUCTION PHASE	# OF DAYS	TOTAL DAILY WORKER TRIPS(A)	TOTAL DAILY VENDOR TRIPS(A)	TOTAL HAULER WORKER TRIPS(A)	TOTAL GALLONS OF GASOLINE FUEL(B)	TOTAL GALLONS OF DIESEL FUEL(B)
Site Preparation	2	8	0	0	10	0
Grading	4	10	0	0	26	2,680
Building Construction	200	41	0	750	6,209	2,923
Paving	10	13	19	0	84	0
Architectural Coatings	10	10	0	0	65	0
Total	**N/A**	**N/A**	**N/A**	**N/A**	**6,394**	**5,603**

NOTE: (A) PROVIDED BY CALEEMOD OUTPUT. (B)SEE APPENDIX A OF THIS EIR FOR FURTHER DETAIL
SOURCE: CALEEMOD (V.2022.4.0); EMFAC2021.

Off-road Equipment (Construction)

Off-road construction equipment would use diesel fuel during the construction phase of the proposed Project. A non-exhaustive list of off-road constructive equipment expected to be used during the construction phase of the proposed Project includes: forklifts, generator sets, tractors, excavators, and dozers. Fuel utilized from off-road equipment is anticipated to be approximately 19,185 MT CO_2e.

State laws and regulations would limit idling from both on-road and off-road diesel-powered equipment and are part of a comprehensive regulatory framework that is implemented by the CARB. Additionally, as a practical matter, it is reasonable to assume that the overall construction schedule and process would be designed to be as efficient as feasible in order to avoid excess monetary costs. For example, equipment and fuel are not typically used wastefully due to the added expense associated with renting the equipment, maintaining it, and fueling it. Therefore, the opportunities for further future efficiency gains during construction are limited. For the foregoing reasons, it is anticipated that the construction phase of the Project would not result in wasteful, inefficient, and unnecessary consumption of energy.

Conclusion

The proposed Project would be in compliance with all applicable federal, state, and local regulations regulating energy usage. For example, statewide measures, including those intended to improve the energy efficiency of the statewide passenger and heavy-duty truck vehicle fleet (e.g. the Pavley Bill and the Low Carbon Fuel Standard) are improving vehicle fuel economies, thereby conserving gasoline and diesel fuel. These energy savings would continue to accrue over time.

As a result, the proposed Project would not result in any significant adverse impacts related to Project energy requirements, energy use inefficiencies, and/or the energy intensiveness of materials by amount and fuel type for each stage of the proposed Project including construction, operations, maintenance, and/or removal. PG&E, the electricity and natural gas provider to the site, maintains sufficient capacity to serve the proposed Project. In addition, PG&E is on its way

to achieving the statewide requirement of 60% of total energy mix generated by eligible renewables by year 2030. As of 2021, PG&E generated approximately 48% of its energy from eligible renewables (PG&E, 2019).[2] The proposed Project would comply with all existing energy standards, including the statewide Title 24 Energy Efficiency Standards, and would not result in significant adverse impacts on energy resources. Therefore, the proposed Project would not result in potentially significant environmental impacts due to inefficient, wasteful, or unnecessary use of energy resources during construction and operation, nor conflict with or construct with a State or local plan for renewable energy or energy efficiency. This is a **less than significant** impact.

[2] *PG&E 2021 POWER MIX. WEBSITE: HTTPS://WWW.PGE.COM/PGE_GLOBAL/COMMON/PDFS/YOUR-ACCOUNT/YOUR-BILL/UNDERSTAND-YOUR-BILL/BILL-INSERTS/2022/1022-POWER-CONTENT-LABEL.PDF*

VII. GEOLOGY AND SOILS -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation*	*Less Than Significant Impact*	*No Impact*
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:			X	
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			X	
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?		X		
iv) Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?		X		
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?		X		
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		

RESPONSES TO CHECKLIST QUESTIONS

Responses a.i), a.ii): Less than Significant. The Project site is located in an area of low to moderate seismicity. No known active faults cross the Project site, and the site is not located within an Alquist-Priolo Earthquake Fault Zone; however, relatively large earthquakes have historically occurred in the Bay Area and along the margins of the Central Valley. Many earthquakes of low magnitude occur every year in California. The nearest earthquake fault zoned as active by the State of California Geological Survey is the Greenville fault, located approximately 11 miles southwest of the site. Figure 9 shows nearby faults in relation to the Project site.

The Tracy area has a low-to-moderate seismic history. The largest recorded measurable magnitude earthquake in Tracy measured 3.9 on the Richter scale. The greatest potential for significant ground shaking in Tracy is believed to be from maximum credible earthquakes occurring on the Calaveras, Hayward, San Andreas, or Greenville faults. Further seismic activity can be expected to continue along the western margin of the Central Valley, and as with all projects in the area, the Project will be designed to accommodate strong earthquake ground shaking, in compliance with the applicable California building code standards.

Other faults capable of producing ground shaking at the site include the San Joaquin fault, 6.7 miles southwest; the Midway fault, 6.9 miles southwest; and the Corral Hollow-Carnegie fault, 10.7 miles southwest of the site. Any one of these faults could generate an earthquake capable of causing strong ground shaking at the subject site. Earthquakes of Moment Magnitude (Mw) 7 and larger have historically occurred in the region and numerous small magnitude earthquakes occur every year.

Since there are no known active faults crossing the Project site and the site is not located within an Earthquake Fault Special Study Zone, the potential for ground rupture at the site is considered low.

An earthquake of moderate to high magnitude generated within the San Francisco Bay Region and along the margins of the central valley could cause considerable ground shaking at the site, similar to that which has occurred in the past. In order to minimize potential damage to the proposed structures caused by groundshaking, all construction would comply with the latest California Building Code standards, as required by the City of Tracy Municipal Code 9.04.030.

Seismic design provisions of current building codes generally prescribe minimum lateral forces, applied statically to the structure, combined with the gravity forces of dead-and-live loads. The code-prescribed lateral forces are generally considered to be substantially smaller than the comparable forces that would be associated with a major earthquake. Therefore, structures should be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse but with some structural as well as nonstructural damage.

Implementation of the California Building Code standards, which include provisions for seismic building designs, would ensure that impacts associated with groundshaking would be **less than significant**. Building new structures for human use would increase the number of people exposed to local and regional seismic hazards. Seismic hazards are a significant risk for most property in California.

The Safety Element of the Tracy General Plan includes several goals, objectives and policies to reduce the risks to the community from earthquakes and other geologic hazards. In particular, the following policies would apply to the Project site:

> **SA-1.1, Policy P1:** Underground utilities, particularly water and natural gas mains, shall be designed to withstand seismic forces.

SA-1.1, Policy P2: Geotechnical reports shall be required for development in areas where potentially serious geologic risks exist. These reports should address the degree of hazard, design parameters for the project based on the hazard, and appropriate mitigation measures.

SA-1.2, Policy P1: All construction in Tracy shall conform to the California Building Code and the Tracy Municipal Code including provisions addressing unreinforced masonry buildings.

The City reviews all proposed development projects for consistency with the General Plan policies and California Building Code provisions identified above. This review occurs throughout the project application review and processing stage, and throughout plan check and building inspection phases prior to the issuance of a certificate of occupancy.

Consistency with the requirements of the California Building Code and the Tracy General Plan policies identified above would ensure that impacts on humans associated with seismic hazards would be **less than significant**. No mitigation is required.

Responses a.iii), c), d): Less than Significant with Mitigation. Liquefaction normally occurs when sites underlain by saturated, loose to medium dense, granular soils are subjected to relatively high ground shaking. During an earthquake, ground shaking may cause certain types of soil deposits to lose shear strength, resulting in ground settlement, oscillation, loss of bearing capacity, landsliding, and the buoyant rise of buried structures. The majority of liquefaction hazards are associated with sandy soils, silty soils of low plasticity, and some gravelly soils. Cohesive soils are generally not considered to be susceptible to liquefaction. In general, liquefaction hazards are most severe within the upper 50 feet of the surface, except where slope faces or deep foundations are present.

Expansive soils are those that undergo volume changes as moisture content fluctuates; swelling substantially when wet or shrinking when dry. Soil expansion can damage structures by cracking foundations, causing settlement and distorting structural elements. Expansion is a typical characteristic of clay-type soils. Expansive soils shrink and swell in volume during changes in moisture content, such as a result of seasonal rain events, and can cause damage to foundations, concrete slabs, roadway improvements, and pavement sections.

Soil expansion is dependent on many factors. The more clayey, critically expansive surface soil and fill materials will be subjected to volume changes during seasonal fluctuations in moisture content. Figure 10 shows the soils within the Project site, and Figure 11 shows the shrink-swell potential of the soils within the site. The soils encountered at the site consist of capay clay, zero to two percent slopes. The capay series consists of very deep, moderately well drained, and firm to very firm soils. Therefore, the potential for liquefaction to occur at the Project site is considered low. However, as shown in Figure 11, the capay clay has a relatively high moisture content, posing a potentially high risk of soil expansion. Implementation of Mitigation Measures GEO-1 and GEO-2 below would bring this impact to **less than significant**.

MITIGATION MEASURE(S)

Mitigation Measure GEO-1*: Prior to the development of the Project site, a subsurface geotechnical investigation must be performed to identify onsite soil conditions and identify any site-specific engineering measures to be implemented during the construction of building foundations and subsurface utilities. The results of the subsurface geotechnical investigation shall be reflected on the Improvements Plans, subject to review and approval by the City's Building Safety and Fire Prevention Division.*

Mitigation Measure GEO-2*: Expansive materials and potentially weak and compressible fills at the site shall be evaluated by a Geotechnical Engineer during the grading plan stage of development. If highly expansive or compressible materials are encountered, special foundation designs and reinforcement, removal and replacement with soil with low to non-expansive characteristics, compaction strategies, or soil treatment options to lower the expansion potential shall be incorporated through requirements imposed by the City's Development Services Department.*

Responses a.iv): Less than Significant. The Project site is relatively flat and there are no major slopes in the vicinity of the Project site. According to the City's General Plan EIR, the landslide risk in Tracy is low in most areas. In the wider Tracy Planning Area, some limited potential for risk exists for grading and construction activities in the foothills and mountain terrain of the upland areas in the southwest. The potential for small scale slope failures along river banks also exists. The Project site is not located in the foothills, mountain terrain, or along a river bank. Additionally, the Project site is essentially flat. As shown in Figure 12, the Project site is not in an area known to have landslide susceptibility. As such, the Project site is exposed to little or no risk associated with landslides. This is a **less than significant** impact and no mitigation is required.

Response b): Less than Significant. During the construction preparation process, existing vegetation would be removed to grade and compact the Project site, as necessary. As construction occurs, these exposed surfaces could be susceptible to erosion from wind and water. Effects from erosion include impacts on water quality and air quality. Exposed soils that are not properly contained or capped increase the potential for increased airborne dust and increased discharge of sediment and other pollutants into nearby stormwater drainage facilities. Risks associated with erosive surface soils can be reduced by using appropriate controls during construction and properly re-vegetating exposed areas. The SJVAPCD's Rule 8021 requires the implementation of various dust control measures during site preparation and construction activities that would reduce the potential for soil erosion and the loss of topsoil. Additionally, the Project would be required to implement various best management practices (BMPs) and a SWPPP that would reduce the potential for disturbed soils and ground surfaces to result in erosion and sediment discharge into adjacent surface waters during construction activities. Compliance with these existing regulations would ensure these impacts are **less than significant**.

Response e): No Impact. The Project site would be served by public wastewater facilities and does not require an alternative wastewater system such as septic tanks. Implementation of the proposed Project would have **no impact** on this environmental issue.

Response f): Less than Significant with Mitigation. The Project site is not expected to contain subsurface paleontological resources, although it is possible. Damage to or destruction of a paleontological resource would be considered a potentially significant impact under local, state, or federal criteria. Implementation of the following mitigation measure would ensure steps would be taken to reduce impacts to paleontological resources in the event that they are discovered during construction. This would ensure that any potentially significant impacts would be reduced to a **less than significant** level regarding this topic.

MITIGATION MEASURE(S)

Mitigation Measure GEO-3: *If paleontological resources are discovered during the course of construction, work shall be halted immediately within 50 meters (165 feet) of the discovery, the City of Tracy or San Joaquin County shall be notified, and a qualified paleontologist shall be retained to determine the significance of the discovery. If the paleontological resource is considered significant, it should be excavated by a qualified paleontologist and given to a local agency, State University, or other applicable institution, where they could be curated and displayed for public education purposes.*

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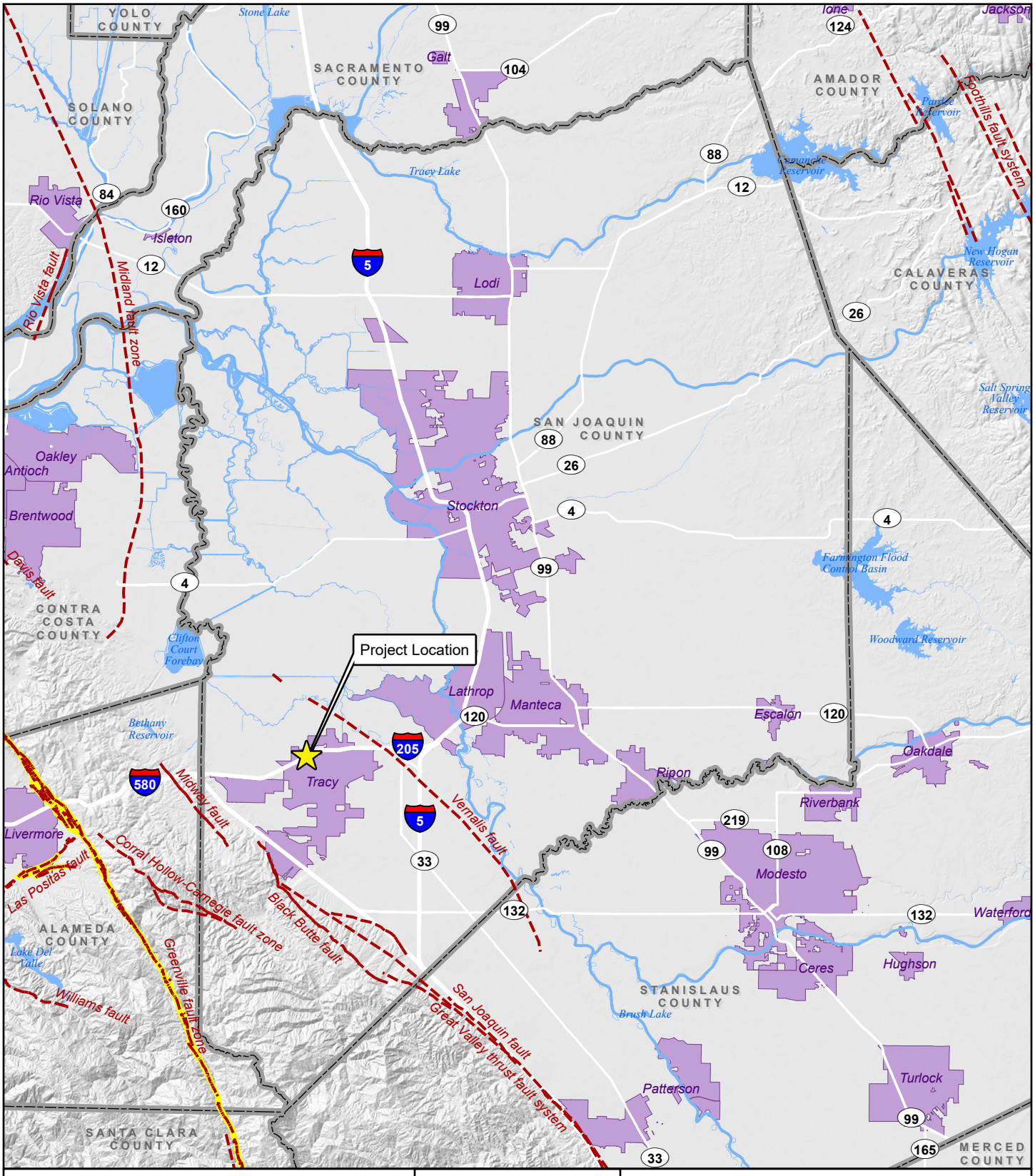

LEGEND

- Incorporated Area
- County Boundary
- Quaternary Fault
- Alquist Priolo Fault Zone

N

0 2½ 5

Miles

Tracy TRU by Hilton Project

Figure 9. Earthquake Fault Map

Sources: USGS. California State GeoPortal; San Joaquin County GIS. Map date: October 12, 2022.

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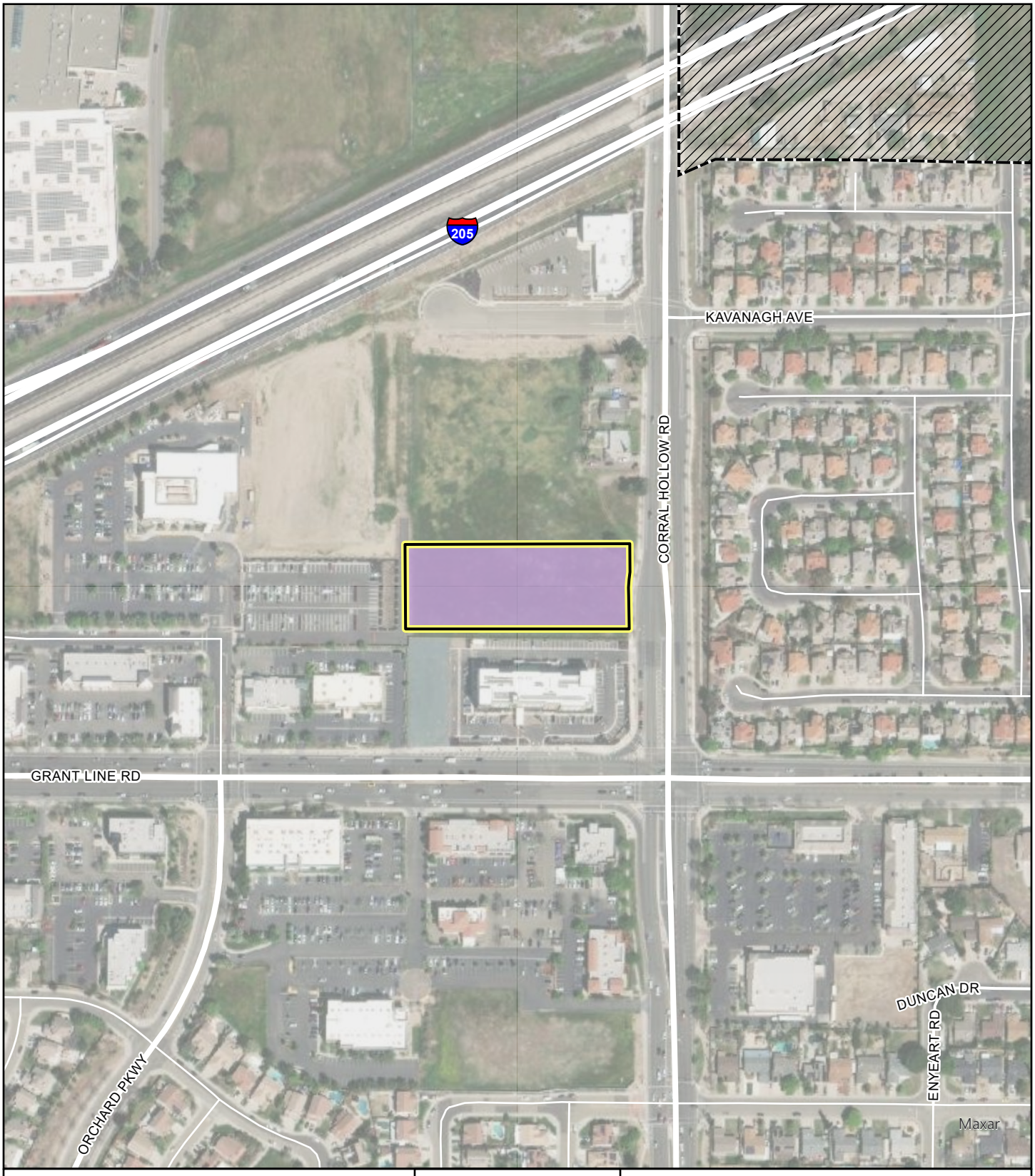

LEGEND

- Project Location
- Tracy City Limits
- Tracy SOI

Soil Types

- Capay clay, 0 to 1 percent slopes, MLRA 17 (1.98 ac)

Sources: NRCS Soil Survey; San Joaquin County GIS. Map date: October 12, 2022.

N

0 100 200

Feet

Tracy TRU by Hilton Project

Figure 10. Project Site Soils

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LEGEND

- Project Location
- Tracy City Limits
- Tracy SOI

Shrink-Swell Potential

- Very High

Sources: NRCS Soil Survey; San Joaquin County GIS. Map date: October 12, 2022.

N

0 100 200

Feet

Tracy TRU by Hilton Project

Figure 11. Shrink-Swell Potential

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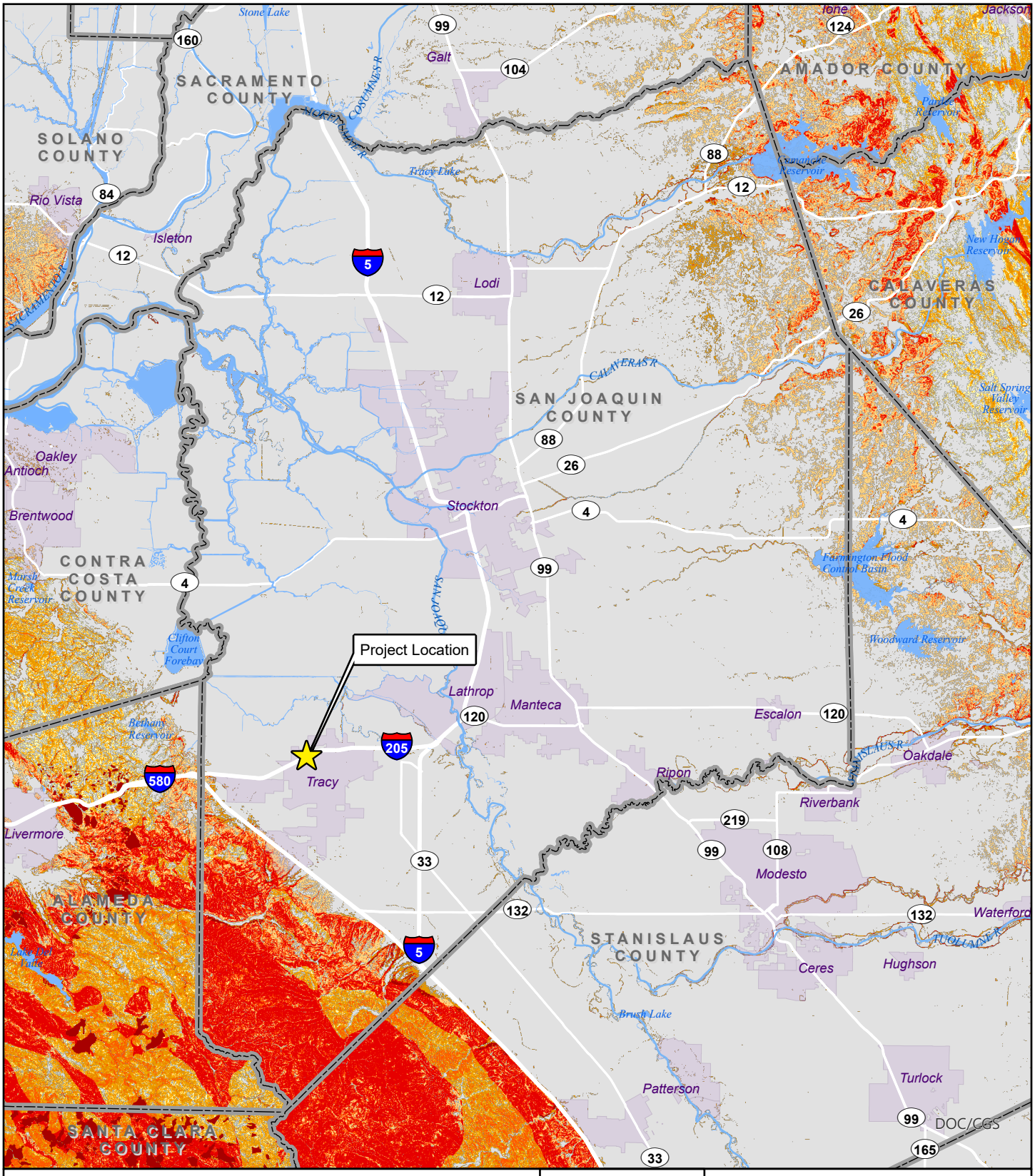

LEGEND

Incorporated Area

County Boundary

Landslide Susceptibility Classes

0	VII
III	VIII
V	IX
VI	X

Sources: California Department of Conservation Map Sheet 58. San Joaquin County GIS. Map date: October 12, 2022.

N

0 2½ 5

Miles

Tracy TRU by Hilton Project

Figure 12. Landslide Susceptibility

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VIII. GREENHOUSE GAS EMISSIONS -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses?			X	

BACKGROUND

Various gases in the Earth's atmosphere, classified as atmospheric greenhouse gases (GHGs), play a critical role in determining the Earth's surface temperature. Solar radiation enters Earth's atmosphere from space, and a portion of the radiation is absorbed by the Earth's surface. The Earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation.

Naturally occurring GHGs include water vapor (H_2O), carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and ozone (O_3). Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also GHGs, but they are, for the most part, solely a product of industrial activities. Although the direct GHGs, including CO_2, CH_4, and N_2O, occur naturally in the atmosphere, human activities have changed their atmospheric concentrations. From the pre-industrial era (i.e., ending about 1750) to 2011, concentrations of these three GHGs have increased globally by 40, 150, and 20 percent, respectively (IPCC, 2013).

Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), ozone (O_3), water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs).

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2018, accounting for 41% of total GHG emissions in the state. This category was followed by the industrial sector (24%), the electricity generation sector (including both in-state and out of-state sources) (15%) and the agriculture and forestry sector (8%) (California Energy Commission, 2021).

As the name implies, global climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern, respectively. California produced approximately 425 million gross metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2018 (California Energy Commission, 2021). Given that the

U.S. EPA estimates that worldwide emissions from human activities totaled nearly 46 billion gross metric tons of carbon dioxide equivalents ($BMTCO_2e$) in 2010, California's incremental contribution to global GHGs is approximately 2% (U.S. EPA, 2014).

Carbon dioxide equivalents are a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential of a GHG, is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

RESPONSES TO CHECKLIST QUESTIONS

Response a) and b): Less than Significant. Existing science is inadequate to support quantification of impacts that project specific GHG emissions have on global climatic change. This is readily understood when one considers that global climatic change is the result of the sum total of GHG emissions, both man-made and natural that occurred in the past; that is occurring now; and will occur in the future. The effects of project specific GHG emissions are cumulative, and unless reduced or mitigated, their incremental contribution to global climatic change could be considered significant.

The SJVAPCD's Guidance for Assessing and Mitigating Air Quality Impacts (SJVAPCD, 2015) provides an approach to assessing a project's impacts on greenhouse gas emissions by evaluating the project's emissions to the "reduction targets" established in the CARB's AB 32 Scoping Plan. For instance, the SJVACD's guidance recommends that projects should demonstrate that "*project specific GHG emissions would be reduced or mitigated by at least 29%, compared to Business as Usual (BAU), including GHG emission reductions achieved since the 2002-2004 baseline period, consistent with GHG emission reduction targets established in ARB's AB 32 Scoping Plan. Projects achieving at least a 29% GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG*."

Subsequent to the SJVAPCD's approval of the *Final Draft Guidance for Assessing and Mitigating Air Quality Impacts* (SJVAPCD 2015), the California Supreme Court issued an opinion that affects the conclusions that should/should not be drawn from a GHG emissions analysis that is based on consistency with the AB 32 Scoping Plan. More specifically, in *Center for Biological Diversity v. California Department of Fish and Wildlife*, the Court ruled that showing a "project-level reduction" that meets or exceeds the Scoping Plan's overall statewide GHG reduction goal is not necessarily sufficient to show that the project's GHG impacts will be adequately mitigated: "*the Scoping Plan nowhere related that statewide level of reduction effort to the percentage of reduction that would or should be required from individual projects*..." According to the Court, the lead agency cannot simply assume that the overall level of effort required to achieve the statewide goal for emissions reductions will suffice for a specific project.

Given this Court decision, reliance on a 29 percent GHG emissions reduction from projected BAU levels compared to the project's estimated 2020 levels as recommended in the SJVAPCD's

guidance documents is not an appropriate basis for an impact conclusion in the MND. Given that the SJVAPCD staff has concluded that "*existing science is inadequate to support quantification of impacts that project specific GHG emissions have on global climatic change,*" this MND instead relies on consistency with the local reduction strategies contained within the latest version of the CARB's Scoping Plan policies, and the policies contained within the SJCOG's 2022 RTP/SCS.

The approach still relies on the Appendix G of the CEQA Guidelines thresholds which indicate that climate change-related impacts are considered significant if implementation of the proposed Project would do any of the following:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

These two CEQA Appendix G threshold questions are provided within the Initial Study checklist and are the thresholds used for the subsequent analysis. The focus of the analysis is on the Project's consistency with the 2022 Scoping Plan policies and the policies contained within the SJCOG's 2022 RTP/SCS.

Project Greenhouse Gas Emissions

The proposed Project would generate GHGs during the construction and operational phases of the proposed Project. The primary source of construction-related GHGs from the proposed Project would result from emissions of CO_2 associated with the construction of the proposed Project, and worker vehicle trips. The proposed Project would require limited grading, and would also include site preparation, building construction, architectural coating, and paving phases. Sources of GHGs during Project operation would include CO_2 associated with operational vehicle trips and on-site energy usage (e.g. electricity). Other sources of GHG emissions would be minimal.

Table GHG-1 provides the estimated GHG emissions that would be generated during Project construction and operation.

Table GHG-1: Project Mitigated Construction and Operational GHG Emissions (metric tons/year)

YEAR	*CO_2E*
Construction	
Maximum Annual	163
Operation	
Annual	693.5

SOURCE: CALEEMOD, V.2022.4.0

Project Consistency with the 2022 Scoping Plan Policies

Table GHG-2, below provides a consistency analysis of the relevant 2022 Scoping Plan Policies in comparison to the proposed Project. The 2030 goal was codified under SB 32 and is addressed by the 2022 Scoping Plan. The new plan provides a strategy that is capable of reaching the SB 32

target if the measures included in the plan are implemented and achieve reductions within the ranges expected. Under the Scoping Plan Update, local government plays a supporting role through its land use authority and control over local transportation infrastructure. SB 375 and AB 32 is implemented with the SJCOG RTP/SCS. The RTP/SCS envisions an increase in development density that would encourage fewer and shorter trips and more trips by transit, walking, and bicycling in amounts sufficient to achieve the SB 375 targets. The 2022 Scoping Plan Update includes the strategy that the State intends to pursue to achieve the 2030 targets of Executive Order S-3-05 and SB 32.

TABLE GHG-2: PROJECT CONSISTENCY WITH THE 2022 SCOPING PLAN

SCOPING PLAN MEASURE	*PROJECT CONSISTENCY*
SCAQMD Rule 445 (Wood Burning Devices): Restricts the installation of wood-burning devices in new development.	Mandatory Compliance. Approximately 15 percent of California's major anthropogenic sources of black carbon include fireplaces and woodstoves. The Project would not include hearths (woodstove and fireplaces) as mandated by this rule.
California Renewables Portfolio Standard, Senate Bill 350 (SB 350) and Senate Bill 100 (SB 100): Increases the proportion of electricity from renewable sources to 33 percent renewable power by 2020. SB 350 requires 50 percent by 2030. SB 100 requires 44 percent by 2024, 52 percent by 2027, and 60 percent by 2030. It also requires the State Energy Resources Conservation and Development Commission to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.	No Conflict. The Project would utilize electricity provided by Pacific Gas & Electric (PG&E), which is required to meet the 2020, 2030, 2045, and 2050 performance standards. In 2021, 48 percent of PG&E's electricity came from renewable resources.[1] By 2030 PG&E plans to achieve over 60 percent carbon-free energy.
All Electric Appliances for New Residential and Commercial Buildings (AB 197): All electric appliances beginning 2026 (residential) and 2029 (commercial), contributing to 6 million heat pumps installed statewide by 2030.	Mandatory Compliance. Project-specific plans would be required to demonstrate that only all electric appliances would be installed for residential land uses starting in 2026, and for commercial uses starting in 2029, consistent with this requirement.
California Code of Regulations, Title 24, Building Standards Code: Requires compliance with energy efficiency standards for residential and nonresidential buildings.	Mandatory Compliance. Future development associated with Project implementation would be required to meet the applicable requirements of the 2022 Title 24 Building Energy Efficiency Standards, including installation of rooftop solar panels and additional CALGreen requirements (see discussion under CALGreen Code requirements below).
California Green Building Standards (CALGreen) Code Requirements: All bathroom exhaust fans are required to be ENERGY STAR compliant.	Mandatory Compliance. Project-specific construction plans would be required to demonstrate that energy efficiency appliances, including bathroom exhaust fans, and equipment are ENERGY STAR compliant.

SCOPING PLAN MEASURE	*PROJECT CONSISTENCY*
California Green Building Standards (CALGreen) Code Requirements: HVAC system designs are required to meet American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) standards.	Mandatory Compliance. Project-specific construction plans would be required to demonstrate that the HVAC system meets the ASHRAE standards.
California Green Building Standards (CALGreen) Code Requirements: Air filtration systems are required to meet a minimum efficiency reporting value (MERV) 8 or higher.	Mandatory Compliance. Specific development projects would be required to install air filtration systems (MERV 8 or higher) as part of its compliance with the 2022 Title 24 Building Energy Efficiency Standards.
California Green Building Standards (CALGreen) Code Requirements: Refrigerants used in newly installed HVAC systems shall not contain any chlorofluorocarbons.	Mandatory Compliance. Specific development projects would be required to meet this requirement as part of its compliance with the CALGreen Code.
California Green Building Standards (CALGreen) Code Requirements: Parking spaces shall be designed for carpool or alternative fueled vehicles. Up to eight percent of total parking spaces is required for such vehicles.	Mandatory Compliance. Specific development projects would be required to meet this requirement as part of its compliance the CALGreen Code.
Mobile Source Strategy (Cleaner Technology and Fuels): Reduce GHGs and other pollutants from the transportation sector through transition to zero-emission and low-emission vehicles, cleaner transit systems, and reduction of vehicle miles traveled.	Consistent. The Project would be consistent with this strategy by supporting the use of zero-emission and low-emission vehicles; refer to CALGreen Code discussion above.
Senate Bill (SB) 375: SB 375 establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions. Under SB 375, CARB is required, in consultation with the State's Metropolitan Planning Organizations, to set regional GHG reduction targets for the passenger vehicle and light-duty truck sector for 2020 and 2035.	Consistent. As demonstrated in Table GHG-3, the Project would comply with the San Joaquin Council of Governments (SJCOG) 2022 RTP/SCS, and therefore, the Project would be consistent with SB 375.
CCR, Title 24, Building Standards Code: Title 24 includes water efficiency requirements for new residential and non- residential uses.	Mandatory Compliance. Refer to the discussion under 2022 Title 24 Building Standards Code and CALGreen Code, above.
Water Conservation Act of 2009 (Senate Bill X7-7): The Water Conservation Act of 2009 sets an overall goal of reducing per capita urban water use by 20 percent by December 31, 2020. Each urban retail water supplier shall develop water use targets to meet this goal. This is an implementing measure of the Water Sector of the AB 32 Scoping Plan. Reduction in water consumption directly reduces the energy necessary and the associated emissions to convene, treat, and distribute the water; it also reduces emissions from wastewater treatment.	Consistent. Refer to the discussion under 2022 Title 24 Building Standards Code and CALGreen Code, above.

SCOPING PLAN MEASURE	*PROJECT CONSISTENCY*
California Integrated Waste Management Act (IWMA) of 1989 and Assembly Bill (AB) 341: The IWMA mandates that State agencies develop and implement an integrated waste management plan which outlines the steps to divert at least 50 percent of solid waste from disposal facilities. AB 341 directs the California Department of Resources Recycling and Recovery (CalRecycle) to develop and adopt regulations for mandatory commercial recycling and sets a Statewide goal for 75 percent disposal reduction by the year 2020.	Mandatory Compliance. The Project would be required to comply with AB 341 which requires multifamily residential dwelling of five units or more to arrange for recycling services. This would reduce the overall amount of solid waste disposed of at landfills. The decrease in solid waste would in return decrease the amount of methane released from decomposing solid waste.

[1]*PG&E 2021 POWER MIX. WEBSITE: HTTPS://WWW.PGE.COM/PGE_GLOBAL/COMMON/PDFS/YOUR-ACCOUNT/YOUR-BILL/UNDERSTAND-YOUR-BILL/BILL-INSERTS/2022/1022-POWER-CONTENT-LABEL.PDF*
SOURCE: CALIFORNIA AIR RESOURCES BOARD. 2022. FINAL 2022 SCOPING PLAN FOR ACHIEVING CARBON NEUTRALITY. WEBSITE: HTTPS://WW2.ARB.CA.GOV/SITES/DEFAULT/FILES/2022-12/2022-SP.PDF

Project Consistency with SJCOG's RTP/SCS

The proposed Project is analyzed for consistency with the strategies contained in the latest adopted SJCOG RTP/SCS (i.e. SJCOG's 2022 RTP/SCS). With the passage of SB 375 in 2008, metropolitan planning organizations were required to develop an SCS, which must demonstrate an ambitious, yet achievable, approach to how land use development and transportation can work together to meet greenhouse gas emission reduction targets for cars and light trucks. These targets, set by the California Air Resources Board, call for the region to reduce per capita emissions. Table GHG-3 below provides this consistency analysis.

TABLE GHG-3: PROJECT CONSISTENCY WITH THE SJCOG'S 2022 RTP/SCS

RTP/SCS POLICY	*PROJECT CONSISTENCY*
Policy 1: Enhance the Environment for Existing and Future Generations and Conserve Energy	**Consistent**. The proposed Project would meet the requirements of Title 24 for energy efficient design.
Policy 2: Maximize Mobility and Accessibility	**Consistent**. The proposed Project is compatible to the surrounding area. The proposed Project's location would be easily accessible from the surrounding area.
Policy 3: Increase Safety and Security	**Consistent**. The proposed Project is along Corral Hollow Road, in a safe and accessible location.
Policy 4: Preserve the Efficiency of the Existing Transportation System	**Consistent**. The proposed Project will facilitate movement in the Tracy area and thereby increasing the efficiency of the existing transportation system.
Policy 5: Support Economic Vitality	**Consistent**. The proposed Project improves access to a key strategic economic center, promotes the safe and efficient movement of goods by truck, and supports the implementation of transportation improvements adjacent to the Project site (since the Project would pay its fair share of traffic improvements).
Policy 6: Promote Interagency Coordination and Public Participation for Transportation Decision-Making and Planning Efforts	**Not Applicable**. The proposed Project is not a transportation Project.
Policy 7: Maximize Cost-Effectiveness	**Consistent**. The proposed Project is located in an area that has been planned for in the City's General Plan for commercial uses such as the proposed Project. Moreover, the proposed Project utilizes existing transportation corridors.

RTP/SCS POLICY	*PROJECT CONSISTENCY*
Policy 8: Improve the Quality of Life for Residents	**Consistent**. The proposed Project implements a commercial Project in an area that has been planned for in the General Plan for commercial land uses. Therefore, the proposed Project avoids being sited in an area that would be highly sensitive to the physical environmental impacts associated with the proposed Project, thereby maintaining quality of life for residents in the City of Tracy and the region.

SOURCE: SAN JOAQUIN COUNCIL OF GOVERNMENTS (SJCOG). 2022. 2022 REGIONAL TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY (RTP/SCS). AUGUST 5, 2022. WEBSITE: HTTPS://WWW.SJCOG.ORG/608/ADOPTED-2022-RTPSCS-PLAN. ACCESSED MARCH 21, 2023.

Conclusion

Overall, the proposed Project would be consistent with the policies within the CARB's 2022 Scoping Plan and the SJCOG's latest RTP/SCS. Therefore, the proposed Project would not generate a significant cumulative impact to GHGs. The proposed Project would not generate GHG emissions that would have a significant impact on the environment or conflict with any applicable plans, policies, or regulations. Therefore, impacts related to greenhouse gases are **less than significant**.

IX. HAZARDS AND HAZARDOUS MATERIALS -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?		X		
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?		X		
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			X	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?				X
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			X	

RESPONSES TO CHECKLIST QUESTIONS

Responses a), b): Less than Significant with Mitigation. The proposed Project would place hotel uses in an area of the City that currently contains residential and commercial uses. Like most agricultural and farming operations in the Central Valley, agricultural practices in the area have used agricultural chemicals including pesticides and herbicides as a standard practice. Although no contaminated soils have been identified on the Project site or the vicinity above applicable levels, residual concentrations of pesticides may be present in soil as a result of historic agricultural application and storage. Continuous spraying of crops over many years can potentially result in a residual buildup of pesticides, in farm soils. Of highest concern relative to agrichemicals are chlorinated herbicides, organophosphate pesticides, and organochlorine pesticides, such as such as Mecoprop (MCPP), Dinoseb, chlordane, dichloro-diphenyltrichloroethane (DDT), and dichloro-diphenyl-dichloroethylene (DDE). There are no records of soil contamination on the Project site.

The proposed commercial land uses do not routinely transport, use, or dispose of hazardous materials, or present a reasonably foreseeable release of hazardous materials, with the exception of common hazardous materials such as household cleaners, paint, etc. The operational phase of the proposed Project does not pose a significant hazard to the public or the environment.

Onsite reconnaissance and historical records indicate that there are no known underground storage tanks or pipelines located on the Project site that contain hazardous materials. Therefore, the disturbance of such items during construction activities is unlikely. Construction equipment and materials would likely require the use of petroleum based products (oil, gasoline, diesel fuel), and a variety of common chemicals including paints, cleaners, and solvents. Transportation, storage, use, and disposal of hazardous materials during construction activities would be required to comply with applicable federal, state, and local statutes and regulations. Compliance would ensure that human health and the environment are not exposed to hazardous materials.

Mitigation Measure HAZ-1 presented below require a Soils Management Plan (SMP) to be submitted and approved by the San Joaquin County Department of Environmental Health prior to the issuance of a grading permit. The SMP will establish management practices for handling hazardous materials, including fuels, paints, cleaners, solvents, etc., during construction. In addition, the Project applicant would be statutorily required to implement a SWPPP during construction activities, which would prevent any contaminated runoff from leaving the Project site. Further, Mitigation Measure HAZ-2 requires submittal of a Hazardous Materials Business Plan. Therefore, the proposed Project would have a **less than significant** impact relative to this issue.

MITIGATION MEASURE(S)

Mitigation Measure HAZ-1*: A Soils Management Plan (SMP) shall be submitted and approved by the San Joaquin County Department of Environmental Health prior to the issuance of a grading permit. The SMP shall establish management practices for handling hazardous materials, including fuels, paints, cleaners, solvents, etc., during construction. The approved SMP shall be posted and maintained onsite during construction activities and all construction personnel shall acknowledge that they have reviewed and understand the plan.*

Mitigation Measure HAZ-2*: Prior to bringing hazardous materials onsite, the applicant shall submit a Hazardous Materials Business Plan (HMBP) to San Joaquin County Environmental Health Division (CUPA) for review and approval. If during the construction process the applicant or his subcontractors generates hazardous waste, the applicant must register with the CUPA as a generator of hazardous waste, obtain an EPA ID# and accumulate, ship and dispose of the hazardous waste per Health and Safety Code Ch. 6.5. (California Hazardous Waste Control Law).*

Response c): No Impact. The Project site is not located within ¼ mile of an existing school. Jacobson Elementary School is located approximately 0.27 miles east of the Project site. Therefore, **no impact** would occur as a result of the proposed Project.

Response d): Less than Significant. According to the California Department of Toxic Substances Control (DTSC) there are no Federal Superfund Sites, State Response Sites, or Voluntary Cleanup

Sites on, or in the near vicinity of the Project site. The Project site is not included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5. The nearest investigation sites include:

> ***Quality Cleaners, Tracy*** (site #60002170). This site is a strip mall that contains Quality Dry Cleaners. The site is a voluntary cleanup site and is active as of March 27, 2015. The site was investigated and had limited soil, indoor air, and soil samples taken. PDT/TCE has been found in the groundwater and indoor air.
>
> ***Old Valley Pipeline (Laurelbrook)*** (site #37860005). From the early 1900's to the late 1950's, the Old Valley Pipeline was used by Standard Oil Company (now Chevron) to transport heavy petroleum (crude oil) from Bakersfield to Richmond. The site is a voluntary cleanup site and was referred to the Regional Water Quality Control Board as of December 9, 2015. A Voluntary Cleanup Agreement dated October 23, 2002 outlined site characterization and human health activities. The site characteristic activities are ongoing.

Therefore, implementation of the proposed Project would result in a **less than significant** impact relative to this environmental topic.

Response e): No Impact. The Project is not located within the airport land use plan area for any airport, including for the Tracy Municipal Airport, which is located approximately 4.6 miles south of the Project site. Therefore, implementation of the proposed Project would have **no impact** relative to this topic.

Response f): Less than Significant. The Project site currently connects to an existing network of City streets. The proposed roadway circulation improvements would allow for greater emergency access relative to existing conditions. The Project includes new connections to the adjacent Home2Suites Hotel, and would stub roadway connections to adjacent future developments to the north and west. The Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, impacts from Project implementation would be considered **less than significant** relative to this topic.

Response g): Less than Significant. The risk of wildfire is related to a variety of parameters, including fuel loading (vegetation), fire weather (winds, temperatures, humidity levels and fuel moisture contents) and topography (degree of slope). Steep slopes contribute to fire hazard by intensifying the effects of wind and making fire suppression difficult. Fuels such as grass are highly flammable because they have a high surface area to mass ratio and require less heat to reach the ignition point. The County has areas with an abundance of flashy fuels (i.e. grassland) in the foothill areas of the County. The Project would not result in development of structures or housing which would subject residents, visitors, or workers to long-term wildfire danger. Therefore, impacts from Project implementation would be considered **less than significant** relative to this topic.

X. HYDROLOGY AND WATER QUALITY -- WOULD THE PROJECT:

Would the project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:			X	
(i) Result in substantial erosion or siltation on- or off-site;			X	
(ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;			X	
(iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or			X	
(iv) Impede or redirect flood flows?			X	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	

RESPONSES TO CHECKLIST QUESTIONS

Responses a): Less than Significant. The proposed Project does not contain any drainage connectivity to Waters of the US. A Stormwater Runoff Management Technical Memorandum on January 4, 2023 (as provided in Appendix F), which identifies how the proposed Project would mitigate for potential discharges on and near the Project site as well as further downstream. The proposed Project will not result in intensification of land uses, or the addition of structures or uses that would differ from the current General Plan. In order to ensure that stormwater runoff from the Project site does not adversely increase pollutant levels in adjacent surface waters and stormwater conveyance infrastructure, the application of BMPs to effectively reduce pollutants from stormwater leaving the site during both the construction and operational phases of the Project are required. As noted in the Project description, a SWPPP would be required to be approved prior to construction activities pursuant to the Clean Water Act.

Through compliance with the NPDES permit requirements, and compliance with the SWPPP, the proposed Project would not result in a violation of any water quality standards or waste discharge requirements. Therefore, through compliance with the NPDES, and SWPPP requirements, the proposed Project would result in a **less than significant** impact relative to this topic.

Responses b): Less than Significant. The proposed Project would not result in the construction of new groundwater wells, nor would it increase existing levels of groundwater pumping. The proposed Project would be served by the City's municipal water system. The City of Tracy uses several water sources, including the US Bureau of Reclamation, the South County Water Supply Project (SCWSP), and groundwater. As described in greater detail in the Utilities Section of this document, the City has adequate water supplies to serve the proposed Project without increasing the current rate of groundwater extraction.

Groundwater recharge occurs primarily through percolation of surface waters through the soil and into the groundwater basin. The addition of significant areas of impervious surfaces (such as roads, parking lots, buildings, etc.) can interfere with this natural groundwater recharge process. Upon full Project buildout, most of the Project site would be covered in impervious surfaces, which would limit the potential for groundwater percolation to occur on the Project site. However, given the relatively large size of the groundwater basin in the Tracy area, the areas of impervious surfaces added as a result of Project implementation will not adversely affect the recharge capabilities of the local groundwater basin. The proposed Project would result in **less than significant** impacts related to depletion of groundwater supplies and interference with groundwater recharge. No mitigation is required.

Responses c.i)-c.iv): The proposed Project would not alter a stream or river. The implementation of the proposed Project would result in additional impervious surfaces. As a standard practice, the City requires post-Project runoff to be equal to or less than pre-Project runoff, which would ensure that the proposed Project would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

Additionally, the Project is subject to the requirements of Chapter 11.34 of the Tracy Municipal Code – Stormwater Management and Discharge Control. The purpose of this Chapter is to *"Protect and promote the health, safety and general welfare of the citizens of the City by controlling non-stormwater discharges to the stormwater conveyance system, by eliminating discharges to the stormwater conveyance system from spills, dumping, or disposal of materials other than stormwater, and by reducing pollutants in urban stormwater discharges to the maximum extent practicable."*

This chapter is intended to assist in the protection and enhancement of the water quality of watercourses, water bodies, and wetlands in a manner pursuant to and consistent with the Federal Water Pollution Control Act (Clean Water Act, 33 USC Section 1251 et seq.), Porter-Cologne Water Quality Control Act (California Water Code Section 13000 et seq.) and NPDES Permit No. CAS000004, as such permit is amended and/or renewed.

New projects in the City of Tracy are required to provide site-specific storm drainage solutions and improvements that are consistent with the overall storm drainage infrastructure approach presented in the 2012 City of Tracy Citywide Storm Drainage Master Plan. Prior to approval of the improvement plans, a detailed storm drainage infrastructure plan shall be coordinated with the City of Tracy Development Services Department and Utilities Department for review and approval. The proposed Project's storm drainage infrastructure plans must demonstrate adequate infrastructure capacity to collect and direct all stormwater generated on the Project site to the existing stormwater conveyance system and demonstrate that the proposed Project would not result in on- or off-site flooding impacts.

In order to ensure that stormwater runoff from the Project site does not adversely increase pollutant levels in adjacent surface waters and stormwater conveyance infrastructure, or otherwise degrade water quality, a SWPPP would be required. The SWPPP would require the application of BMPs to effectively reduce pollutants from stormwater leaving the site, which would ensure that stormwater runoff does not adversely increase pollutant levels and would reduce the potential for disturbed soils and ground surfaces to result in erosion and sediment discharge into adjacent surface waters during construction and operational phases of the Project.

As noted above, the City requires post-Project runoff to be equal to or less than pre-Project runoff, which would ensure that the proposed Project would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site. Additionally, a Stormwater Runoff Management Technical Memorandum on January 4, 2023 (as provided in Appendix F), which identifies how the proposed Project would mitigate for potential discharges on and near the Project site as well as further downstream. The Technical Memorandum includes four recommendations:

1. The Project either should be conditioned to demonstrate to the satisfaction of the City Engineer that infiltration is feasible and that the concept shown on the Project's Preliminary Plan meets the requirements of the Multi-Agency Post Construction Stormwater Standards Manual, otherwise, the applicant must provide an alternative drainage and stormwater quality treatment configuration that meets the City's Design Standards.
2. It should be noted in the Project Conditions of Approval that a stormwater pump system and flow-through planter configuration will be required in order to meet the City's Design Standards unless the applicant demonstrates to the satisfaction of the City Engineer that the configuration shown on the Preliminary Plans (or an alternative configuration) meets all of the applicable requirements.
3. Appropriate calculations will need to be provided with the Project's Design Plans in order to demonstrate that the hydraulic grade lines on the Project will meet the drainage constraints.
4. The Project should be conditioned to provide a maintenance plan for the site drainage system and to maintain the system in perpetuity.

According to the City,[3] storm drain issues identified in the Technical Memorandum have been resolved and the recommendations in the Memorandum will be City conditions of approval for the Project.

Overall, impacts from Project implementation would be reduced to a **less than significant** level relative to this topic.

Response d): The Project site is not within a 100-year or 200-year flood zone as delineated by FEMA, as provided in Figure 13. Additionally, the Project site is not within a tsunami or seiche zone. Further, the Project site is not within a dam inundation area, as provided in Figure 14. Development of the proposed Project would not place housing or structures in a flood hazard area. As a result, the proposed Project would have a **less than significant** impact relative to this topic.

Response e): The Water Quality Control Plan for the Central Valley Region and the 2014 Eastern San Joaquin Integrated Water Resources Master Plan (IRWMP) are the two guiding documents for water quality and sustainable groundwater management in the Project area. Consistency with the two plans is discussed below.

Water Quality Control Plan for the Central Valley Region

The Water Quality Control Plan for the Central Valley Region (Basin Plan) includes a summary of beneficial water uses, water quality objectives needed to protect the identified beneficial uses, and implementation measures. The Basin Plan establishes water quality standards for all the ground and surface waters of the region. The RWQCB regulates waste discharges to minimize and control their effects on the quality of the region's ground and surface water. Permits are issued under a number of programs and authorities. The terms and conditions of these discharge permits are enforced through a variety of technical, administrative, and legal means. Water quality problems in the region are listed in the Basin Plan, along with the causes, where known.

As discussed above, impacts related to water quality during construction and operation would be less than significant with implementation of the four recommendations in the Technical Memorandum and the Project-specific SWPPP. The proposed Project would create new impervious surfaces along Corral Hollow Road. The long-term operations of the proposed Project would not result in long-term impacts to surface water quality from urban stormwater runoff.

2014 Eastern San Joaquin IRWMP

The 2014 Eastern San Joaquin IRWMP defines and integrates key water management strategies to establish protocols and courses of action to implement the Eastern San Joaquin Integrated Conjunctive Use Program. The 2014 Eastern San Joaquin IRWMP is an update and expansion of the 2007 IRWMP prepared for the Eastern San Joaquin Region. There has been significant progress toward implementing the goal of improving the sustainability and reliability of water supplies in the Region, but the process is ongoing and as yet incomplete. The IWRMP does not

[3] Personal communication with Alan Bell, Senior Planner, City of Tracy, March 21, 2023.

include requirements for individual projects, such as the proposed Project. Instead, the IWRMP outlines projects to be carried out which achieve regional goals, such as reduced water demand, improved efficiency, improved water quality, and improved flood management.

As discussed previously, the Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin. The proposed Project would result in new impervious surfaces that could reduce rainwater infiltration and groundwater recharge. Rainwater which falls on the new impervious surfaces would flow to the adjacent stormwater facilities. Additionally, the proposed Project would not interfere with groundwater recharge.

Conclusion

Overall, implementation of the proposed Project would have a **less than significant** impact related to conflicts with the Basin Plan and the Groundwater Management Plan.

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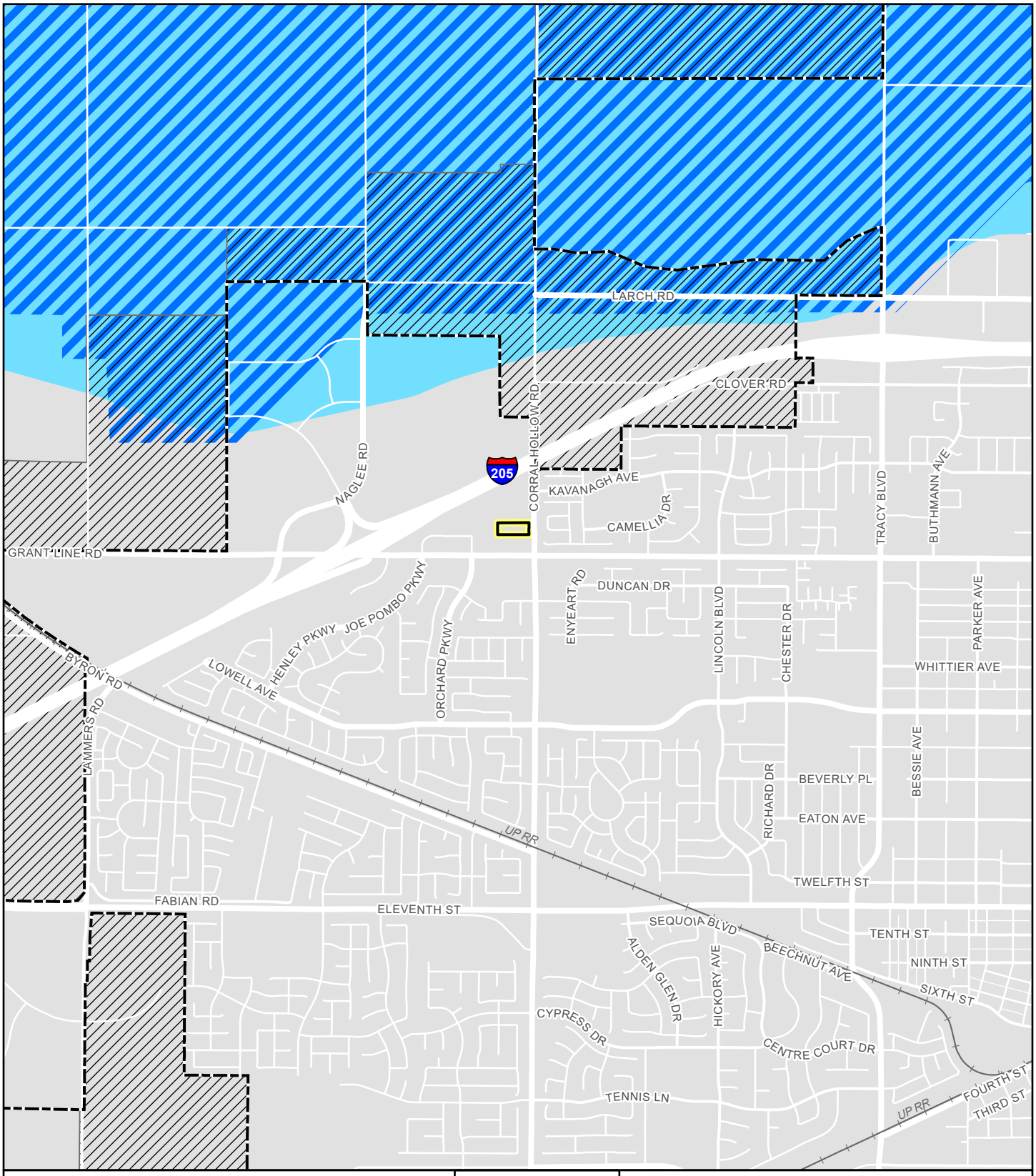

LEGEND

- Project Location
- Tracy City Limits
- Tracy SOI
- 100-Year Flood Zone
- 200-Year Flood Zone

N

0 1,000 2,000

Feet

Sources: FEMA; DWR. San Joaquin County GIS. Map date: October 12, 2022.

Tracy TRU by Hilton Project

Figure 13. FEMA Flood Insurance Rate Map

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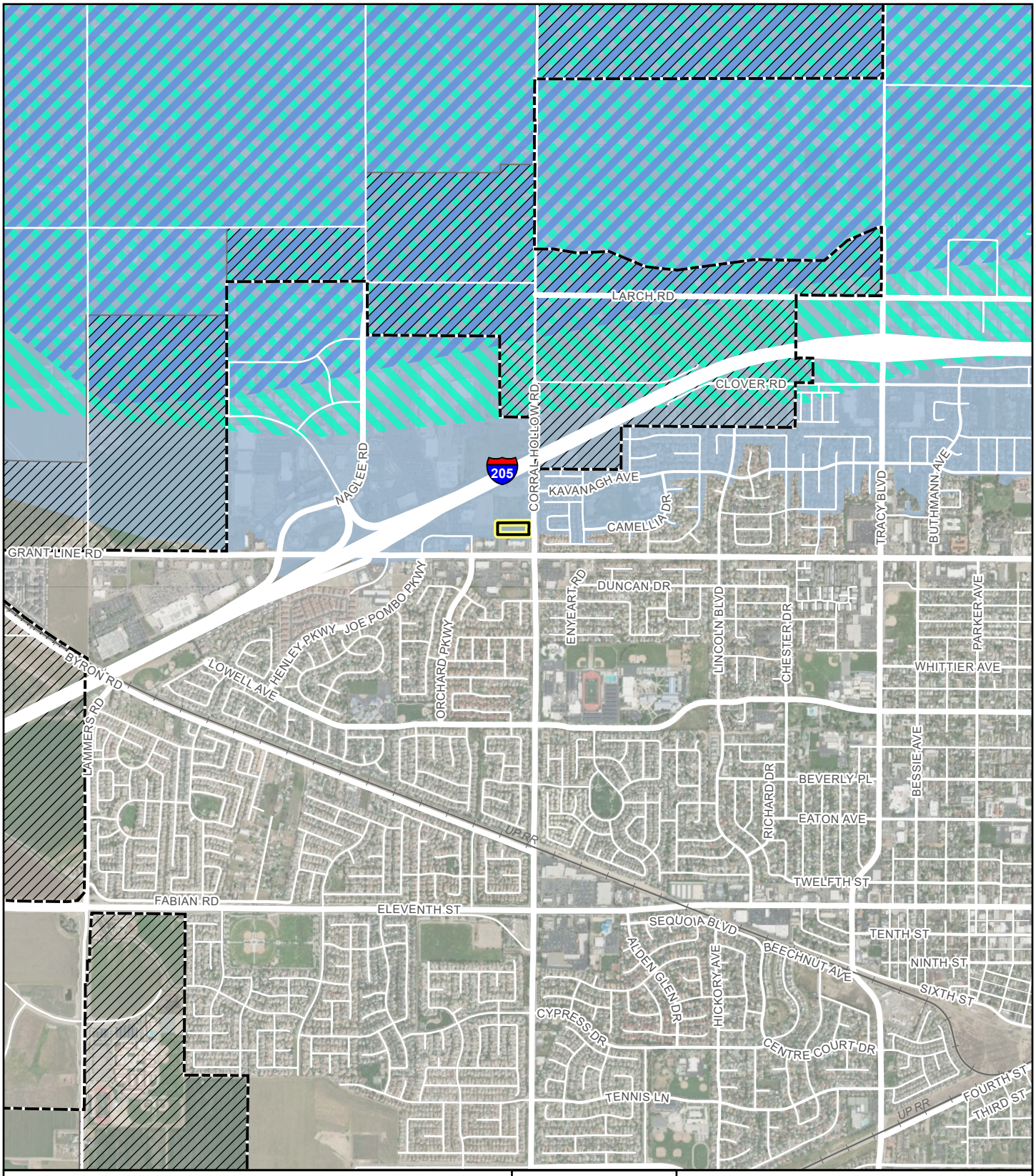

LEGEND

- Project Location
- Tracy City Limits
- Tracy SOI
- Don Pedro Dam Inundation Area
- New Melones Dam Inundation Area
- San Luis Reservoir Dam Inundation Area

N

0 1,000 2,000

Feet

Sources: ArcGIS Online World Imagery Map Service; DWR Division of Safety of Dams. San Joaquin County GIS.
Map date: October 12, 2022.

Tracy TRU by Hilton Project

Figure 14. Dam Inundation Map

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A Land Use Planning, Design, and Environmental Firm

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XI. LAND USE AND PLANNING -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Physically divide an established community?				X
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?			X	

RESPONSES TO CHECKLIST QUESTIONS

Responses a): No Impact. The Project site is surrounded by residential and commercial land uses. The Project would be consistent and compatible with the surrounding land uses. The Project would not physically divide any established community. Therefore, there is **no impact.**

Responses b): Less than Significant. The Project site is currently designated Office by the City of Tracy General Plan Land Use Designations Map and is zoned GHC. The Project would require a General Plan Amendment to change the designation from O to C.

The key planning documents that are directly related to, or that establish a framework within which the proposed Project must be consistent, include:

- City of Tracy General Plan
- City of Tracy Zoning Ordinance

The Project site is located in the Grant Line Road and Corral Hollow Road Area of Special Consideration. The vision for this area is for a medical office area that takes advantage of the proximity of the Kaiser Medical Center. The following General Plan policies apply to areas within the Grant Line Road and Corral Hollow Road Area of Special Consideration:

- 3a. Commercial uses that support the medical industry may be allowed in areas designated as Office.
- 3b. High density residential development, including projects for senior citizens, may be allowed on a case-by-case basis to take advantage of the close proximity to medical and retail services.

Additionally, the following standards apply to the O land use designation:

- Office (O). The purpose of this designation is to provide for the maintenance and expansion of the job and economic base of the City of Tracy and to provide more Tracy residents with the potential to work in the City. The Office designation provides sites for office and research and development uses that accommodate high-tech, medical, hospital, legal, insurance, government and similar users. Office parcels may have a maximum floor-area-ratio (FAR) of 1.0.

The following standards apply to the proposed C land use designation:

- Commercial (C). The Commercial designation allows for a relatively wide range of uses but focuses primarily on retail and consumer service activities that meet the needs of Tracy residents and employees as well as pass-through travelers. Specific categories of commercial activity within this designation include general commercial, regional commercial and highway commercial. The specific location of each type of commercial use is provided in the zoning code. Commercially designated land may have a maximum FAR of 1.0

The Project site is currently zoned GHC. A Zoning Amendment would not be required for the Project. The City of Tracy Zoning Ordinance (Municipal Code Title 10) provides the following designations relevant to the proposed Project:

- General Highway Commercial (GHC). The purpose of the General Highway Commercial zone is to provide areas for commercial activities which are automobile-oriented or for those uses which seek independent locations outside shopping centers or other business clusters.

The proposed uses on the Project site are consistent with the purpose of the General Plan designation of C, which allows for a relatively wide range of uses but focuses primarily on retail and consumer service activities that meet the needs of Tracy residents and employees as well as pass-through travelers. Approval of the requested General Plan Amendment (from O to C) would be required to ensure that the proposed Project is consistent with the Tracy General Plan. The Project site is currently zoned GHC, and a re-zone would not be required. The Project's consistency with other General Plan policies that provide environmental protections are addressed within the relevant sections of this document. This is a **less than significant** impact, and no mitigation is required.

XII. MINERAL RESOURCES -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

RESPONSES TO CHECKLIST QUESTIONS

Responses a), b): No Impact. As described in the Tracy General Plan EIR, the main mineral resources found in San Joaquin County, and the Tracy Planning Area, are sand and gravel (aggregate), which are primarily used for construction materials such as asphalt and concrete. According to the California Geological Survey (CGS) evaluation of the quality and quantity of these resources, the most marketable aggregate materials in San Joaquin County are found in three main areas:

- In the Corral Hollow alluvial fan deposits south of Tracy
- Along the channel and floodplain deposits of the Mokelumne River
- Along the San Joaquin River near Lathrop

Figure 4.8-1 of the General Plan EIR identifies Mineral Resource Zones (MRZs) throughout the Tracy Planning Area. The Project site is located within an area designated as MRZ-1. The MRZ-1 designation applies to areas where adequate information indicates that no significant mineral deposits are present, or where there is little likelihood for their presence. There are no substantial aggregate materials located within the Project site. Therefore, the Project would not result in the loss of availability of a known mineral resource. There is **no impact**.

XIII. NOISE

Would the project result in:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		
b) Generation of excessive groundborne vibration or groundborne noise levels?			X	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X

KEY NOISE TERMS

Acoustics The science of sound.

Ambient Noise The distinctive acoustical characteristics of a given area consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.

Attenuation The reduction of noise.

A-Weighting A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.

Decibel or dB Fundamental unit of sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared.

CNEL Community noise equivalent level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.

Frequency The measure of the rapidity of alterations of a periodic acoustic signal, expressed in cycles per second or Hertz.

Impulsive Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.

L_{dn} Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.

L_{eq} Equivalent or energy-averaged sound level. This section provides a general description of the existing noise sources in the project vicinity, a discussion of the regulatory setting, and identifies potential noise impacts associated with the proposed project. project impacts are evaluated relative to applicable noise level criteria and to the existing ambient noise environment.

L_{max} The highest root-mean-square (RMS) sound level measured over a given period of time.

$L_{(n)}$ The sound level exceeded a described percentile over a measurement period. For instance, an hourly L_{50} is the sound level exceeded 50 percent of the time during the one hour period.

Loudness A subjective term for the sensation of the magnitude of sound.

Noise Unwanted sound.

SEL Sound exposure levels. A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.

RESPONSES TO CHECKLIST QUESTIONS

Response a): Less than Significant with Mitigation. The following analysis is based on the Environmental Noise Assessment prepared by Saxelby Acoustics for the proposed Project on March 27, 2023 (see Appendix C).

Summary of Applicable Noise Level Criteria

The proposed Project includes development of transient lodging and is subject to the City of Tracy hotel noise level standards.

Table NOISE-1 shows the City of Tracy Land Use Compatibility Chart. The table indicates that development of residential uses is "Normally Acceptable" where the ambient noise level is 65 dBA L_{dn} or less. Ambient levels exceeding 60 dB L_{dn} shall be analyzed following protocols in Appendix Chapter 12, Section 1208A, Sound Transmission Control, California Building Code. Construction where the ambient noise level exceeds 70 dBA L_{dn} is considered "Unacceptable." Construction may occur where noise levels range from 60 dBA L_{dn} to 70 dBA L_{dn} if noise reduction measures are implemented to ensure interior and exterior spaces are protected from excessive noise. Policy P5 establishes an acceptable interior noise level of 45 dBA L_{dn}.

Table NOISE-1: Effects of Vibration on People and Buildings

LAND USE CATEGORY	*EXTERIOR NOISE EXPOSURE (LDN)*					
	55	*60*	*65*	*70*	*75*	*80*
Single-Family Residential						
Multi-Family Residential, Hotels, and Motels		(a)				
Outdoor Sports and Recreation, Neighborhood Parks and Playgrounds						
Schools, Libraries, Museums, Hospitals, Personal Care, Meeting Halls, Churches						
Office Buildings, Business Commercial, and Professional						
Auditoriums, Concert Halls, Amphitheaters						

	NORMALLY ACCEPTABLE Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
	CONDITIONALLY ACCEPTABLE Specified land use may be permitted only after detailed analysis of the noise reduction requirements and the needed noise insulation features included in the design.
	UNACCEPTABLE New construction or development should generally not be undertaken because mitigation is usually not feasible to comply with noise element policies.

(A) RESIDENTIAL DEVELOPMENT SITES EXPOSED TO NOISE LEVELS EXCEEDING 60 LDN SHALL BE ANALYZED FOLLOWING PROTOCOLS IN APPENDIX CHAPTER 12, SECTION 1208A, SOUND TRANSMISSION CONTROL, CALIFORNIA BUILDING CODE. SOURCE: CITY OF TRACY GENERAL PLAN.

Table NOISE-2 shows the noise level standard of a one-hour average sound level permitted at any point on or beyond the boundaries of the property. The table indicates the proposed Project shall not produce non-transportation noise levels of 55 dBA L_{eq} at adjacent noise sensitive receptors.

Table NOISE-2: General Sound Level Limits at Base District Zone

BASE DISTRICT ZONE	*SOUND LEVEL LIMITS (DECIBELS)*
1. Residential Districts RE (Residential Estate) LDR (Low Density) MDR/MDC (Medium Density) HDR (High Density) RMH (Mobile Home)	55
2. Commercial Districts MO (Medical Office) POM (Professional Office and Medical) NS (Neighborhood Shopping) CBD (Central Business District) GHC (General Highway) H-s (Highway Service)	65
3. Industrial Districts M-1 (Light Industrial) M-2 (Heavy Industrial)	75

BASE DISTRICT ZONE	*SOUND LEVEL LIMITS (DECIBELS)*
4. A (Agricultural)	75
5. AMO Aggregate Mineral Overlay Zone	75

SOURCE: CITY OF TRACY MUNICIPAL CODE.

Existing Noise Receptors

Some land uses are considered more sensitive to noise than others. Land uses often associated with sensitive receptors generally include residences, schools, libraries, hospitals, and passive recreational areas. Sensitive noise receptors may also include threatened or endangered noise sensitive biological species, although many jurisdictions have not adopted noise standards for wildlife areas. Noise sensitive land uses are typically given special attention in order to achieve protection from excessive noise.

Sensitivity is a function of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities involved. In the vicinity of the Project site, sensitive land uses include existing single-family residential uses to the north of the Project site, multi-family residential uses to the east of the Project site, and commercial and office uses to the west and south of the Project site.

Existing General Ambient Noise Levels

The existing noise environment in the Project area is primarily defined by traffic on I-205 and Corral Hollow Road. To quantify the existing ambient noise environment in the Project vicinity, Saxelby Acoustics conducted continuous (24-hr.) noise level measurements at two locations on the Project site (LT-1 and LT-2). Noise measurement locations are shown on Figure 15. A summary of the noise level measurement survey results is provided in Table NOISE-3. Appendix B of Appendix C contains the complete results of the noise monitoring.

Table NOISE-3: Summary of Existing Background Noise Measurement Data

LOCATION	*DATE*	L_{DN}	*DAYTIME* L_{EQ}	*DAYTIME* L_{50}	*DAYTIME* L_{MAX}	*NIGHTTIME* L_{EQ}	*NIGHTTIME* L_{50}	*NIGHTTIME* L_{MAX}
LT-1: 330 ft. to CL of I-205.	11/11/22	67	63	62	72	61	60	72
	11/12/22	67	64	63	75	60	60	70
LT-2: 110 ft. to CL of Corral Hollow Rd	11/11/22	68	65	59	84	61	57	77
	11/12/22	67	65	61	81	60	55	75

SOURCE: SAXELBY ACOUSTICS, 2023.

The sound level meters were programmed to record the maximum, median, and average noise levels at each site during the survey. The maximum value, denoted L_{max}, represents the highest noise level measured. The average value, denoted L_{eq}, represents the energy average of all the noise received by the sound level meter microphone during the monitoring period. The median value, denoted L_{50}, represents the sound level exceeded 50 percent of the time during the monitoring period.

Larson Davis Laboratories (LDL) model 820 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with a CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

Future Traffic Noise Environment at Off-Site Receptors

Off-Site Traffic Noise Impact Assessment Methodology

To assess noise impacts due to Project-related traffic increases on the local roadway network, traffic noise levels are predicted at sensitive receptors for "Existing" and "Background" conditions.

Existing and Background condition noise levels due to traffic are calculated using the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108). The model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. To predict traffic noise levels in terms of L_{dn}, it is necessary to adjust the input volume to account for the day/night distribution of traffic.

Project trip generation volumes were provided by the Project traffic engineer (Kimley Horn, 2023), and truck usage and vehicle speeds on the local area roadways were estimated from field observations. The predicted increases in traffic noise levels on the local roadway network for Existing and Background conditions which would result from the Project are provided in terms of L_{dn}.

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each Project-area roadway segment. In some locations sensitive receptors may not receive full shielding from noise barriers or may be located at distances which vary from the assumed calculation distance.

Tables NOISE-4 and NOISE-5 summarize the modeled traffic noise levels at the nearest sensitive receptors along each roadway segment in the Project area. Appendix C of Appendix C provides the complete inputs and results of the FHWA traffic modeling.

Based upon the Tables NOISE-4 and NOISE-5 data, the proposed Project is predicted to result in an increase in a maximum traffic noise level increase of 0.1 dBA.

Table NOISE-4: Predicted Traffic Noise Level and Projected-Related Traffic Noise Level Increases

ROADWAY	SEGMENT	PREDICTED EXTERIOR NOISE LEVEL (DBA LDN) AT CLOSEST SENSITIVE RECEPTORS		
		EXISTING NO PROJECT	EXISTING + PROJECT	CHANGE
Orchard Parkway	South of Grant Line Rd	57.9	57.9	0.0
Corral Hollow Rd	South of Grant Line Rd	61.9	61.9	0.0
Grant Line Road	East of Corral Hollow Rd	61.2	61.2	0.0
Grant Line Road	West of Orchard Pkwy	58.3	58.3	0.0
Corral Hollow Rd	South of Kavanagh Ave	58.7	58.7	0.0
Corral Hollow Rd	North of Kavanagh Ave	58.7	58.7	0.0

SOURCE: SAXELBY ACOUSTICS, 2023.

Table NOISE-5: Background Traffic Noise Level and Projected-Related Traffic Noise Level Increases

ROADWAY	SEGMENT	PREDICTED EXTERIOR NOISE LEVEL (DBA LDN) AT CLOSEST SENSITIVE RECEPTORS		
		BACKGROUND NO PROJECT	BACKGROUND + PROJECT	CHANGE
Orchard Way	South of Grant Line Rd	57.9	57.9	0.0
Corral Hollow Rd	South of Grant Line Rd	61.9	62.0	0.1
Grant Line Road	East of Corral Hollow Rd	61.3	61.3	0.0
Grant Line Road	West of Orchard Pkwy	58.4	58.4	0.0
Corral Hollow Rd	South of Kavanagh Ave	58.8	58.8	0.0
Corral Hollow Rd	North of Kavanagh Ave	58.7	58.7	0.0

SOURCE: SAXELBY ACOUSTICS, 2023.

Evaluation of Project Operational Noise on Existing Sensitive Receptors

Project site traffic circulation and residential HVAC noise are the primary noise sources for this Project. The data used is based upon a combination of manufacturer's provided data and Saxelby Acoustics data from similar operations.

On-Site Circulation

The Project is projected to generate 623 daily trips with 36 trips in the morning peak hour (Kimley Horn, 2023). Saxelby Acoustics assumed that one to two of these trips could be heavy trucks. Parking lot movements are predicted to generate a sound exposure level (SEL) of 71 dBA SEL at 50 feet for cars and 85 dBA SEL at 50 feet for trucks.

Traffic Noise Increases at Off-Site Receptors

Based upon the City's General Plan Policy P2 criteria, where existing traffic noise levels are greater than 65 dBA L_{dn}, at the outdoor activity areas of noise-sensitive uses, a +3.0 dBA L_{dn} increase in roadway noise levels will be considered significant. Where traffic noise levels cause an increase of +5.0 dB L_{dn}, an increase in roadway noise levels will be considered significant.

Where traffic noise levels cause new noise levels that exceed the City of Tracy noise standards, the noise level would be considered significant.

According to Tables NOISE-4 and NOISE-5, the maximum increase in traffic noise at the nearest sensitive receptor is predicted to be 0.1 dBA. Therefore, impacts resulting from increased traffic noise would be considered **less-than-significant**, and no mitigation is required.

Operational Noise at Existing Sensitive Receptors

The analysis for noise associated with the HVAC assumes rooftop equipment would contain ten-ton air-cooled chiller units. The units were assumed to have a sound level rating of 59 dBA L_{eq} at 50 feet. Manufacturers data.

Saxelby Acoustics used the SoundPLAN noise prediction model. Inputs to the model included sound power levels for the proposed amenities, existing and proposed buildings, terrain type, and locations of sensitive receptors. These predictions are made in accordance with International Organization for Standardization (ISO) standard 9613-2:1996 (Acoustics – Attenuation of sound during propagation outdoors). ISO 9613 is the most commonly used method for calculating exterior noise propagation. Figure 16 shows the noise level contours resulting from operation of the Project.

As shown on Figure 16, the Project is predicted to expose nearby residences to noise levels up to 44 dBA, L_{eq} during both daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) hours. The predicted Project noise levels would meet the City of Tracy Municipal Code noise level standard of 55 dBA, L_{eq}. The results are also summarized in Table NOISE-6.

Table NOISE-6: Project Operational Noise Significant Increase at Adjacent Noise Sensitive Receptors

NOISE SENSITIVE RECEPTOR	*AMBIENT NOISE LEVEL*	*PROJECT NOISE LEVEL*	*AMBIENT + PROJECT NOISE LEVEL*	*DIFFERENCE*
1	67.7 L_{DN}[1]	51.0 L_{DN}[3]	67.8 L_{DN}[3]	0.1
2	62.7 L_{DN}[1,2]	45.0 L_{DN}[3]	62.8 L_{DN}[3]	0.1

NOTES:
[1] AS MEASURED AT LT-2
[2] ADJUSTED FOR SOUND WALL (MINUS 5 DBA)
[3] ASSUMES CONTINOUS DAY/NIGHT OPERATION
SOURCE: SAXELBY ACOUSTICS, 2023.

Based on Table NOISE-6 data, the proposed Project will result in a 0.1 increase in the ambient noise level of nearby noise-sensitive receptors. As stated in the City of Tracy General Plan Policy P2, mitigation measures shall be required for new development projects under the following conditions:

- Causes the L_{dn} at noise-sensitive uses to increase 3 dB or more and exceed the "normally acceptable level;
- Causes the L_{dn} at noise-sensitive uses increase 5 dB or more and remain "normally acceptable" level;
- Cause new noise levels to exceed the City of Tracy Noise Ordinance limits.

The predicted Project noise levels are predicted to comply with the City of Tracy General Plan Policy P2. This is a **less-than-significant** impact, and no mitigation is required.

Evaluation of Project Construction Noise on Existing Sensitive Receptors

During the construction of the proposed Project, noise from construction activities would temporarily add to the noise environment in the Project vicinity. As shown in Table NOISE-7, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dB at a distance of 50 feet.

Table NOISE-7: Vibration Levels for Varying Construction Equipment

TYPE OF EQUIPMENT	*PEAK PARTICLE VELOCITY @ 25 FEET (INCHES/SECOND)*	*PEAK PARTICLE VELOCITY @ 50 FEET (INCHES/SECOND)*	*PEAK PARTICLE VELOCITY @ 100 FEET (INCHES/SECOND)*
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.037	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210	0.074	0.026

SOURCE: FEDERAL TRANSIT

During the construction phases of the Project, noise from construction activities would add to the noise environment in the immediate Project vicinity. As indicated in Table 6, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dBA L_{max} at a distance of 50 feet. Construction activities would also be temporary in nature and are anticipated to occur during normal daytime working hours.

Noise would also be generated during the construction phase by increased truck traffic on area roadways. A Project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from the construction site. This noise increase would be of short duration and would occur during daytime hours.

Noise from localized point sources (such as construction sites) typically decreases by approximately 6 dBA with each doubling of distance from source to receptor. Given this noise attenuation rate and assuming no noise shielding from either natural or human-made features (e.g., trees, buildings, fences), outdoor receptors within approximately 290 feet of construction sites could experience maximum instantaneous noise levels of greater than 75 dBA when on-site construction-related noise levels exceed approximately 90 dBA at the boundary of the construction site. As previously discussed, nearby noise-sensitive receptors consist predominantly of residential dwellings located near the northern and eastern boundaries of the Project site.

The City of Tracy Noise Ordinance places limitations on the acceptable hours of construction. During development of the proposed Project, construction activities occurring during the more noise-sensitive nighttime hours (i.e., 7 PM to 7 AM) are prohibited. Additionally, there are several residential uses directly north and east of the Project site which may be subject to construction

noise. As a result, noise-generating construction activities would be considered to have a potentially significant short-term impact.

Implementation of Mitigation Measure NOISE-1 would reduce construction-generated noise levels. With implementation of Mitigation Measure NOISE-1, the proposed Project would have a ***less than significant*** impact relative to this environmental topic.

MITIGATION MEASURE(S)

Mitigation Measure NOISE-1: *The City of Tracy Development Services Department shall establish the following as conditions of approval for any permit that results in the use of construction equipment:*

- *Construction shall be limited to 7:00 a.m. to 7:00 p.m.*
- *All construction equipment powered by internal combustion engines shall be properly muffled and maintained.*
- *Quiet construction equipment, particularly air compressors, are to be selected whenever possible.*
- *All stationary noise-generating construction equipment such as generators or air compressors are to be located as far as is practical from existing residences. In addition, the Project contractor shall place such stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the Project site.*
- *Unnecessary idling of internal combustion engines is prohibited.*
- *The construction contractor shall, to the maximum extent practical, locate on-site equipment staging areas to maximize the distance between construction-related noise sources and noise-sensitive receptors nearest the Project site during all Project construction.*

These requirements shall be noted on the Project plans prior to approval of grading and/or building permits.

Response b): Less than Significant. Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

Human and structural response to different vibration levels is influenced by several factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table NOISE-8 indicates that the threshold for damage to structures ranges from 0.2 to 0.6 peak particle velocity in inches per second (in/sec p.p.v.). One-half this minimum threshold or 0.1 in/sec p.p.v. is considered a safe criterion that would protect against architectural or structural damage. The general threshold at which human annoyance could occur is noted as 0.1 in/sec p.p.v.

Table NOISE-8: Effects of Vibration on People and Buildings

PEAK PARTICLE VELOCITY		*HUMAN REACTION*	*EFFECT ON BUILDINGS*
MM/SEC.	*IN./SEC.*		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage.

SOURCE: CALTRANS. TRANSPORTATION RELATED EARTHBORN VIBRATIONS. TAV-02-01-R9601 FEBRUARY 20, 2002.

The vibration-generating activities typically happen during construction when activities such as grading and road construction occur. Structures which could be impacted by construction-related vibrations, especially vibratory compactors/rollers, are located approximately 130 feet, or further, from the Project site. At this distance, construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. Table NOISE-9 shows the typical vibration levels produced by construction equipment.

Table NOISE-9: Vibration Levels for Varying Construction Equipment

TYPE OF EQUIPMENT	*PEAK PARTICLE VELOCITY @ 25 FEET (INCHES/SECOND)*	*PEAK PARTICLE VELOCITY @ 50 FEET (INCHES/SECOND)*	*PEAK PARTICLE VELOCITY @ 100 FEET (INCHES/SECOND)*
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.037	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210	0.074	0.026

SOURCE: FEDERAL TRANSIT ADMINISTRATION, TRANSIT NOISE AND VIBRATION IMPACT ASSESSMENT GUIDELINES, MAY 2006.

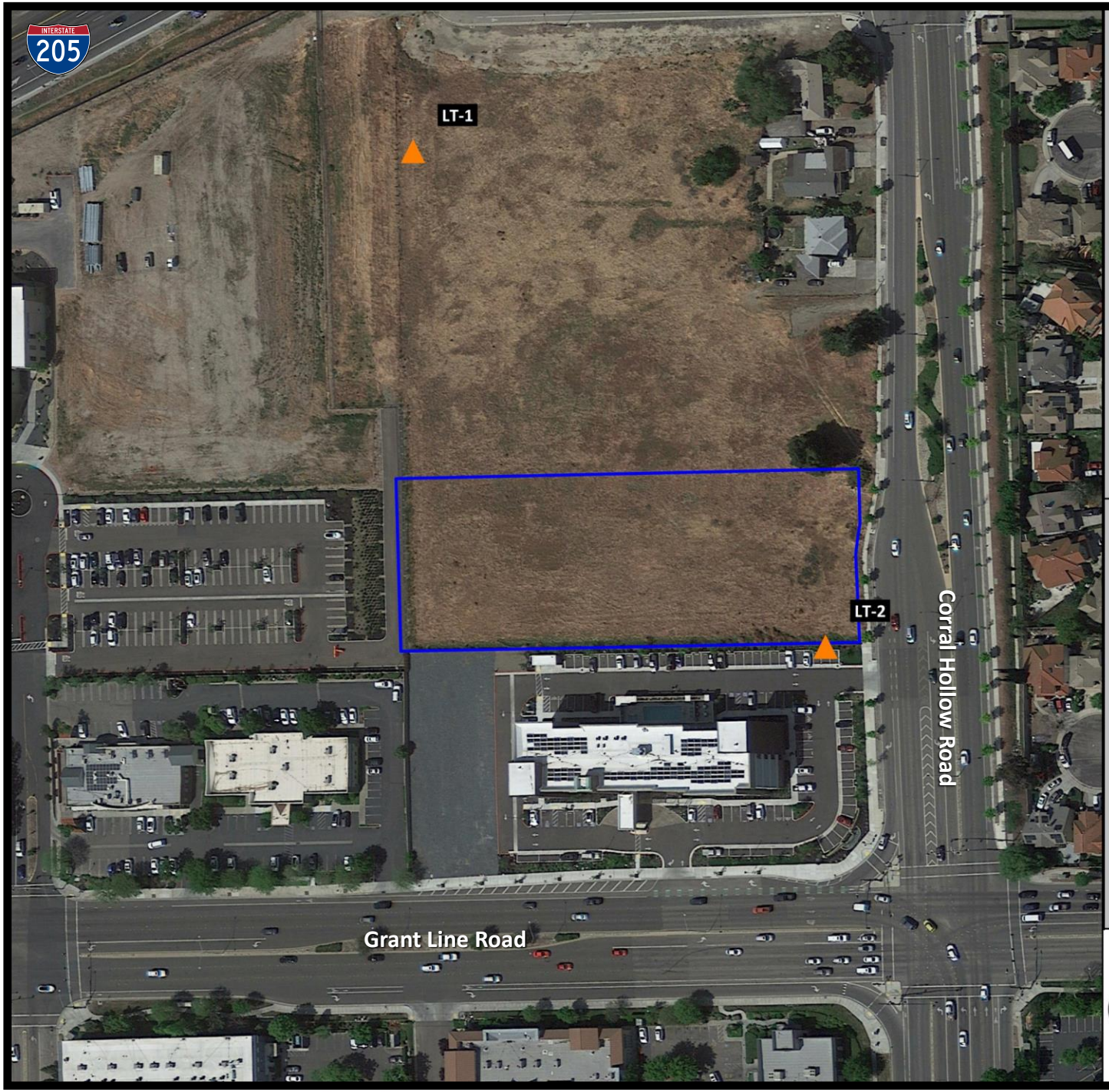
Construction Vibration Impacts

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural.

The Table NOISE-9 data indicates that construction vibration levels anticipated for the Project are less than the 0.2 in/sec threshold at distances of 26 feet. Sensitive receptors which could be impacted by construction related vibrations, especially vibratory compactors/rollers, are located further than 26 feet from typical construction activities. At distances greater than 26 feet construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

This is a **less-than-significant** impact, and no mitigation is required.

Response c): No Impact. The Project site is located approximately 4.6 miles southeast of the nearest airport (the Tracy Municipal Airport) and is outside of the contours of the Tracy Municipal Airport land use plan. Therefore, there is **no impact** relative to this topic.



Tracy TRU by Hilton IS-MND

City of Tracy, California

Figure 15.

Noise Measurement Sites

Legend

- Project Site
- Noise Measurement Site - Long Term

50 ft 150 ft 250 ft

Projection: UTM Zone 10 / WGS84 / meters
Rev. Date: 01/12/2023

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Tracy TRU by Hilton Project

City of Tracy, California

Figure 16.

Stationary Noise Contours
Leq, dB(A)

Noise Level, dB(A)

55 <	<=	56
56 <	<=	57
57 <		

Legend

- Project Building
- Project Site
- Outdoor Area Noise Level

Scale 1:110

0 20 40 80 120 160 feet

N

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XIV. POPULATION AND HOUSING -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			X	
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?			X	

RESPONSES TO CHECKLIST QUESTIONS

Response a): Less than Significant. Implementation of the Project would result in the construction of a 78-room hotel on the Project site. The proposed Project is located near the northern edge of an existing urbanized area of the City. There is existing infrastructure (roads, water, sewer, etc.) in the immediate vicinity of the Project site. While the Project would extend these services onto the site to serve the proposed development, the Project would not extend infrastructure beyond an area of the City not currently served. Therefore, while the Project may induce population growth through the provision of a 78-room hotel in the short-term, the Project would not indirectly induce population growth in other areas of the City of Tracy.

This impact is **less-than-significant**, as demonstrated throughout this document. No additional mitigation is required.

Response b): Less than Significant. There are no residential structures located on the Project site. Development of the Project would not create or remove housing. Therefore, the Project would not displace substantial numbers of people or existing housing and would have a **less-than-significant** impact in this respect.

XV. PUBLIC SERVICES

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?			X	
Police protection?			X	
Schools?			X	
Parks?			X	
Other public facilities?			X	

RESPONSES TO CHECKLIST QUESTIONS

Response a.i) Fire Protection: Less than Significant. On September 16, 1999, the City of Tracy Fire Department merged with the Tracy Rural Fire Protection District, forming the South San Joaquin County Fire Authority (SCFA). The SCFA was created to provide fire protection services to the entire jurisdictional area of both the corporate city limits and surrounding rural community. Employees of the Tracy Rural Fire Protection District became employees of the City of Tracy with the City of Tracy maintaining day to day administrative control of the department. Both the Tracy Rural Fire Protection District and the City of Tracy contract with the SCFA to receive fire protection services. The SCFA in turn contracts with the City of Tracy to provide employees and administrative services.

The SCFA/Tracy Fire Department provides emergency medical services to citizens located within the San Joaquin Emergency Medical Services Agency (SJEMSA) Zone C. Ambulance transport is provided by private provider, American Medical Response (AMR) under contract with the SJEMSA. The SCFA currently operates six fire stations and an administrative office. Twenty-four hour-per-day staffing is provided with six paramedic engine companies and one ladder truck company. Four fire stations are within the incorporated area of the City of Tracy, and two are in the surrounding rural Tracy area.

The SCFA conducted a Standards of Response Coverage study in late 2007. Findings of the study indicated that the Department had challenges in meeting its established response time objectives in the areas of the West Valley Mall and Downtown Tracy utilizing existing resources. The Project site is located approximately 0.25 miles southeast of the West Valley Mall. Two new facilities were opened in June 2014, to replace Fire Stations 92 and 96. The new facilities allow the Fire Department to serve the greater community of Tracy (including the West Valley Mall) more effectively within the established response time standard of 6.5 minutes.

The nearest fire station, Station 96, is located approximately 0.15 miles southeast of the Project site. The City of Tracy Public Safety Master Plan identifies this fire station that will permanently serve the Project area as Station "96" (Figure 22).

Response time and fire department effectiveness once units arrive are critical considerations in mitigating emergencies. The response time standard is defined as total reflex time (1:30 call processing, 1:00 turn-out time, and 4:00 travel-time). In addition, the SCFA performance standard to measure effectiveness is to confine moderate risk structure fires to the room of origin or less 90 percent of the time in the City. In order to successfully mitigate emergencies, it is essential the SCFA assemble an adequate number of personnel to perform critical tasks at the scene once the unit(s) arrive.

Recognizing the potential need for increases in fire protection and emergency medical services, the City's General Plan includes policies to ensure that adequate related facilities are funded and provided to meet future growth (Objective PF-1.1, P1). This policy is implemented through the review of all new projects with the City's Sphere of Influence, prior to development, and through the collection of development impact fees for the funding of facilities.

Impact fees from new development are collected based upon projected impacts from each development. The adequacy of impact fees is reviewed on an annual basis to ensure that the fee is commensurate with the service facility and equipment needs.

Payment of the applicable impact fees by the Project applicant, and ongoing revenues that would come from property taxes, sales taxes, participation in the Community Facilities District or similar funding mechanism, and other revenues generated by the Project, would fund capital and labor costs associated with fire protection services.

All construction plans and development proposals are evaluated to determine fire protection needs. The Fire Prevention Division works closely with other City departments to ensure appropriate design and construction standards, including adequate fire protection water flows and that fire-resistant building materials are met within new development projects.

A Water Distribution System Hydraulic Network Analysis was prepared by Blackwater Consulting Engineers for the proposed Project on February 3, 2023 (as provided in Appendix D). As part of the Analysis, individual fire flow demands were simulated at locations along the Project where fire service connections are proposed in order to evaluate the potable water system during maximum day demand with fire flow scenario for the Project. No storage capacity issues were identified. Overall, this impact is considered **less than significant**.

a.ii) Police Protection: Less than Significant. The Tracy Police Department provides police protection services to the City of Tracy. Its headquarters are located at 1000 Civic Center Drive, approximately 2.2 miles southeast of the Project site. There are no satellite offices or plans to construct any in the near future.

The Department divides calls into three categories, Priority 1, 2, and 3 calls. Priority 1 calls are defined as life threatening situations. Priority 2 calls are not life threatening, but require

immediate response. Priority 3 calls cover all other calls received by the police. Average response time for Priority 1 calls within city limits is approximately six to eight minutes. Response time for Priority 2 and 3 calls is, on average, 22 minutes.

The Tracy Police Department provides mutual aid to the San Joaquin County Sheriff's office, and vice versa, when a situation exceeds the capabilities of either department. Mutual aid is coordinated through the San Joaquin County Sheriff.

The City of Tracy General Fund provides approximately 96% of the Police Department's budget. The remaining 4% comes from various grants, fees, and assessments. The Police Department operates on a pre-approved annual budget, based on a fiscal year. New service demands are assessed when budget proposals are reviewed. Supplemental budget requests are considered on a case-by-case basis during the fiscal year.

It is not anticipated that implementation of the proposed Project would result in significant new demand for police services. Project implementation would not require the construction of new police facilities to serve the Project Area, nor would it result in impacts to the existing response times and existing police protection service levels. Therefore, impacts to police services will be **less than significant.**

a.iii) Schools: Less than Significant. The proposed Project includes development of a 78-room hotel in an area adjacent to existing commercial uses. Such uses would generate additional students requiring accommodation in the Tracy Unified School District (TUSD).

The TUSD collects impact fees from new developments under the provisions of SB 50. Payment of the applicable impact fees by the Project applicant, and ongoing revenues that would come from taxes, would fund capital and labor costs associated with school services. The adequacy of fees is reviewed on an annual basis to ensure that the fee is commensurate with the service. Payment of the applicable impact fees by the Project applicant, and ongoing revenues that would come from property taxes, sales taxes, and other revenues generated by the Project, would fund improvements associated with school services. Under the provisions of SB 50, a project's impacts on school facilities are fully mitigated via the payment of the requisite new school construction fees established pursuant to Government Code Section 65995. As such, the Project's impacts to school services are **less than significant**.

a.iv) Parks: Less than Significant. Potential Project impacts to parks and recreational facilities are addressed in the following Recreation section of this document.

a.v) Other Public Facilities: Less than Significant. Other public facilities in the City of Tracy include libraries, hospitals, and cultural centers such as museums and music halls. The proposed Project would increase demand on these facilities. The City of Tracy General Plan requires new development to pay its fair share of the costs of public buildings by collecting the Public Buildings Impact Fee. The Public Buildings Impact fee is used by the City to expand public services and maintain public buildings, including the Civic Center and libraries in order to meet the increased demand generated by new development. The collection of fees and determined fair share fee amounts are adopted by the City as Conditions of Approval (COAs) for all new development

projects prior to Project approval. Payment of the applicable impact fees by the Project applicant, and ongoing revenues that would come from taxes, would ensure that Project impacts to libraries and public buildings are **less than significant.**

XV. RECREATION

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X	
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			X	

RESPONSES TO CHECKLIST QUESTIONS

Responses a), b): Less than Significant. The proposed Project would increase demand for parks and recreational facilities within the City of Tracy, and would increase the use of the City's existing parks and recreation system. Patrons of the proposed hotel may visit existing park and recreational facilities within the City. As described in the Tracy General Plan, the City maintains 48 mini-parks, 15 neighborhood parks, and eight community parks, providing approximately 256 acres at 71 sites. The City is also in the process of constructing the Legacy Fields sports park at the northern edge of the City, which will provide an additional 166 acres of sports parks, 86 acres of passive recreation area, and a 46-acre future expansion area for additional park facilities.

The City strives to maintain a standard of 4 acres of park land for every 1,000 persons. In order to maintain this standard, the City requires new development projects to either include land dedicated for park uses, or to pay in-lieu fees towards the City's parks program. Chapter 13.12 of the Tracy Municipal Code states that, *"all development projects shall be required to maintain the City standard of four (4) acres of park land per 1,000 population. All development projects, as a condition of approval of any tentative parcel map or tentative subdivision map, or as a condition of approval of any building permit, shall dedicate land to the City or pay a fee in lieu thereof, or a combination of both, in order to maintain this City standard. The precise obligation of any development project to dedicate land or pay a fee pursuant to this section shall be incorporated in the implementing resolution for the park fee applicable to the development project."*

The City of Tracy requires the payment of the Project's fair share in-lieu parks fees, as required by the City's General Plan. The collection of fees and determined fair share fee amounts are adopted by the City as Conditions of Approval (COAs) for all new development projects prior to Project approval. Fees paid aid in the development of new park-space and maintenance as required, to ensure continued high quality park facilities for all city residents. Additionally, given that the City maintains an ample and diverse range of park sites and park facilities, and collects fees from new development to fund the construction of new parks and the maintenance of existing parks, the additional demand for parks generated by the proposed Project would not result in the physical deterioration of existing parks and facilities within Tracy. As such, this is a **less than significant** impact and no mitigation is required.

XVI. TRANSPORTATION AND CIRCULATION -- WOULD THE PROJECT:

Would the project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?			X	
b) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
d) Result in inadequate emergency access?			X	

RESPONSES TO CHECKLIST QUESTIONS

Response a): Less than Significant. Implementation of the proposed Project would not result in a conflict with an existing or planned pedestrian facility, bicycle facility, or transit service/facility. In addition, the Project would not interfere with the implementation of a planned bicycle facility, pedestrian facility, or transit service/facility. The Project would not cause a degradation in transit service such that service does not meet performance standards established by the transit operator.

Existing pedestrian and bicycle facilities are located on the roadways adjacent to the Project site. There are no pedestrian or bicycle facilities within the undeveloped Project site. The City of Tracy General Plan describes an interconnected, hierarchical system of sidewalks, on-street bike lanes, and off-street trails for pedestrians and bicyclists that provides access to this area of the City of Tracy. The Project's transportation and circulation system is designed to accommodate access to and from Corral Hollow Road.

Site access would be provided by a new shared driveway located in the southeast corner of the site off Corral Hollow Road. This driveway would be shared with the adjacent Home2Suites Hotel located adjacent south of the Project site. The existing fencing at the southern boundary of the Project site and northern boundary of the adjacent hotel site would be removed to allow for free-flow of pedestrians, bicycles, and automobiles. The Project would also include a secondary shared access to the adjacent Home2Suites Hotel in the southeastern portion of the site. Additionally, a future shared access with the properties to the north and west would be provided in the northwestern portion of the Project site. This northwestern shared access would not be fully developed until the adjacent properties to the north and west are developed at some time in the future.

Additionally, as part of the proposed Project, the pedestrian push button systems at the Orchard Parkway/Grant Line Road intersection and Kavanagh Avenue/Corral Hollow Road intersection would be upgraded. Additionally, the striping on the southbound lanes of Corral Hollow Road

from the Project frontage to the intersection at Grant Line Road would be refreshed. Further, the southbound bicycle lane striping would be updated from the northern property line to the intersection of Grant Line Road, per the City of Tracy Standard Plans.

Overall, this impact would be **less than significant**.

Response b): Less than Significant. A CEQA Transportation Review was prepared by Kimley Horn on January 12, 2022. The following VMT analysis is based on the CEQA Transportation Review prepared by Kimley Horn (See Appendix B for further detail).

Per the City's Draft VMT Policy, Kimley Horn conducted a VMT analysis for the proposed Project for automobile (employee) trips only. The purpose of the VMT analysis was to measure the transportation impact of the proposed development.

The City of Tracy considers the VMT performance of residential and non-residential components of a project separately, using the efficiency metrics of VMT per capita and VMT per employee as described in the City of Tracy Transportation Master Plan Update (2022). For retail components of a project, or other customer-focused uses, the citywide VMT change is analyzed. The City of Tracy's VMT thresholds of significance are summarized below for each of these components:

- Residential – 15% below baseline (existing) average VMT per Capita
- Employment-based land uses (e.g., office) – 15% below baseline (existing) average VMT per Employee
- Customer-based non-residential land uses (e.g., retail) – No net increase in VMT

Methodology and Assumptions

Based on the land use information provided, for the purposes of SB 743 analysis and the determination of transportation related significant impacts, the proposed hotel land use was analyzed.

In terms of a VMT analysis, hotels are grouped into two categories, typical and destination. Typical hotels are generally those hotels with limited amenities that may include a dining area with a breakfast buffet, small gym, and sometimes a pool; generally, guests stay at these hotels because their ultimate destination is in the vicinity of the hotel. Alternatively, guests visiting destination hotels will spend the majority of their time on the hotel property or engaging in activities run by the hotel because the hotel is their ultimate destination. While both types of hotels are customer-based, and impacts are measured in terms of whether the hotel increases regional VMT, destination hotels generally require quantitative analyses while typical hotels can be assumed to result in a less than significant impact. Conversely, destination hotels do not serve pre-existing needs as they offer special amenities that aren't offered elsewhere, and guests typically spend the majority of their time on the destination hotel property. The Chaminade Resort & Spa in Santa Cruz or the Great Wolf Lodge and Resort in Manteca are examples of destination hotels while the proposed Project is an example of a typical hotel. Guests will choose the hotel type based on their reason for travel, such as a work-related trip versus a spa vacation retreat.

Analysis

Similar to retail stores, typical hotels such as the proposed Project most often serve pre-existing needs (i.e., the hotel does not generate new trips because it meets existing demand) because their guests are staying at the hotel not because of the amenities offered by the hotel, but because of the area the hotel is located in. Because of this, typical hotels can be presumed to reduce trip lengths when a new hotel is proposed. Essentially, the assumption is that someone will travel to a newly constructed typical hotel because of its proximity to the area attraction, rather than that the proposed hotel is fulfilling an unmet need (i.e., the person had an existing need to travel to the area that was previously met by an existing hotel located in the same general area, but now is traveling to the new hotel because it is either closer to the person's origin location or located a similar distance away). Typical hotels most often they can be presumed to reduce trip lengths when a new hotel is introduced within a cluster of existing hotels located near a local destination or attraction. Essentially, a trip to a hotel is expected to occur due to someone planning to travel to Tracy, or the immediate area, but the proximity of the hotel to the surrounding attractions would drive the length of that trip and the resultant impact to the overall transportation system. Thus, the impact to the transportation system would be negligible or reduced by the introduction of a new hotel to an area where people are already traveling and planning on staying unless the hotel significantly effects the local supply of rooms or introduces a significant new attraction.

While a specific market study for the proposed hotel is not provided as part of the VMT analysis, a map showing the proximity of other similar hotels is provided as Figure 17. A half-mile buffer was placed around the seven existing hotels in the area, as well as the proposed Project, to visually represent the lack of overlapping service area between the proposed Project and the existing hotels. As shown in Figure 17, the proposed Project, identified with a red icon labeled "Proposed Tru by Hilton", and a yellow buffer surrounding it, will reduce trip lengths by "adding hotel opportunities into the local area, further improving hotel destination proximity".[4] Accordingly, it is appropriate that the proposed Project development be presumed, in accordance with the Technical Advisory, that it will result in a VMT reduction and support the goals of SB 743.

Findings

Based on the results of this analysis, the addition of a proposed hotel in the Project location can shorten existing trip lengths, which would result in a net decrease in VMT. Therefore, it is presumed that the VMT-related impact of the proposed hotel would be **less than significant**.

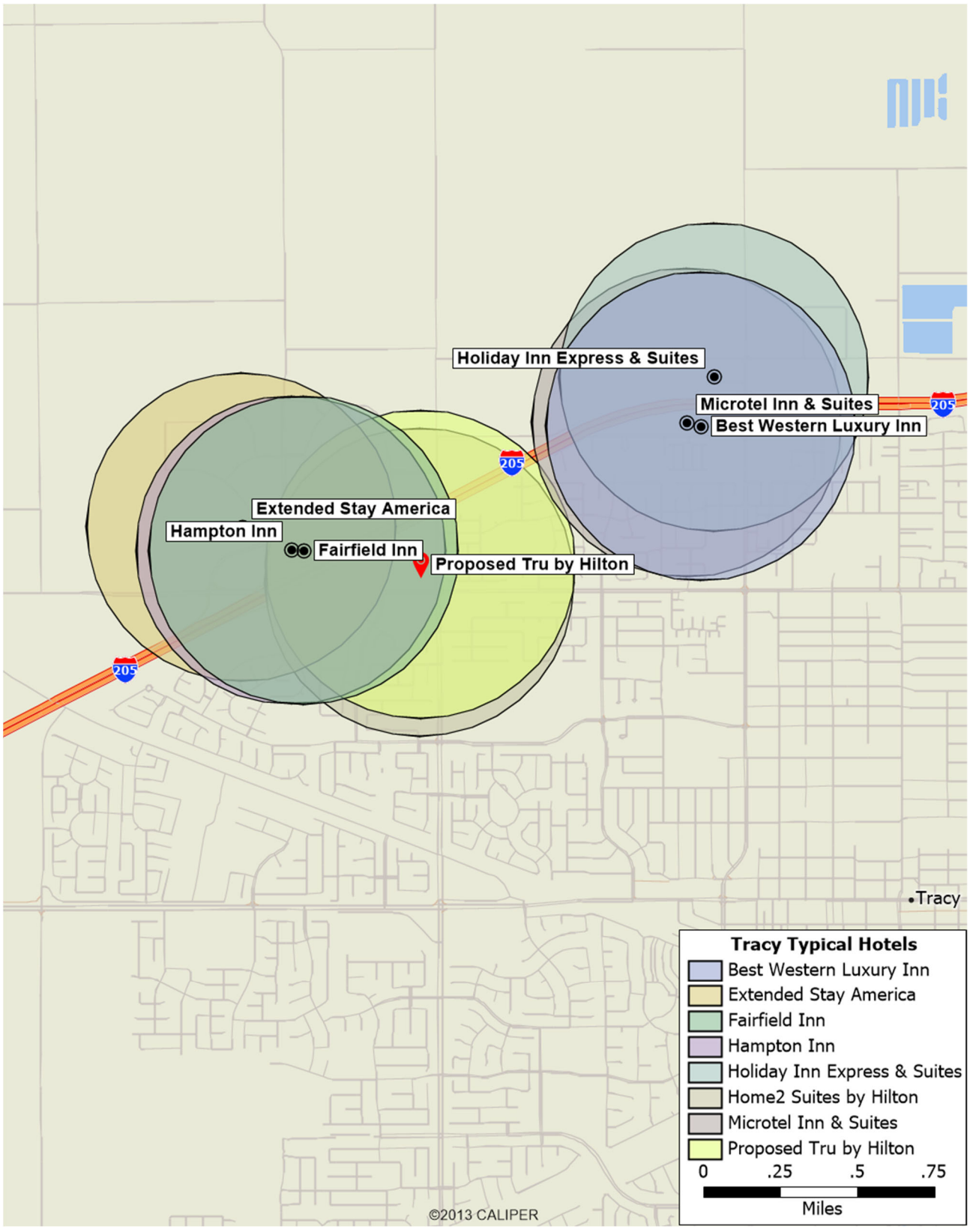
Responses c-d): Less than Significant. No site circulation or access issues have been identified that would cause a traffic safety problem/hazard or any unusual traffic congestion or delay that could impede emergency vehicles or emergency access. The Project does not include any design features or incompatible uses that pose a significant safety risk. The Project would create no adverse impacts to emergency vehicle access or circulation. Site access would be provided by a

[4] Technical Advisory on Evaluating Transportation Impacts in CEQA. Governor's Office of Planning and Research. December 2018. Page 16.

new shared driveway located in the southeast corner of the site off Corral Hollow Road. This driveway would be shared with the adjacent Home2Suites Hotel located adjacent south of the Project site. The existing fencing at the southern boundary of the Project site and northern boundary of the adjacent hotel site would be removed to allow for free-flow of pedestrians, bicycles, and automobiles. The Project would also include a secondary shared access to the adjacent Home2Suites Hotel in the southeastern portion of the site. Additionally, a future shared access with the properties to the north and west would be provided in the northwestern portion of the Project site. This northwestern shared access would not be fully developed until the adjacent properties to the north and west are developed at some time in the future.

Overall, Project implementation would have a **less-than-significant** impact relative to this topic.

Figure 17. Proximity of Project to Existing Hotels



SOURCe: Tru by Hilton CEQA Transportation Review (Kimley Horn, 2023).

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XVII. TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?		X		
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resources to a California Native American tribe.		X		

BACKGROUND

Assembly Bill 52 (AB 52) requires a lead agency, prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project, to begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if: (1) the California Native American tribe requested to the lead agency, in writing, to be informed by the lead agency through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe, and (2) the California Native American tribe responds, in writing, within 30 days of receipt of the formal notification, and requests the consultation. The City of Tracy has not received any requests from California Native American tribes to be informed through formal notification of proposed projects in the City's geographic area.

RESPONSES TO CHECKLIST QUESTIONS

Responses a.i)-a.ii): Less than Significant with Mitigation. The City of Tracy General Plan and subsequent EIR does not identify the site as having prehistoric period cultural resources. Additionally, there are no known unique cultural resources known to occur on, or within the immediate vicinity of the Project site. The site has previously been used for agricultural uses. No instances of cultural resources or human remains have been unearthed on the Project site. Based on the above information, the Project site has a low potential for the discovery of prehistoric, ethnohistoric, or historic archaeological sites that may meet the definition of Tribal Cultural Resources. Although no Tribal Cultural Resources have been documented in the Project site, the Project is located in a region where cultural resources have been recorded and there remains a potential that undocumented archaeological resources that may meet the Tribal Cultural Resource definition could be unearthed or otherwise discovered during ground-disturbing and

construction activities. Examples of significant archaeological discoveries that may meet the Tribal Cultural Resources definition would include villages and cemeteries.

Due to the possible presence of undocumented Tribal Cultural Resources within the Project site, construction-related impacts on tribal cultural resources would be potentially significant. Implementation of the Mitigation Measure CUL-1 would require appropriate steps to preserve and/or document any previously undiscovered resources that may be encountered during construction activities, including human remains. Implementation of this measure would reduce this impact to a **less than significant** level.

MITIGATION MEASURE(S)

Implement Mitigation Measure CUL-1

XVIII. UTILITIES AND SERVICE SYSTEMS -- WOULD THE PROJECT:

Would the project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Require or result in the relocation or construction of new or expanded water, wastewater or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			X	
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments?			X	
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

Responses to Checklist Questions

Response a)-c): Less than Significant.

Water

The provision of public services and the construction of onsite infrastructure improvements will be required to accommodate the development of the proposed Project. The proposed Project would require extensions of offsite water conveyance infrastructure to the Project site for potable water and irrigation water. Water distribution will be by an underground distribution system to be installed as per the City of Tracy standards and specifications. All offsite water utility improvements will be in or adjacent to existing roadways along the perimeter of the Project site, thereby limiting any potential impact to areas that were not already disturbed.

Estimated Project Water Demands

A Water Distribution System Hydraulic Network Analysis was prepared by Blackwater Consulting Engineers for the proposed Project on February 3, 2023 (as provided in Appendix D). As part of the Analysis, the water demands for the Project were estimated based on the unit water demand factors adopted in the 2020 Water System Master Plan (WSMP) Update. The total annual potable water demand for the Project is approximately 3.68 acre-ft per year (af/yr) based on a unit water demand factor of 2.0 af/ac/yr for commercial land use and a unit water demand factor

of 1.9 af/ac/yr for non-residential irrigation land use. Maximum day demands are estimated to be 170 percent of average day demands, and peak hour demands are estimated to be 290 percent of average day demands. Table UTIL-1 summarizes the estimated water demands for the Project.

TABLE UTIL-1: ESTIMATED PROJECT WATER DEMANDS

LAND USE DESIGNATION	*ACREAGE*	*UNIT POTABLE WATER DEMAND FACTOR[B], AF/AC/YR*	*ANNUAL POTABLE WATER DEMAND, AF/YR*
Site[A]	1.67	--	--
Commercial[B]	1.42	2.00	2.85
Landscape Irrigation[B]	0.25	1.90	0.48
UAFW[C]	--	--	0.35
TOTAL	**--**	**--**	**3.68**

NOTES: [A] BASED ON TRU BY HILTON PLAN SET.
[B] CONSISTENT WITH ASSUMPTIONS IN THE 2020 WSMP UPDATE - UNIT WATER DEMAND FACTOR TO BE APPLIED TO 85 PERCENT OF THE TOTAL GROSS ACRES ONLY, ASSUMING 15 PERCENT OF THE GROSS ACREAGE IS ASSUMED TO BE LANDSCAPE.
[C] UNACCOUNTED-FOR WATER (UAFW) IS EQUAL TO 9.6 PERCENT OF TOTAL WATER DEMAND.
SOURCE: BLACKWATER CONSULTING ENGINEERS, 2023.

Based on the modeling results, the Project does not significantly impact the existing system deficiencies. There is sufficient storage capacity to serve the Project. No off-site improvements are required to serve the Project.

Conclusion

Overall, according to the Water Distribution System Hydraulic Network Analysis, the City of Tracy currently has sufficient storage capacity in Zones 1 and 2 (existing system operations) and Zone 3 (future alternative system operations) to meet the needs of the proposed Project. The proposed Project would not result in insufficient water supplies available to serve the proposed Project from existing entitlements and resources. Therefore, the proposed Project would result in a **less than significant** impact to water supplies.

Wastewater

The provision of public services and the construction of onsite infrastructure improvements will be required to accommodate the development of the proposed Project. The proposed Project would require extensions of offsite wastewater conveyance infrastructure to the Project site. Wastewater lines would be connected via existing lines along S. Corral Hollow Road and Grant Line Road. All offsite water utility improvements will be in or adjacent to existing roadways along the perimeter of the Project site, thereby limiting any potential impact to areas that were not already disturbed.

Sewer generated from the Project is proposed to flow into the existing sewer trunkline in Corral Hollow Road. The Corral Hollow Sewer System consists of gravity sewer pipelines in Corral Hollow Road. A majority of the sewer from the Corral Hollow Sewer System flows into the Larch Pump Station where sewer flows are pumped to the wastewater treatment plant (WWTP).

Estimated Project Sewer Flows

A Sewer Collection System Hydraulic Capacity Analysis was prepared for the proposed Project by Blackwater Consulting Engineers on February 3, 2023 (as provided in Appendix E).

As part of the Analysis, the average dry weather flow (ADWF) for the Project was calculated based on the wastewater generation factors adopted in the 2012 Wastewater Master Plan (WWMP). The total ADWF for the Project is approximately 1,904 gallons per day (gpd) based on a wastewater generation factor of 1,140 gpd/gross acre for the commercial land use designation. Table UTIL-2 presents the estimated Project ADWF.

TABLE UTIL-2: ESTIMATED PROJECT ADWF

LAND USE DESIGNATION	*GROSS ACREAGE*	*GENERATION FACTOR, GPD/GROSS ACRE*	*ADWF. GPD*
Commercial	1.67	1,140	1,904

SOURCE: BLACKWATER CONSULTING ENGINEERS, 2023.

PWWF includes the peak dry weather flow (PDWF) and the rainfall induced inflow/infiltration. The total estimated PWWF is 6,494 gpd. Table UTIL-3 provides the values for parameters used to estimate the PWWF.

TABLE UTIL-3: ESTIMATED PROJECT PWWF

PARAMETER	*VALUE*
Peaking Factor	3.00
Gross Acreage	1.67
PDWF[1], gpd	5,711
Infiltration[2], gpd	114
Inflow[3], gpd	668
PWWF[4], gpd	**6,494**

NOTES: [1]PDWF IS EQUAL TO ADWF MULTIPLY BY THE PEAKING FACTOR
[2]INFILTRATION IS EQUAL TO SIX (6) PERCENT OF THE ADWF
[3]INFLOW IS EQUAL TO THE GROSS ACREAGE MULTIPLY BY 400 GAL/AC-DAY
[4]PWWF IS EQUAL TO THE SUMMATION OF THE PDWF, INFILTRATION, AND INFLOW.
SOURCE: BLACKWATER CONSULTING ENGINEERS, 2023.

The model results indicate that the existing Corral Hollow Sewer System has capacity to serve the Project based on the estimated PWWFs in 2023 and 2024. Additionally, the model results indicate that the existing Corral Hollow Sewer System has capacity to serve the Project with the Phase 2 parallel pipeline improvement.

Based on the evaluation completed as part of the Sewer Collection System Hydraulic Capacity Analysis, the existing Corral Hollow Sewer System and the Larch Pump Station have the capacity to serve the Project. No additional off-site improvements are required to serve the Project. Additionally, preliminary review indicates the utility plan meets City requirements for on-site sewer improvements.

Conclusion

Ultimately, the sanitary sewer collection system will be an underground collection system installed as per the City of Tracy standards and specifications. Sanitary sewer disposal and treatment will be to the City of Tracy WWTP. The development of the proposed Project would not exceed the wastewater discharge requirements in the WDR Order. Therefore, the proposed Project is anticipated to have a **less than significant** impact relative to this topic.

Storm Drainage

Because the proposed Project increases impervious surface area from an existing undeveloped and predominately previous site, the Project site could increase runoff significantly. Project impacts to stormwater are considered potentially significant. Onsite storm drainage would be installed to serve the proposed Project. Development of the proposed Project would include construction of a new storm drainage system.

Pursuant to section 11.34.210 Design Standards of the City's Municipal Code, installation of the Project's storm drain system would be required to conform to the design criteria, standard plans and specifications and the inspection and testing procedures set forth in the applicable City public improvement design standards. Thus, the proposed storm drainage collection and detention system will be subject to the SWRCB and City of Tracy regulations, including: Tracy Municipal Code, Tracy Storm Drain Master Plan, 2012; Phase II, NPDES Permit Requirements; NPDES-MS4 Permit Requirements; and LID Guidelines.

To that end, the Wood Rogers prepared a Stormwater Runoff Management Technical Memorandum on January 4, 2023 (as provided in Appendix F), which identifies how the proposed Project would mitigate for potential discharges on and near the Project site as well as further downstream. The Technical Memorandum includes four recommendations:

5. The Project either should be conditioned to demonstrate to the satisfaction of the City Engineer that infiltration is feasible and that the concept shown on the Project's Preliminary Plan meets the requirements of the Multi-Agency Post Construction Stormwater Standards Manual, otherwise, the applicant must provide an alternative drainage and stormwater quality treatment configuration that meets the City's Design Standards.
6. It should be noted in the Project Conditions of Approval that a stormwater pump system and flow-through planter configuration will be required in order to meet the City's Design Standards unless the applicant demonstrates to the satisfaction of the City Engineer that the configuration shown on the Preliminary Plans (or an alternative configuration) meets all of the applicable requirements.
7. Appropriate calculations will need to be provided with the Project's Design Plans in order to demonstrate that the hydraulic grade lines on the Project will meet the drainage constraints.
8. The Project should be conditioned to provide a maintenance plan for the site drainage system and to maintain the system in perpetuity.

According to the City,[5] storm drain issues identified in the Technical Memorandum have been resolved and the recommendations in the Memorandum will be City conditions of approval for the Project. Therefore, impacts from Project implementation would be **less than significant**.

Responses d), e): Less than Significant. The City of Tracy contracts with Tracy Disposal Service, a private company, for solid waste collection and disposal. Based on the most recent waste generation factor provided by CalRecycle for hotel/motel uses, the proposed Project is expected to generate approximately 156 pounds per day of solid waste upon full buildout, which is equivalent to less than 0.08 tons per day; refer to Table UTIL-4.

TABLE UTIL-4: ESTIMATED SOLID WASTE GENERATION[6]

LAND USE	*GENERATION FACTOR(1)*	*PROJECT*	*ESTIMATED SOLID WASTE (LBS/DAY)*
Hotel/Motel	2 lbs/room/day	78 rooms	156

(1) CALRECYCLE 2023

Currently, the permitted capacity of the Foothill Landfill is 102 million cubic yards. The remaining capacity of the facility is approximately 95 million cubic yards. As noted previously, the remaining capacity of the facility is approximately 95 million cubic yards. Current permits indicate a closure in 2054. There are no plans to expand the Foothill Landfill or build a new one to accommodate Tracy's waste since the Foothill Landfill is expected to meet the City's needs for the foreseeable future. The addition of the volume of solid waste associated with the proposed Project to the Foothill Landfill would not exceed the landfill's remaining capacity.

Overall, the proposed Project would be required to comply with applicable State and local requirements including those pertaining to solid waste, construction waste diversion, and recycling. The City would coordinate development of the proposed Project with Tracy Disposal Service. Furthermore, the addition of the volume of solid waste associated with the proposed Project, approximately 0.08 tons per day, would increase the total tons of solid waste to the MRF; however, this increase would not cause an exceedance of the landfill's remaining capacity. Therefore, the proposed Project would not generate solid waste in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals, or exceed any State or local standards associated with solid waste. This is a **less-than-significant** impact.

[5] Personal communication with Alan Bell, Senior Planner, City of Tracy, March 21, 2023.
[6] See: https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates

XV. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?			X	
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			X	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

RESPONSES TO CHECKLIST QUESTIONS

Response a): Less than Significant. As described throughout the analysis above, the proposed Project would not result in any significant impacts that would substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal to the environment. All potentially significant impacts related to plant and animal species would be mitigated to a less than significant level. The proposed Project would be required to implement a SWPPP aimed at reducing stormwater pollutants and runoff during construction, as well as through compliance of various other state, regional and local standards. Specifically related to ensuring the continued sustainability of biological resources through adaptive management, Mitigation Measure BIO-2 requires the SJMSCP Monitoring Plan an Annual Report process, Biological Monitoring Plan, SJMSCP Compliance Monitoring Program, and the SJMSCP Adaptive Management Plan. The Project proponent shall seek coverage under the SJMSCP to mitigate for habitat impacts to covered special status species that would reduce any potentially significant impacts to a less than significant level. Through the full mitigation of biological impacts, the Project would not result in any cumulative impacts, related to biological resources. These are **less-than-significant** impacts.

Response b): Less than Significant. As described throughout the analysis above, the proposed Project would not result in any significant individual or cumulative impacts that would not be mitigated to less than significant levels. Therefore, these are **less-than-significant** impacts.

Response c): Less than Significant. As described throughout the analysis above, the proposed Project would not result in any significant impacts that would have environmental effects which will cause substantial adverse effects on humans. The analysis in the relevant sections above provides standards and mitigation measures to reduce any potentially significant impacts on humans to less than significant levels. A variety of mitigation measures including those related to aesthetics and light and glare, GHG and air quality, cultural resources, hazardous materials, seismic hazards, water pollution and water quality, and noise, ensure any adverse effects on humans are reduce to an acceptable standard. Therefore, these are **less-than-significant** impacts.

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APPENDIX A

Air Quality, Greenhouse Gas, and Energy Appendices

CONTENTS

APPENDIX A.1

CalEEMod Outputs

TRU Hilton - San Joaquin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

TRU Hilton

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hotel	78.00	Room	1.96	113,256.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Year 2024 is assumed buildout year.

Land Use - 78-room hotel over 1.96 acres.

Construction Phase -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Demolition -

Grading - Site is relatively flat.

Architectural Coating - VOC limits for exterior and interior building coatings to be 50 g/L or less (per SJVAPCD Rule 4601).

TRU Hilton - San Joaquin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Vehicle Trips - Trips consistent with trips data provided by traffic consultant (Kimley Horn) (7.99 trips/unit/day)

Vehicle Emission Factors -

Area Coating - VOC limits for extrerior and interior building coatings to be 50 g/L or less (per SJVAPCD Rule 4601).

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - VOC limits for extrerior and interior building coatings to be 50 g/L or less (per SJVAPCD Rule 4601).

Fleet Mix -

Vehicle Emission Factors -

Vehicle Emission Factors -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	50
tblAreaCoating	Area_EF_Nonresidential_Interior	150	50
tblAreaCoating	Area_EF_Residential_Exterior	150	50
tblAreaCoating	Area_EF_Residential_Interior	150	50
tblAreaMitigation	UseLowVOCPaintParkingValue	150	50
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	5
tblLandUse	LotAcreage	2.60	1.96
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripNumber	0.00	750.00
tblVehicleTrips	ST_TR	8.19	7.99
tblVehicleTrips	SU_TR	5.95	7.99
tblVehicleTrips	WD_TR	8.36	7.99

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0935	0.7383	0.7766	1.8600e-003	0.0636	0.0291	0.0927	0.0215	0.0280	0.0495	0.0000	161.2127	161.2127	0.0183	6.5600e-003	163.6267
2024	0.3448	0.6157	0.7445	1.5700e-003	0.0358	0.0239	0.0597	9.6300e-003	0.0230	0.0327	0.0000	133.9120	133.9120	0.0172	2.9600e-003	135.2245
Maximum	**0.3448**	**0.7383**	**0.7766**	**1.8600e-003**	**0.0636**	**0.0291**	**0.0927**	**0.0215**	**0.0280**	**0.0495**	**0.0000**	**161.2127**	**161.2127**	**0.0183**	**6.5600e-003**	**163.6267**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0935	0.7383	0.7766	1.8600e-003	0.0636	0.0291	0.0927	0.0215	0.0280	0.0495	0.0000	161.2126	161.2126	0.0183	6.5600e-003	163.6265
2024	0.3448	0.6157	0.7445	1.5700e-003	0.0358	0.0239	0.0597	9.6300e-003	0.0230	0.0327	0.0000	133.9119	133.9119	0.0172	2.9600e-003	135.2244
Maximum	**0.3448**	**0.7383**	**0.7766**	**1.8600e-003**	**0.0636**	**0.0291**	**0.0927**	**0.0215**	**0.0280**	**0.0495**	**0.0000**	**161.2126**	**161.2126**	**0.0183**	**6.5600e-003**	**163.6265**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**8-1-2023**	**10-31-2023**	0.5229	0.5229
2	**11-1-2023**	**1-31-2024**	0.4642	0.4642
3	**2-1-2024**	**4-30-2024**	0.4367	0.4367
4	**5-1-2024**	**7-31-2024**	0.3702	0.3702
		Highest	0.5229	0.5229

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4686	1.0000e-005	7.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3900e-003	1.3900e-003	0.0000	0.0000	1.4800e-003
Energy	0.0162	0.1469	0.1234	8.8000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	227.1926	227.1926	0.0140	4.2500e-003	228.8081
Mobile	0.2540	0.3562	2.1506	4.6700e-003	0.4668	3.9000e-003	0.4707	0.1248	3.6500e-003	0.1285	0.0000	431.4869	431.4869	0.0272	0.0244	439.4247
Waste						0.0000	0.0000		0.0000	0.0000	8.6677	0.0000	8.6677	0.5123	0.0000	21.4739
Water						0.0000	0.0000		0.0000	0.0000	0.6277	1.0618	1.6895	0.0646	1.5400e-003	3.7655
Total	**0.7388**	**0.5031**	**2.2748**	**5.5500e-003**	**0.4668**	**0.0151**	**0.4819**	**0.1248**	**0.0148**	**0.1396**	**9.2954**	**659.7426**	**669.0380**	**0.6180**	**0.0302**	**693.4736**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4686	1.0000e-005	7.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3900e-003	1.3900e-003	0.0000	0.0000	1.4800e-003
Energy	0.0162	0.1469	0.1234	8.8000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	227.1926	227.1926	0.0140	4.2500e-003	228.8081
Mobile	0.2540	0.3562	2.1506	4.6700e-003	0.4668	3.9000e-003	0.4707	0.1248	3.6500e-003	0.1285	0.0000	431.4869	431.4869	0.0272	0.0244	439.4247
Waste						0.0000	0.0000		0.0000	0.0000	8.6677	0.0000	8.6677	0.5123	0.0000	21.4739
Water						0.0000	0.0000		0.0000	0.0000	0.6277	1.0618	1.6895	0.0646	1.5400e-003	3.7655
Total	**0.7388**	**0.5031**	**2.2748**	**5.5500e-003**	**0.4668**	**0.0151**	**0.4819**	**0.1248**	**0.0148**	**0.1396**	**9.2954**	**659.7426**	**669.0380**	**0.6180**	**0.0302**	**693.4736**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/1/2023	8/2/2023	5	2	
2	Grading	Grading	8/3/2023	8/8/2023	5	4	
3	Building Construction	Building Construction	8/9/2023	5/14/2024	5	200	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4	Paving	Paving	5/15/2024	5/28/2024	5	10	
5	Architectural Coating	Architectural Coating	5/29/2024	6/11/2024	5	10	

Acres of Grading (Site Preparation Phase): 1.88

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 169,884; Non-Residential Outdoor: 56,628; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	750.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	48.00	19.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.2700e-003	0.0000	6.2700e-003	3.0000e-003	0.0000	3.0000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1300e-003	0.0124	6.6400e-003	2.0000e-005		5.1000e-004	5.1000e-004		4.7000e-004	4.7000e-004	0.0000	1.5114	1.5114	4.9000e-004	0.0000	1.5236
Total	**1.1300e-003**	**0.0124**	**6.6400e-003**	**2.0000e-005**	**6.2700e-003**	**5.1000e-004**	**6.7800e-003**	**3.0000e-003**	**4.7000e-004**	**3.4700e-003**	**0.0000**	**1.5114**	**1.5114**	**4.9000e-004**	**0.0000**	**1.5236**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.6000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0771	0.0771	0.0000	0.0000	0.0778
Total	**3.0000e-005**	**2.0000e-005**	**2.6000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0771**	**0.0771**	**0.0000**	**0.0000**	**0.0778**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.2700e-003	0.0000	6.2700e-003	3.0000e-003	0.0000	3.0000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1300e-003	0.0124	6.6400e-003	2.0000e-005		5.1000e-004	5.1000e-004		4.7000e-004	4.7000e-004	0.0000	1.5114	1.5114	4.9000e-004	0.0000	1.5236
Total	**1.1300e-003**	**0.0124**	**6.6400e-003**	**2.0000e-005**	**6.2700e-003**	**5.1000e-004**	**6.7800e-003**	**3.0000e-003**	**4.7000e-004**	**3.4700e-003**	**0.0000**	**1.5114**	**1.5114**	**4.9000e-004**	**0.0000**	**1.5236**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.6000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0771	0.0771	0.0000	0.0000	0.0778
Total	**3.0000e-005**	**2.0000e-005**	**2.6000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0771**	**0.0771**	**0.0000**	**0.0000**	**0.0778**

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0142	0.0000	0.0142	6.8500e-003	0.0000	6.8500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6700e-003	0.0289	0.0174	4.0000e-005		1.2100e-003	1.2100e-003		1.1100e-003	1.1100e-003	0.0000	3.6208	3.6208	1.1700e-003	0.0000	3.6501
Total	**2.6700e-003**	**0.0289**	**0.0174**	**4.0000e-005**	**0.0142**	**1.2100e-003**	**0.0154**	**6.8500e-003**	**1.1100e-003**	**7.9600e-003**	**0.0000**	**3.6208**	**3.6208**	**1.1700e-003**	**0.0000**	**3.6501**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.9000e-004	0.0469	9.7800e-003	2.2000e-004	6.3900e-003	4.4000e-004	6.8400e-003	1.7600e-003	4.2000e-004	2.1800e-003	0.0000	21.2710	21.2710	1.2000e-004	3.3500e-003	22.2711
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	5.0000e-005	6.5000e-004	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.1928	0.1928	0.0000	0.0000	0.1944
Total	**8.7000e-004**	**0.0469**	**0.0104**	**2.2000e-004**	**6.6400e-003**	**4.4000e-004**	**7.0900e-003**	**1.8300e-003**	**4.2000e-004**	**2.2500e-003**	**0.0000**	**21.4638**	**21.4638**	**1.2000e-004**	**3.3500e-003**	**22.4654**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0142	0.0000	0.0142	6.8500e-003	0.0000	6.8500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6700e-003	0.0289	0.0174	4.0000e-005		1.2100e-003	1.2100e-003		1.1100e-003	1.1100e-003	0.0000	3.6208	3.6208	1.1700e-003	0.0000	3.6501
Total	**2.6700e-003**	**0.0289**	**0.0174**	**4.0000e-005**	**0.0142**	**1.2100e-003**	**0.0154**	**6.8500e-003**	**1.1100e-003**	**7.9600e-003**	**0.0000**	**3.6208**	**3.6208**	**1.1700e-003**	**0.0000**	**3.6501**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.9000e-004	0.0469	9.7800e-003	2.2000e-004	6.3900e-003	4.4000e-004	6.8400e-003	1.7600e-003	4.2000e-004	2.1800e-003	0.0000	21.2710	21.2710	1.2000e-004	3.3500e-003	22.2711
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	5.0000e-005	6.5000e-004	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.1928	0.1928	0.0000	0.0000	0.1944
Total	**8.7000e-004**	**0.0469**	**0.0104**	**2.2000e-004**	**6.6400e-003**	**4.4000e-004**	**7.0900e-003**	**1.8300e-003**	**4.2000e-004**	**2.2500e-003**	**0.0000**	**21.4638**	**21.4638**	**1.2000e-004**	**3.3500e-003**	**22.4654**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0785	0.6031	0.6495	1.1400e-003		0.0265	0.0265		0.0256	0.0256	0.0000	93.5236	93.5236	0.0159	0.0000	93.9206
Total	**0.0785**	**0.6031**	**0.6495**	**1.1400e-003**		**0.0265**	**0.0265**		**0.0256**	**0.0256**	**0.0000**	**93.5236**	**93.5236**	**0.0159**	**0.0000**	**93.9206**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.9000e-004	0.0403	0.0124	1.8000e-004	5.8500e-003	2.5000e-004	6.1000e-003	1.6900e-003	2.4000e-004	1.9300e-003	0.0000	17.1890	17.1890	9.0000e-005	2.6000e-003	17.9659
Worker	9.3600e-003	6.6600e-003	0.0800	2.6000e-004	0.0306	1.4000e-004	0.0308	8.1400e-003	1.3000e-004	8.2700e-003	0.0000	23.8271	23.8271	5.6000e-004	6.1000e-004	24.0234
Total	**0.0104**	**0.0470**	**0.0924**	**4.4000e-004**	**0.0365**	**3.9000e-004**	**0.0369**	**9.8300e-003**	**3.7000e-004**	**0.0102**	**0.0000**	**41.0161**	**41.0161**	**6.5000e-004**	**3.2100e-003**	**41.9892**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0785	0.6031	0.6495	1.1400e-003		0.0265	0.0265		0.0256	0.0256	0.0000	93.5234	93.5234	0.0159	0.0000	93.9205
Total	**0.0785**	**0.6031**	**0.6495**	**1.1400e-003**		**0.0265**	**0.0265**		**0.0256**	**0.0256**	**0.0000**	**93.5234**	**93.5234**	**0.0159**	**0.0000**	**93.9205**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.9000e-004	0.0403	0.0124	1.8000e-004	5.8500e-003	2.5000e-004	6.1000e-003	1.6900e-003	2.4000e-004	1.9300e-003	0.0000	17.1890	17.1890	9.0000e-005	2.6000e-003	17.9659
Worker	9.3600e-003	6.6600e-003	0.0800	2.6000e-004	0.0306	1.4000e-004	0.0308	8.1400e-003	1.3000e-004	8.2700e-003	0.0000	23.8271	23.8271	5.6000e-004	6.1000e-004	24.0234
Total	**0.0104**	**0.0470**	**0.0924**	**4.4000e-004**	**0.0365**	**3.9000e-004**	**0.0369**	**9.8300e-003**	**3.7000e-004**	**0.0102**	**0.0000**	**41.0161**	**41.0161**	**6.5000e-004**	**3.2100e-003**	**41.9892**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0689	0.5366	0.6071	1.0700e-003		0.0219	0.0219		0.0211	0.0211	0.0000	88.0815	88.0815	0.0147	0.0000	88.4482
Total	**0.0689**	**0.5366**	**0.6071**	**1.0700e-003**		**0.0219**	**0.0219**		**0.0211**	**0.0211**	**0.0000**	**88.0815**	**88.0815**	**0.0147**	**0.0000**	**88.4482**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.1000e-004	0.0380	0.0115	1.7000e-004	5.5100e-003	2.4000e-004	5.7500e-003	1.5900e-003	2.3000e-004	1.8200e-003	0.0000	15.9359	15.9359	8.0000e-005	2.4100e-003	16.6553
Worker	8.1500e-003	5.4800e-003	0.0694	2.4000e-004	0.0288	1.3000e-004	0.0290	7.6600e-003	1.2000e-004	7.7800e-003	0.0000	21.6610	21.6610	4.7000e-004	5.3000e-004	21.8305
Total	**9.0600e-003**	**0.0434**	**0.0808**	**4.1000e-004**	**0.0343**	**3.7000e-004**	**0.0347**	**9.2500e-003**	**3.5000e-004**	**9.6000e-003**	**0.0000**	**37.5969**	**37.5969**	**5.5000e-004**	**2.9400e-003**	**38.4858**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0689	0.5366	0.6071	1.0700e-003		0.0219	0.0219		0.0211	0.0211	0.0000	88.0814	88.0814	0.0147	0.0000	88.4481
Total	**0.0689**	**0.5366**	**0.6071**	**1.0700e-003**		**0.0219**	**0.0219**		**0.0211**	**0.0211**	**0.0000**	**88.0814**	**88.0814**	**0.0147**	**0.0000**	**88.4481**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.1000e-004	0.0380	0.0115	1.7000e-004	5.5100e-003	2.4000e-004	5.7500e-003	1.5900e-003	2.3000e-004	1.8200e-003	0.0000	15.9359	15.9359	8.0000e-005	2.4100e-003	16.6553
Worker	8.1500e-003	5.4800e-003	0.0694	2.4000e-004	0.0288	1.3000e-004	0.0290	7.6600e-003	1.2000e-004	7.7800e-003	0.0000	21.6610	21.6610	4.7000e-004	5.3000e-004	21.8305
Total	**9.0600e-003**	**0.0434**	**0.0808**	**4.1000e-004**	**0.0343**	**3.7000e-004**	**0.0347**	**9.2500e-003**	**3.5000e-004**	**9.6000e-003**	**0.0000**	**37.5969**	**37.5969**	**5.5000e-004**	**2.9400e-003**	**38.4858**

3.5 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.0900e-003	0.0293	0.0441	7.0000e-005		1.4100e-003	1.4100e-003		1.3000e-003	1.3000e-003	0.0000	5.8870	5.8870	1.8700e-003	0.0000	5.9337
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.0900e-003**	**0.0293**	**0.0441**	**7.0000e-005**		**1.4100e-003**	**1.4100e-003**		**1.3000e-003**	**1.3000e-003**	**0.0000**	**5.8870**	**5.8870**	**1.8700e-003**	**0.0000**	**5.9337**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3000e-004	1.5000e-004	1.9400e-003	1.0000e-005	8.1000e-004	0.0000	8.1000e-004	2.1000e-004	0.0000	2.2000e-004	0.0000	0.6048	0.6048	1.0000e-005	1.0000e-005	0.6095
Total	**2.3000e-004**	**1.5000e-004**	**1.9400e-003**	**1.0000e-005**	**8.1000e-004**	**0.0000**	**8.1000e-004**	**2.1000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**0.6048**	**0.6048**	**1.0000e-005**	**1.0000e-005**	**0.6095**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.0900e-003	0.0293	0.0441	7.0000e-005		1.4100e-003	1.4100e-003		1.3000e-003	1.3000e-003	0.0000	5.8870	5.8870	1.8700e-003	0.0000	5.9337
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.0900e-003**	**0.0293**	**0.0441**	**7.0000e-005**		**1.4100e-003**	**1.4100e-003**		**1.3000e-003**	**1.3000e-003**	**0.0000**	**5.8870**	**5.8870**	**1.8700e-003**	**0.0000**	**5.9337**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3000e-004	1.5000e-004	1.9400e-003	1.0000e-005	8.1000e-004	0.0000	8.1000e-004	2.1000e-004	0.0000	2.2000e-004	0.0000	0.6048	0.6048	1.0000e-005	1.0000e-005	0.6095
Total	**2.3000e-004**	**1.5000e-004**	**1.9400e-003**	**1.0000e-005**	**8.1000e-004**	**0.0000**	**8.1000e-004**	**2.1000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**0.6048**	**0.6048**	**1.0000e-005**	**1.0000e-005**	**0.6095**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2625					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-004	6.0900e-003	9.0500e-003	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784
Total	**0.2634**	**6.0900e-003**	**9.0500e-003**	**1.0000e-005**		**3.0000e-004**	**3.0000e-004**		**3.0000e-004**	**3.0000e-004**	**0.0000**	**1.2766**	**1.2766**	**7.0000e-005**	**0.0000**	**1.2784**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.2000e-004	1.4900e-003	1.0000e-005	6.2000e-004	0.0000	6.2000e-004	1.6000e-004	0.0000	1.7000e-004	0.0000	0.4652	0.4652	1.0000e-005	1.0000e-005	0.4689
Total	**1.8000e-004**	**1.2000e-004**	**1.4900e-003**	**1.0000e-005**	**6.2000e-004**	**0.0000**	**6.2000e-004**	**1.6000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.4652**	**0.4652**	**1.0000e-005**	**1.0000e-005**	**0.4689**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2625					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-004	6.0900e-003	9.0500e-003	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784
Total	**0.2634**	**6.0900e-003**	**9.0500e-003**	**1.0000e-005**		**3.0000e-004**	**3.0000e-004**		**3.0000e-004**	**3.0000e-004**	**0.0000**	**1.2766**	**1.2766**	**7.0000e-005**	**0.0000**	**1.2784**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.2000e-004	1.4900e-003	1.0000e-005	6.2000e-004	0.0000	6.2000e-004	1.6000e-004	0.0000	1.7000e-004	0.0000	0.4652	0.4652	1.0000e-005	1.0000e-005	0.4689
Total	**1.8000e-004**	**1.2000e-004**	**1.4900e-003**	**1.0000e-005**	**6.2000e-004**	**0.0000**	**6.2000e-004**	**1.6000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.4652**	**0.4652**	**1.0000e-005**	**1.0000e-005**	**0.4689**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2540	0.3562	2.1506	4.6700e-003	0.4668	3.9000e-003	0.4707	0.1248	3.6500e-003	0.1285	0.0000	431.4869	431.4869	0.0272	0.0244	439.4247
Unmitigated	0.2540	0.3562	2.1506	4.6700e-003	0.4668	3.9000e-003	0.4707	0.1248	3.6500e-003	0.1285	0.0000	431.4869	431.4869	0.0272	0.0244	439.4247

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	623.22	623.22	623.22	1,252,154	1,252,154
Total	623.22	623.22	623.22	1,252,154	1,252,154

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hotel	14.70	6.60	6.60	19.40	61.60	19.00	58	38	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hotel	0.536987	0.052416	0.169237	0.150872	0.026159	0.006241	0.012518	0.016886	0.000471	0.000325	0.023246	0.001119	0.003522

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	67.2744	67.2744	0.0109	1.3200e-003	67.9396
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	67.2744	67.2744	0.0109	1.3200e-003	67.9396
NaturalGas Mitigated	0.0162	0.1469	0.1234	8.8000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	159.9182	159.9182	3.0700e-003	2.9300e-003	160.8685
NaturalGas Unmitigated	0.0162	0.1469	0.1234	8.8000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	159.9182	159.9182	3.0700e-003	2.9300e-003	160.8685

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Hotel	2.99675e+006	0.0162	0.1469	0.1234	8.8000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	159.9182	159.9182	3.0700e-003	2.9300e-003	160.8685
Total		**0.0162**	**0.1469**	**0.1234**	**8.8000e-004**		**0.0112**	**0.0112**		**0.0112**	**0.0112**	**0.0000**	**159.9182**	**159.9182**	**3.0700e-003**	**2.9300e-003**	**160.8685**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Hotel	2.99675e+006	0.0162	0.1469	0.1234	8.8000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	159.9182	159.9182	3.0700e-003	2.9300e-003	160.8685
Total		**0.0162**	**0.1469**	**0.1234**	**8.8000e-004**		**0.0112**	**0.0112**		**0.0112**	**0.0112**	**0.0000**	**159.9182**	**159.9182**	**3.0700e-003**	**2.9300e-003**	**160.8685**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	727104	67.2744	0.0109	1.3200e-003	67.9396
Total		**67.2744**	**0.0109**	**1.3200e-003**	**67.9396**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	727104	67.2744	0.0109	1.3200e-003	67.9396
Total		**67.2744**	**0.0109**	**1.3200e-003**	**67.9396**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

TRU Hilton - San Joaquin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4686	1.0000e-005	7.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3900e-003	1.3900e-003	0.0000	0.0000	1.4800e-003
Unmitigated	0.4686	1.0000e-005	7.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3900e-003	1.3900e-003	0.0000	0.0000	1.4800e-003

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0263					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4423					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.0000e-005	1.0000e-005	7.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3900e-003	1.3900e-003	0.0000	0.0000	1.4800e-003
Total	**0.4686**	**1.0000e-005**	**7.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.3900e-003**	**1.3900e-003**	**0.0000**	**0.0000**	**1.4800e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0263					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4423					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.0000e-005	1.0000e-005	7.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3900e-003	1.3900e-003	0.0000	0.0000	1.4800e-003
Total	**0.4686**	**1.0000e-005**	**7.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.3900e-003**	**1.3900e-003**	**0.0000**	**0.0000**	**1.4800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.6895	0.0646	1.5400e-003	3.7655
Unmitigated	1.6895	0.0646	1.5400e-003	3.7655

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	1.97861 / 0.219845	1.6895	0.0646	1.5400e-003	3.7655
Total		**1.6895**	**0.0646**	**1.5400e-003**	**3.7655**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	1.97861 / 0.219845	1.6895	0.0646	1.5400e-003	3.7655
Total		**1.6895**	**0.0646**	**1.5400e-003**	**3.7655**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	8.6677	0.5123	0.0000	21.4739
Unmitigated	8.6677	0.5123	0.0000	21.4739

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	42.7	8.6677	0.5123	0.0000	21.4739
Total		**8.6677**	**0.5123**	**0.0000**	**21.4739**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	42.7	8.6677	0.5123	0.0000	21.4739
Total		**8.6677**	**0.5123**	**0.0000**	**21.4739**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX A.2

Energy Outputs

Source: EMFAC2021 (v1.0.1) Emissions Inventory
Region Type: County
Region: San Joaquin
Calendar Year: 2023, 2025
Season: Annual
Vehicle Classification: EMFAC202x Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	Trips	Fuel Consumption	MPG	
San Joaquin	2023	All Other Buses	Aggregate	Aggregate	Diesel	63.39460475	3393.93922	564.2119822	0.391421545	**8.670803**	
San Joaquin	2023	LDA	Aggregate	Aggregate	Gasoline	246367.0682	9973102.47	1138235.391	349.3216614	**28.54991**	
San Joaquin	2023	LDA	Aggregate	Aggregate	Diesel	705.734891	23139.8254	3023.214022	0.543997543	**42.53664**	
San Joaquin	2023	LDT1	Aggregate	Aggregate	Gasoline	22016.87719	727225.714	95173.38769	30.52486616	**23.82404**	
San Joaquin	2023	LDT1	Aggregate	Aggregate	Diesel	6.309776167	72.3140659	18.53577151	0.002954101	**24.47922**	
San Joaquin	2023	LDT2	Aggregate	Aggregate	Gasoline	99986.64004	4006976.31	463638.6569	174.3583341	**22.98127**	
San Joaquin	2023	LDT2	Aggregate	Aggregate	Diesel	269.0353638	11767.7731	1277.639106	0.369317903	**31.86353**	
San Joaquin	2023	LHD1	Aggregate	Aggregate	Gasoline	9831.305478	343356.563	146471.803	37.0137846	**9.276451**	
San Joaquin	2023	LHD1	Aggregate	Aggregate	Diesel	8858.793592	311287.78	111432.479	19.67413691	**15.82218**	
San Joaquin	2023	LHD2	Aggregate	Aggregate	Gasoline	1172.202392	40932.8123	17464.06906	4.90823024	**8.339628**	
San Joaquin	2023	LHD2	Aggregate	Aggregate	Diesel	3130.564849	115648.086	39378.56755	8.863291415	**13.04798**	
San Joaquin	2023	MCY	Aggregate	Aggregate	Gasoline	12111.77426	65765.9483	24223.54852	1.643730409	**40.01018**	
San Joaquin	2023	MDV	Aggregate	Aggregate	Gasoline	94539.47242	3309649.73	427287.8869	178.486066	**18.5429**	
San Joaquin	2023	MDV	Aggregate	Aggregate	Diesel	1386.649679	54072.4946	6485.715736	2.267270858	**23.84916**	
San Joaquin	2023	MH	Aggregate	Aggregate	Gasoline	1507.494843	13134.1796	150.8097841	2.977418428	**4.411264**	
San Joaquin	2023	MH	Aggregate	Aggregate	Diesel	642.7961913	5646.6428	64.27961913	0.600452961	**9.403972**	
San Joaquin	2023	Motor Coach	Aggregate	Aggregate	Diesel	17.50069597	2493.47591	402.1659934	0.455354651	**5.475899**	
San Joaquin	2023	OBUS	Aggregate	Aggregate	Gasoline	184.2186442	8143.5346	3685.846633	1.733278965	**4.69834**	
San Joaquin	2023	PTO	Aggregate	Aggregate	Diesel	0	19769.5175	0	4.013121008	**4.92622**	
San Joaquin	2023	SBUS	Aggregate	Aggregate	Gasoline	127.6658449	7011.40481	510.6633795	0.69096273	**10.1473**	
San Joaquin	2023	SBUS	Aggregate	Aggregate	Diesel	488.0661519	10999.7571	7067.197879	1.346323697	**8.170217**	
San Joaquin	2023	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	10.21525791	684.779876	234.7466267	0.077405114	**8.846701**	
San Joaquin	2023	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	13.70885779	939.491781	315.0295519	0.106056052	**8.858446**	
San Joaquin	2023	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	43.24157557	2453.39435	993.6914066	0.273109788	**8.98318**	
San Joaquin	2023	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	74.64743229	15398.8197	1715.397994	1.609252898	**9.568925**	**MHD**
San Joaquin	2023	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	243.75384	8276.65194	3478.367297	1.005561316	**8.230877**	**8.579141**
San Joaquin	2023	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	156.2432876	5383.85911	2229.591714	0.657027122	**8.194272**	
San Joaquin	2023	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	682.6025228	23363.9411	9740.738001	2.839033489	**8.229541**	
San Joaquin	2023	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	122.4768589	6703.21055	1747.744776	0.802391793	**8.354037**	
San Joaquin	2023	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	449.8451938	18399.4289	5200.21044	2.166542487	**8.492531**	
San Joaquin	2023	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	1174.570894	51943.6226	13578.03953	6.096265009	**8.520565**	
San Joaquin	2023	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	912.5417949	38573.6428	10548.98315	4.50612298	**8.560273**	
San Joaquin	2023	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	553.092214	25667.2012	6393.745994	2.950154535	**8.70029**	
San Joaquin	2023	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	10.69132111	510.925844	123.591672	0.060247854	**8.480399**	
San Joaquin	2023	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	696.5366058	42802.4924	8051.963163	4.748833943	**9.013264**	
San Joaquin	2023	T6 OOS Class 4	Aggregate	Aggregate	Diesel	5.905142679	392.334655	135.7001788	0.044317954	**8.852725**	
San Joaquin	2023	T6 OOS Class 5	Aggregate	Aggregate	Diesel	7.890998517	538.212595	181.3351459	0.060737656	**8.861267**	
San Joaquin	2023	T6 OOS Class 6	Aggregate	Aggregate	Diesel	24.97157764	1406.36491	573.8468541	0.156409596	**8.991551**	
San Joaquin	2023	T6 OOS Class 7	Aggregate	Aggregate	Diesel	40.57354344	10226.0217	932.3800283	1.062980063	**9.620144**	
San Joaquin	2023	T6 Public Class 4	Aggregate	Aggregate	Diesel	32.09216486	1056.60486	164.6328057	0.140824099	**7.503012**	
San Joaquin	2023	T6 Public Class 5	Aggregate	Aggregate	Diesel	76.27568061	2776.64108	391.2942415	0.361173048	**7.687841**	
San Joaquin	2023	T6 Public Class 6	Aggregate	Aggregate	Diesel	126.4582156	4446.297	648.7306462	0.576020372	**7.718993**	
San Joaquin	2023	T6 Public Class 7	Aggregate	Aggregate	Diesel	152.7305258	6768.06936	783.5075973	0.883776286	**7.658125**	
San Joaquin	2023	T6 Utility Class 5	Aggregate	Aggregate	Diesel	33.47606031	1364.93307	428.493572	0.154770907	**8.819055**	
San Joaquin	2023	T6 Utility Class 6	Aggregate	Aggregate	Diesel	6.356456131	257.430851	81.36263848	0.029104667	**8.845002**	
San Joaquin	2023	T6 Utility Class 7	Aggregate	Aggregate	Diesel	7.230830053	358.500092	92.55462468	0.040337535	**8.887506**	
San Joaquin	2023	T6TS	Aggregate	Aggregate	Gasoline	560.525111	27400.6685	11214.98642	5.873758607	**4.664929**	
San Joaquin	2023	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	1500.771839	308143.872	34487.73687	51.00604804	**6.04132**	**HHD**
San Joaquin	2023	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	1343.474448	364734.036	30873.04281	59.83110996	**6.09606**	**5.596459**
San Joaquin	2023	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	562.3598205	132501.396	12923.02868	21.97566159	**6.029461**	
San Joaquin	2023	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	28.6781176	5381.65764	469.174004	0.90785985	**5.927851**	
San Joaquin	2023	T7 POAK Class 8	Aggregate	Aggregate	Diesel	131.1211785	13188.0173	2145.142481	2.26470624	**5.823279**	
San Joaquin	2023	T7 POLA Class 8	Aggregate	Aggregate	Diesel	139.588006	18353.09	2283.659779	3.154875131	**5.817374**	
San Joaquin	2023	T7 Public Class 8	Aggregate	Aggregate	Diesel	387.066761	16533.9411	1985.652484	3.205449572	**5.158072**	
San Joaquin	2023	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	118.1878034	8595.90453	1113.329108	1.467125303	**5.859012**	
San Joaquin	2023	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	486.5561857	30707.0394	4583.359269	5.327318734	**5.76407**	
San Joaquin	2023	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	1040.735731	57042.4876	9803.730584	9.736964144	**5.858344**	
San Joaquin	2023	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	175.044521	11346.9523	805.2047965	4.507153801	**2.517543**	
San Joaquin	2023	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2638.276559	211937.817	38334.1584	34.91925222	**6.069369**	
San Joaquin	2023	T7 Utility Class 8	Aggregate	Aggregate	Diesel	23.22093261	1080.67322	297.2279374	0.186573576	**5.792209**	
San Joaquin	2023	T7IS	Aggregate	Aggregate	Gasoline	2.419215607	60.0081934	48.40366587	0.018776223	**3.195967**	
San Joaquin	2023	UBUS	Aggregate	Aggregate	Gasoline	49.369827	3719.55506	197.479308	0.791708132	**4.698139**	
San Joaquin	2023	UBUS	Aggregate	Aggregate	Diesel	78.33872382	5427.523	313.3548953	0.602229331	**9.012386**	
San Joaquin	2025	All Other Buses	Aggregate	Aggregate	Diesel	67.92171408	3454.27959	604.5032553	0.395338932	**8.737514**	
San Joaquin	2025	LDA	Aggregate	Aggregate	Gasoline	247812.193	10065418.7	1143376.643	340.6379829	**29.54873**	
San Joaquin	2025	LDA	Aggregate	Aggregate	Diesel	620.8563183	19917.7375	2643.071074	0.459921869	**43.30678**	
San Joaquin	2025	LDT1	Aggregate	Aggregate	Gasoline	20969.62889	704503.526	90823.61908	28.55436416	**24.67236**	
San Joaquin	2025	LDT1	Aggregate	Aggregate	Diesel	5.057977491	54.7985719	14.33247387	0.002232746	**24.54313**	
San Joaquin	2025	LDT2	Aggregate	Aggregate	Gasoline	105887.2734	4297523.94	491668.9279	179.0193905	**24.00591**	
San Joaquin	2025	LDT2	Aggregate	Aggregate	Diesel	305.5941154	13558.4186	1463.961841	0.410704288	**33.01261**	
San Joaquin	2025	LHD1	Aggregate	Aggregate	Gasoline	9450.489324	335570.018	140798.2097	34.90157426	**9.614753**	
San Joaquin	2025	LHD1	Aggregate	Aggregate	Diesel	8447.684296	292201.982	106261.2413	18.38163512	**15.89641**	
San Joaquin	2025	LHD2	Aggregate	Aggregate	Gasoline	1129.168714	39496.2437	16822.93138	4.600897482	**8.584465**	
San Joaquin	2025	LHD2	Aggregate	Aggregate	Diesel	3098.911716	112092.227	38980.41096	8.493201579	**13.19788**	
San Joaquin	2025	MCY	Aggregate	Aggregate	Gasoline	12009.69999	64631.0827	24019.39998	1.598967718	**40.42051**	
San Joaquin	2025	MDV	Aggregate	Aggregate	Gasoline	92446.53152	3253692.9	417141.1232	169.0306745	**19.24913**	
San Joaquin	2025	MDV	Aggregate	Aggregate	Diesel	1393.091492	51951.9772	6420.977754	2.139013823	**24.28782**	
San Joaquin	2025	MH	Aggregate	Aggregate	Gasoline	1345.73466	11738.0981	134.6272954	2.660033836	**4.412763**	
San Joaquin	2025	MH	Aggregate	Aggregate	Diesel	631.6240768	5453.24118	63.16240768	0.580283559	**9.397546**	
San Joaquin	2025	Motor Coach	Aggregate	Aggregate	Diesel	18.80772922	2514.51501	432.2016174	0.452917647	**5.551815**	
San Joaquin	2025	OBUS	Aggregate	Aggregate	Gasoline	170.8324994	7309.03024	3418.016649	1.52248184	**4.800734**	

San Joaquin	2025	PTO	Aggregate	Aggregate	Diesel	0	20105.4227	0	3.98427046	**5.046199**		
San Joaquin	2025	SBUS	Aggregate	Aggregate	Gasoline	131.6189784	7271.29468	526.4759134	0.71341232	**10.19228**		
San Joaquin	2025	SBUS	Aggregate	Aggregate	Diesel	490.2787139	10849.6548	7099.235777	1.320741795	**8.214819**	**MHD**	
San Joaquin	2025	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	10.57610418	697.742444	243.038874	0.077548733	**8.997471**	**8.711536**	
San Joaquin	2025	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	14.00551629	958.755772	321.8467643	0.106617779	**8.992457**		
San Joaquin	2025	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	47.29566683	2488.35531	1086.854424	0.272426579	**9.13404**		
San Joaquin	2025	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	78.11014265	15772.0773	1794.971078	1.605687139	**9.822634**		
San Joaquin	2025	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	252.424868	8475.97193	3602.102866	1.019116289	**8.316982**		
San Joaquin	2025	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	162.4907366	5516.89416	2318.742812	0.666350411	**8.279269**		
San Joaquin	2025	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	708.1406495	23932.0747	10105.16707	2.87788442	**8.315857**		
San Joaquin	2025	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	127.2799027	6929.15534	1816.284212	0.825964977	**8.389164**		
San Joaquin	2025	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	457.3843802	18839.146	5287.363435	2.200026822	**8.563144**		
San Joaquin	2025	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	1233.945904	53254.2945	14264.41465	6.208167542	**8.578102**		
San Joaquin	2025	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	939.5521797	39531.7219	10861.2232	4.582174014	**8.627285**		
San Joaquin	2025	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	601.2468734	26326.7381	6950.413857	3.002944814	**8.766974**		
San Joaquin	2025	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	11.09411194	521.271565	128.2479341	0.060836197	**8.568444**		
San Joaquin	2025	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	742.8431118	44239.5012	8587.266373	4.878765067	**9.067766**		
San Joaquin	2025	T6 OOS Class 4	Aggregate	Aggregate	Diesel	6.191325924	405.515484	142.2766697	0.044545776	**9.103343**		
San Joaquin	2025	T6 OOS Class 5	Aggregate	Aggregate	Diesel	8.158025029	556.294323	187.4714152	0.061223253	**9.086324**		
San Joaquin	2025	T6 OOS Class 6	Aggregate	Aggregate	Diesel	27.75525515	1453.61298	637.8157633	0.156720574	**9.275189**		
San Joaquin	2025	T6 OOS Class 7	Aggregate	Aggregate	Diesel	42.05361037	10569.5739	966.3919663	1.066856767	**9.90721**		
San Joaquin	2025	T6 Public Class 4	Aggregate	Aggregate	Diesel	30.96340517	1050.77782	158.8422685	0.137051326	**7.667039**		
San Joaquin	2025	T6 Public Class 5	Aggregate	Aggregate	Diesel	77.40598482	2785.90976	397.0927021	0.357713881	**7.788095**		
San Joaquin	2025	T6 Public Class 6	Aggregate	Aggregate	Diesel	124.4648645	4446.56253	638.5047549	0.566454177	**7.849819**		
San Joaquin	2025	T6 Public Class 7	Aggregate	Aggregate	Diesel	148.2002736	6742.4666	760.2674038	0.856702113	**7.870258**		
San Joaquin	2025	T6 Utility Class 5	Aggregate	Aggregate	Diesel	33.80713566	1371.26265	432.7313364	0.154052822	**8.90125**		
San Joaquin	2025	T6 Utility Class 6	Aggregate	Aggregate	Diesel	6.404694197	258.753793	81.98008572	0.028984726	**8.927246**		
San Joaquin	2025	T6 Utility Class 7	Aggregate	Aggregate	Diesel	7.233394318	359.399463	92.58744727	0.039964166	**8.993043**		
San Joaquin	2025	T6TS	Aggregate	Aggregate	Gasoline	531.0756316	27321.54	10625.76124	5.695995374	**4.796623**	**HHD**	
San Joaquin	2025	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	1559.383676	317454.145	35834.63687	51.17555421	**6.203238**	**5.689878**	
San Joaquin	2025	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	1399.986354	379791.503	32171.68641	59.50406302	**6.382615**		
San Joaquin	2025	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	592.9033383	137971.507	13624.91871	22.13949036	**6.231919**		
San Joaquin	2025	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	31.09466321	5773.39367	508.7086901	0.965450648	**5.979999**		
San Joaquin	2025	T7 POAK Class 8	Aggregate	Aggregate	Diesel	137.4284865	13680.6366	2248.330039	2.333991731	**5.861476**		
San Joaquin	2025	T7 POLA Class 8	Aggregate	Aggregate	Diesel	157.478818	19849.822	2576.353462	3.419583803	**5.804748**		
San Joaquin	2025	T7 Public Class 8	Aggregate	Aggregate	Diesel	386.4284577	16615.451	1982.377988	3.157962941	**5.261446**		
San Joaquin	2025	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	121.0999578	8533.43151	1140.761603	1.428680336	**5.972947**		
San Joaquin	2025	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	518.3758674	30855.2217	4883.100671	5.328325632	**5.790791**		
San Joaquin	2025	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	1163.187559	58572.1124	10957.22681	9.897066107	**5.918129**		
San Joaquin	2025	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	167.5568448	10862.3368	770.7614863	4.227120943	**2.569677**		
San Joaquin	2025	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2947.082282	219605.844	42821.10556	35.73125002	**6.146044**		
San Joaquin	2025	T7 Utility Class 8	Aggregate	Aggregate	Diesel	24.5522509	1096.54573	314.2688115	0.187591616	**5.845388**		
San Joaquin	2025	T7IS	Aggregate	Aggregate	Gasoline	1.372290651	54.2951776	27.45679134	0.014900233	**3.643915**		
San Joaquin	2025	UBUS	Aggregate	Aggregate	Gasoline	50.67993554	3818.16315	202.7197421	0.812722391	**4.697992**		
San Joaquin	2025	UBUS	Aggregate	Aggregate	Diesel	73.34639924	4977.17265	293.3855969	0.526331001	**9.456355**		

On-road Mobile (Operational) Energy Usage

Unmitigated:

Step 1:

Therefore:

Average Daily VMT:

3,431	Source: CalEEMod

Step 2: Given:

Fleet Mix (CalEEMod Output)

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
53.70%	5.24%	16.92%	15.09%	2.62%	0.62%	1.25%	1.69%	0.05%	0.03%	2.32%	0.11%	0.35%

And:

Gasoline MPG Factors for each Vehicle Class - Year 2023 (EMFAC2021 Output)

LDA	LDT1	LDT2	MDV	MCY	MH
29.549	24.672	24.006	19.249	40.421	4.413

Diesel MPG Factors for each Vehicle Class - Year 2023 (EMFAC2021 Output)

LHD1	LHD2	MHD	HHD	OBUS	UBUS	SBUS
15.896	13.198	8.712	5.690	4.801	9.456	8.215

Therefore:

Weighted Average MPG Factors

Gasoline: **26.8** Diesel: **11.2**

Step 3: **Therefore:**

120	**daily gallons of gasoline**	**20**	**daily gallons of diesel**

or

43,762	**annual gallons of gasoline**	**7,135**	**annual gallons of diesel**

Off-road Mobile (Construction) Energy Usage

Note: For the sake of simplicity, and as a conservative estimation, it was assumed that all off-road vehicles use diesel fuel as an energy source.

Given Factor:	**194.8**	**metric tons**	**CO2**	**(provided in CalEEMod Output File)**
Conversion Factor:	2204.6262	pounds	per metric ton	
Intermediate Result:	**429,361**	**pounds**	**CO2**	
Conversion Factor:	22.38	pounds	CO2 per 1 gallon of diesel fuel	Source: U.S. EIA, 2016
Final Result:	**19,185**	**gallons**	**diesel fuel**	http://www.eia.gov/tools/faqs/faq.cfm?id=307&t=11

Mitigated Onsite Scenario	Total CO2 (MT/yr) (provided in CalEEMod Output File)
Site Preparation	1.5236
Grading	3.6501

On-road Mobile (Construction) Energy Usage - Site Preparation

Note: Year 2021 MPG factors were derived for construction-releated energy consumption (for the sake of a conservative estimate).

Step 1: **Total Daily Worker Trips (CalEEMod Output)**

8

Worker Trip Length (miles) (CalEEMod Output)

16.8

Therefore:

Average Worker Daily VMT:

134

Step 2: Given:

Assumed Fleet Mix for Workers (Percentage mix is provided on Appendix A: Calculation Details for CalEEMOD p. 15)

LDA	LDT1	LDT2
0.5	0.25	0.25

And:

Gasoline MPG Factors for each Vehicle Class (EMFAC2021 Output) - Year 2023

LDA	LDT1	LDT2
28.55	23.82	22.98

Therefore:

Weighted Average Worker MPG Factor

26.0

Step 3: **Therefore:**

5.2 **Worker daily gallons of gasoline**

Step 4:

2	**# of Days (CalEEMod Output)**

Therefore:

Result:

10	**Total gallons of gasoline**

On-road Mobile (Construction) Energy Usage - Grading

Note: Year 2021 MPG factors were derived for construction-releated energy consumption (for the sake of a conservative estimate).

Step 1:

Total Daily Worker Trips (CalEEMod Output)

10

Total Hauling Trips (CalEEMod Output)

750

Worker Trip Length (miles) (CalEEMod Output)

16.8

Hauling Trip Length (miles) (CalEEMod Output)

20

Therefore:

Average Worker Daily VMT:

168

Average Vendor Daily VMT:

15,000

Step 2: Given:

Assumed Fleet Mix for Workers

LDA	LDT1	LDT2
0.5	0.25	0.25

(Percentage mix is provided on Appendix A: Calculation Details for CalEEMOD p. 15)

Fleet Mix for Workers (Conservative Estimate)

MHD	HHD
0%	100%

And:

Gasoline MPG Factors for each Vehicle Class (EMFAC2021 Output) - Year 2023

LDA	LDT1	LDT2
28.55	23.82	22.98

Diesel:

MHD	HHD
8.58	5.60

Therefore:

Weighted Average Worker MPG Factor

26.0

Weighted Average Hauling (Diesel) MPG Factor

5.6

Step 3: **Therefore:**

6.5 Worker daily gallons of gasoline

Step 4: 4 **# of Days (CalEEMod Output)**

Therefore:

Result: **26** **Total gallons of gasoline**

Therefore:

2,680 **Total gallons of diesel**

On-road Mobile (Construction) Energy Usage - Building Construction

Note: Year 2021 MPG factors were derived for construction-releated energy consumption (for the sake of a conservative estimate).

Step 1:

Total Daily Worker Trips (CalEEMod Output)

48

Total Daily Vendor Trips (CalEEMod Output)

19

Worker Trip Length (miles) (CalEEMod Output)

16.8

Vendor Trip Length (miles) (CalEEMod Output)

6.6

Therefore:

Average Worker Daily VMT:

806

Average Vendor Daily VMT:

125

Step 2:

Given:

Assumed Fleet Mix for Workers (Percentage mix is provided on Appendix A: Calculation Details for CalEEMOD p. 15)

LDA	LDT1	LDT2
0.5	0.25	0.25

Fleet Mix for Workers (CalEEMod Output)

MHD	HHD
100%	0%

Assumed Fleet Mix for Vendors

And:

MPG Factors for each Vehicle Class (from EMFAC2021) - Year 2023

Gasoline:

LDA	LDT1	LDT2
28.55	23.82	22.98

Diesel:

MHD	HHD
8.58	5.60

Therefore:

Weighted Average Worker (Gasoline) MPG Factor

26.0

Weighted Average Vendor (Diesel) MPG Factor

8.6

Step 3:

Therefore:

31 **Worker daily gallons of gasoline**

Therefore:

15 **Vendor daily gallons of diesel**

Step 4:

200 **# of Days (CalEEMod Output)**

Therefore:

6,209 **Total gallons of gasoline**

Therefore:

2,923 **Total gallons of diesel**

On-road Mobile (Construction) Energy Usage - Paving

Note: Year 2021 MPG factors were derived for construction-releated energy consumption (for the sake of a conservative estimate).

Step 1: **Total Daily Worker Trips (CalEEMod Output)**

13

Worker Trip Length (miles) (CalEEMod Output)

16.8

Therefore:

Average Worker Daily VMT:

218

Step 2: Given:

Assumed Fleet Mix for Workers (Percentage mix is provided on Appendix A: Calculation Details for CalEEMOD p. 15)

LDA	LDT1	LDT2
0.5	0.25	0.25

And:

Gasoline MPG Factors for each Vehicle Class (EMFAC2021 Output) - Year 2023

LDA	LDT1	LDT2
28.55	23.82	22.98

Therefore:

Weighted Average Worker MPG Factor

26.0

Step 3: **Therefore:**

8.4 Worker daily gallons of gasoline

Step 4: 10 **# of Days (CalEEMod Output)**

Therefore:

Result: **84** **Total gallons of gasoline**

On-road Mobile (Construction) Energy Usage - Architectural Coating

Note: Year 2021 MPG factors were derived for construction-releated energy consumption (for the sake of a conservative estimate).

Step 1: **Total Daily Worker Trips (CalEEMod Output)**

10

Worker Trip Length (miles) (CalEEMod Output)

16.8

Therefore:

Average Worker Daily VMT:

168

Step 2: Given:

Assumed Fleet Mix for Workers (Percentage mix is provided on Appendix A: Calculation Details for CalEEMOD p. 15)

LDA	LDT1	LDT2
0.5	0.25	0.25

And:

Gasoline MPG Factors for each Vehicle Class (EMFAC2021 Output) - Year 2023

LDA	LDT1	LDT2
28.55	23.82	22.98

Therefore:

Weighted Average Worker MPG Factor

26.0

Step 3: **Therefore:**

6.5 Worker daily gallons of gasoline

Step 4:

10	**# of Days (CalEEMod Output)**

Therefore:

Result:

65	**Total gallons of gasoline**

APPENDIX B

CEQA Transportation Review

Kimley»Horn

MEMORANDUM

From: Frederik Venter, PE, Colin Ogilvie and Mehul Champaneri | Kimley-Horn and Associates

To: Tom Dumas, Office of Metropolitan Planning Chief | Caltrans

Date: January 12, 2023

Re: **Tru by Hilton CEQA Transportation Review**

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1. Introduction

This memorandum presents the findings of the vehicle miles traveled analysis and I-205/Grant Line Road Interchange ramp queuing analysis for the proposed Tru by Hiton Project.

Vehicle Miles Traveled (VMT) Analysis

This memorandum documents SB 743 compliant analysis completed for the proposed Tru By Hilton Hotel development ("project") located at 22393 Corral Hollow Road in the City of Tracy, CA. The proposed project is proposing to construct a new 4-story hotel totaling up to 78 guest rooms. The proposed hotel construction would develop a currently vacant lot and provide up to 80 vehicle parking spaces on-site. The site will be accessed from a driveway located along Corral Hollow Road.

With the passage of SB 743, Vehicle Miles Travelled (VMT) has become an important indicator for determining if a new development will result in a "significant transportation impact" under the California Environmental Quality Act (CEQA). This memorandum summarizes the VMT analysis and resultant findings for the proposed project.

Ramp Queuing Analysis

The queuing analysis is based on the updated I-205, Naglee Road, and Grant Line Road Interchange geometry, traffic counts collected in 2022, and signal timings requested from Caltrans.

The following scenarios were analyzed:

- Exisiting Conditions
- Existing Plus Project (Full Project) Conditions

For each scenario, SimTraffic 11 simulated the ramp queuing to study the sufficiency of each ramp's storage capacity and to verify queues do not extend to the freeway mainline. Ramp queuing analysis was performed for weekday AM and PM peak hours. This memorandum reports the findings of the ramp queuing analysis for the proposed project.

2. Vehicle Miles Traveled (VMT) Analysis

Purpose of Analysis

SB 743 is part of a long-standing policy effort by the California legislature to improve California's sustainability and reduce greenhouse gas emissions through denser infill development, a reduction in single occupancy vehicles, improved mass transit, and other actions. Recognizing that the current environmental analysis techniques are, at times, encouraging development that is inconsistent with this vision, the legislature has taken the extraordinary step to change the basis of environmental analysis for transportation impacts from Level of Service (LOS) to Vehicle Miles Travelled (VMT). VMT is understood to be a good proxy for evaluating Greenhouse Gas (GHG) and other transportation related impacts that the State is actively trying to address.

In January 2019, the Natural Resources Agency finalized updates to the CEQA Guidelines including the incorporation of SB 743 modifications. The Guidelines' changes were approved by the Office of Administrative Law and are now in effect. Specific to SB 743, Section 15064.3(c) states, "A lead agency may elect to be governed by the provisions of this section immediately. The provisions apply statewide as of July 1, 2020."

To help aid lead agencies with SB 743 implementation, the Governor's Office of Planning and Research (OPR) produced the Technical Advisory on Evaluating Transportation Impacts in CEQA (December 2018) that provides guidance about the variety of implementation questions they face with respect to shifting to a VMT metric. Key guidance from this document includes:

- VMT is the most appropriate metric to evaluate a project's transportation impact.
- OPR recommends tour- and trip-based travel models to estimate VMT, but ultimately defers to local agencies to determine the appropriate tools.
- OPR recommends measuring VMT for residential and office projects on a "per rate" basis.
- OPR states that by adding retail opportunities into the urban fabric and thereby improving retail destination proximity, local-serving retail development tends to shorten trips and reduce VMT. Generally, retail development including stores smaller than 50,000 square feet might be considered local serving.
- OPR recommends that where a project replaces existing VMT-generating land uses, if the replacement leads to a net overall decrease in VMT, the project would lead to a less-than-significant transportation impact. If the project leads to a net overall increase in VMT, then the thresholds described above should apply.
- Lead agencies have the discretion to set or apply their own significance thresholds.

The City of Tracy considers the VMT performance of residential and non-residential components of a project separately, using the efficiency metrics of VMT per capita and VMT per employee as described in the City of Tracy Transportation Master Plan Update (2022). For retail components of a project, or other customer-focused uses, the citywide VMT change is analyzed. The City of Tracy's VMT thresholds of significance are summarized below for each of these components:

- Residential – 15% below baseline (existing) average VMT per Capita

- Employment-based land uses (e.g., office) – 15% below baseline (existing) average VMT per Employee
- Customer-based non-residential land uses (e.g., retail) – No net increase in VMT

Methodology and Assumptions

Based on the land use information provided, for the purposes of SB 743 analysis and the determination of transportation related significant impacts, the following land uses were analyzed:

- Hotel

In terms of a VMT analysis, hotels are grouped into two categories, typical and destination. Typical hotels are generally those hotels with limited amenities that may include a dining area with a breakfast buffet, small gym, and sometimes a pool; generally, guests stay at these hotels because their ultimate destination is in the vicinity of the hotel. Alternatively, guests visiting destination hotels will spend the majority of their time on the hotel property or engaging in activities run by the hotel because the hotel is their ultimate destination. While both types of hotels are customer-based, and impacts are measured in terms of whether the hotel increases regional VMT, destination hotels generally require quantitative analyses while typical hotels can be assumed to result in a less than significant impact. Conversely, destination hotels do not serve pre-existing needs as they offer special amenities that aren't offered elsewhere, and guests typically spend the majority of their time on the destination hotel property. The Chaminade Resort & Spa in Santa Cruz or the Great Wolf Lodge and Resort in Manteca are examples of destination hotels while the proposed Tru by Hilton project is an example of a typical hotel. Guests will choose the hotel type based on their reason for travel, such as a work-related trip versus a spa vacation retreat.

Analysis

The following sections detail the analysis completed:

Hotel

Similar to retail stores, typical hotels such as the proposed project most often serve pre-existing needs (i.e., the hotel does not generate new trips because it meets existing demand) because their guests are staying at the hotel not because of the amenities offered by the hotel, but because of the area the hotel is located in. Because of this, typical hotels can be presumed to reduce trip lengths when a new hotel is proposed. Essentially, the assumption is that someone will travel to a newly constructed typical hotel because of its proximity to the area attraction, rather than that the proposed hotel is fulfilling an unmet need (i.e., the person had an existing need to travel to the area that was previously met by an existing hotel located in the same general area, but now is traveling to the new hotel because it is either closer to the person's origin location or located a similar distance away). Typical hotels most often they can be presumed to reduce trip lengths when a new hotel is introduced within a cluster of existing hotels located near a local destination or attraction. Essentially, a trip to a hotel is expected to occur due to someone planning to travel to Tracy, or the immediate area, but the proximity of the hotel to the surrounding attractions would drive the length of that trip and the resultant impact to the overall transportation system. Thus, the impact to the transportation system would be negligible or reduced by the introduction

of a new hotel to an area where people are already traveling and planning on staying unless the hotel significantly effects the local supply of rooms or introduces a significant new attraction.

While a specific market study for the proposed hotel is not being provided as part of this memorandum, a map showing the proximity of other similar hotels is provided as **Figure 1.** A half-mile buffer was placed around the seven existing hotels in the area, as well as the proposed project, to visually represent the lack of overlapping service area between the proposed project and the existing hotels. As shown in **Figure 1**, the proposed project, identified with a red icon, labeled "Proposed Tru by Hilton", and a yellow buffer surrounding it, will reduce trip lengths by "adding hotel opportunities into the local area, further improving hotel destination proximity"[1]. Accordingly, it is appropriate that the proposed project development be presumed, in accordance with the *Technical Advisory*, that it will result in a VMT reduction and support the goals of SB 743.

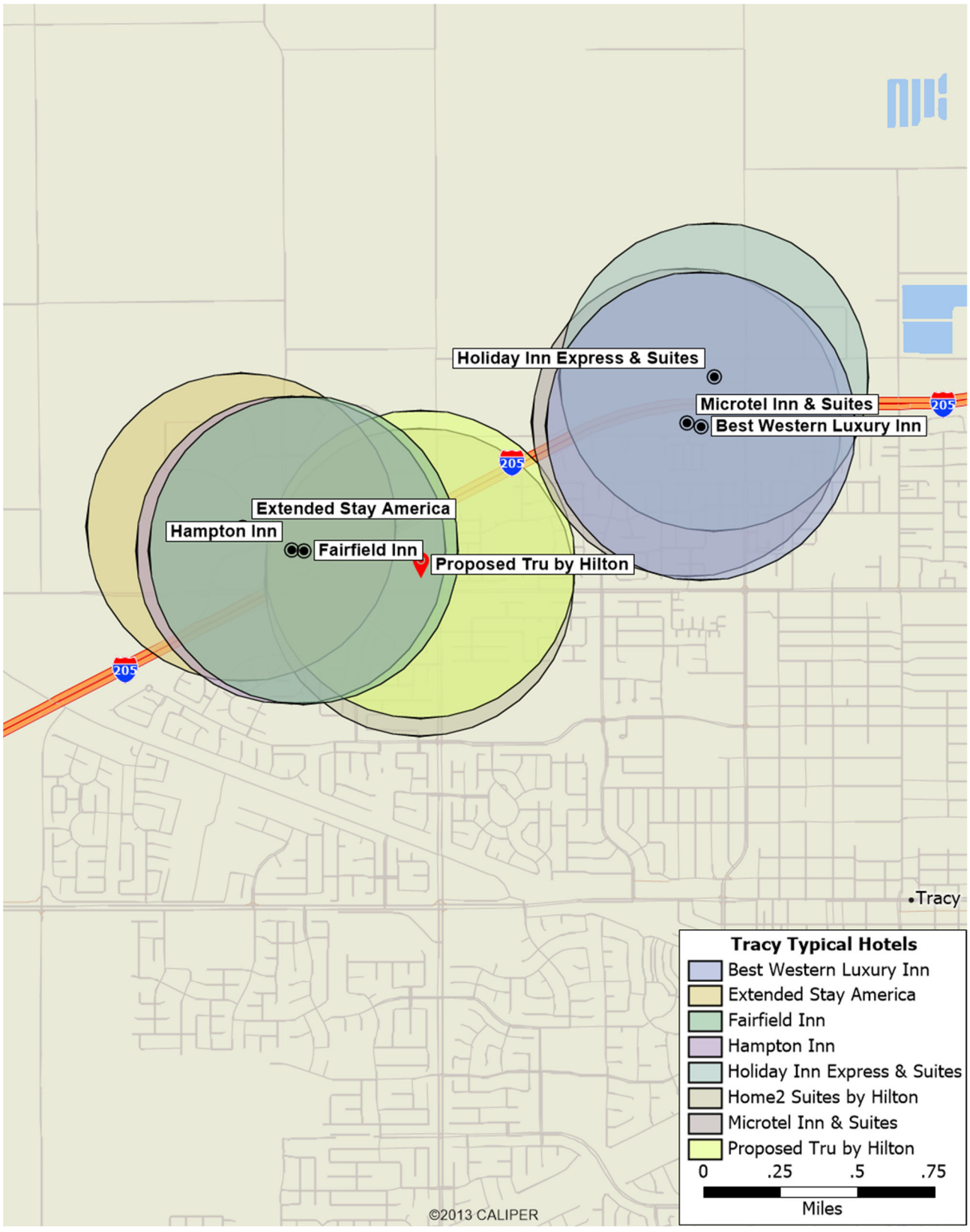
Findings

Based on the results of this analysis, the following findings are made:

- The addition of proposed hotel can shorten existing trip lengths, which would result in a net decrease in VMT. **Therefore, it is presumed that the VMT-related impact of the proposed hotel would be less than significant.**

[1] *Technical Advisory on Evaluating Transportation Impacts in CEQA*. Governor's Office of Planning and Research. December 2018. Page 16.

Figure 1 – Proximity of Project to Existing Hotels



3. Queuing Analysis

The I-205, Naglee Road, and Grant Line Road Interchange ramp queuing analysis was completed for the off-ramps only per Caltrans's *Traffic Safety Bulletin 20-02-R1: Interim Local Development Intergovernmental Review Safety Review Practitioners Guidance* to determine safety impacts to the freeway mainline. The following analysis scenarios were analyzed:

- Exisiting Conditions
- Existing Plus Project (Full Project) Conditions

Existing traffic counts are illustrated in **Figure 2**. Analysis volumes represent the peak hour volumes per intersection and were balanced as necessary between intersections. Existing signal timings were obtain from Caltrans and no modifications were made between Existing Conditions and Existing Plus Project (Full Project) Conditions.

Project trips were distributed along the roadway network based on existing count data. The following provides the weekday distribution for Project trips:

- Corral Hollow Road north of Grant Line Road – 15% IN/OUT
- Corral Hollow Road south of Grant Line Road – 25% IN/OUT
- Grant Line Road east of Corral Hollow Road – 20% IN/OUT
- I-205 north of Grant Line Road – 5% IN/OUT
- I-205 south of Grant Line Road – 25% IN/OUT
- Shopping center south of Grant Line Road, west of I-205 – 5% IN/OUT
- Shopping center north of Grant Line Road, west of I-205 – 5% IN/OUT

The project trip distribution is demonstrated in **Figure 3**, and the resulting Existing Plus Project (Full Project) volumes are provided in **Figure 4**.

The analysis utilized SimTraffic 11 with a 10-minute seeding period, four 15-minute periods and 10 runs. The average and 95th-percentile queues for each of the ten runs was averaged and shown in **Table 1** and **Table 2**. The Existing Conditions queues were calibrated based on field-verified queuing.

All ramp queuing under Existing Conditions and Existing Plus Project Conditions is within each ramp's storage capacity and does not extend to the freeway mainline. Therefore, no Project safety mitigations are required.

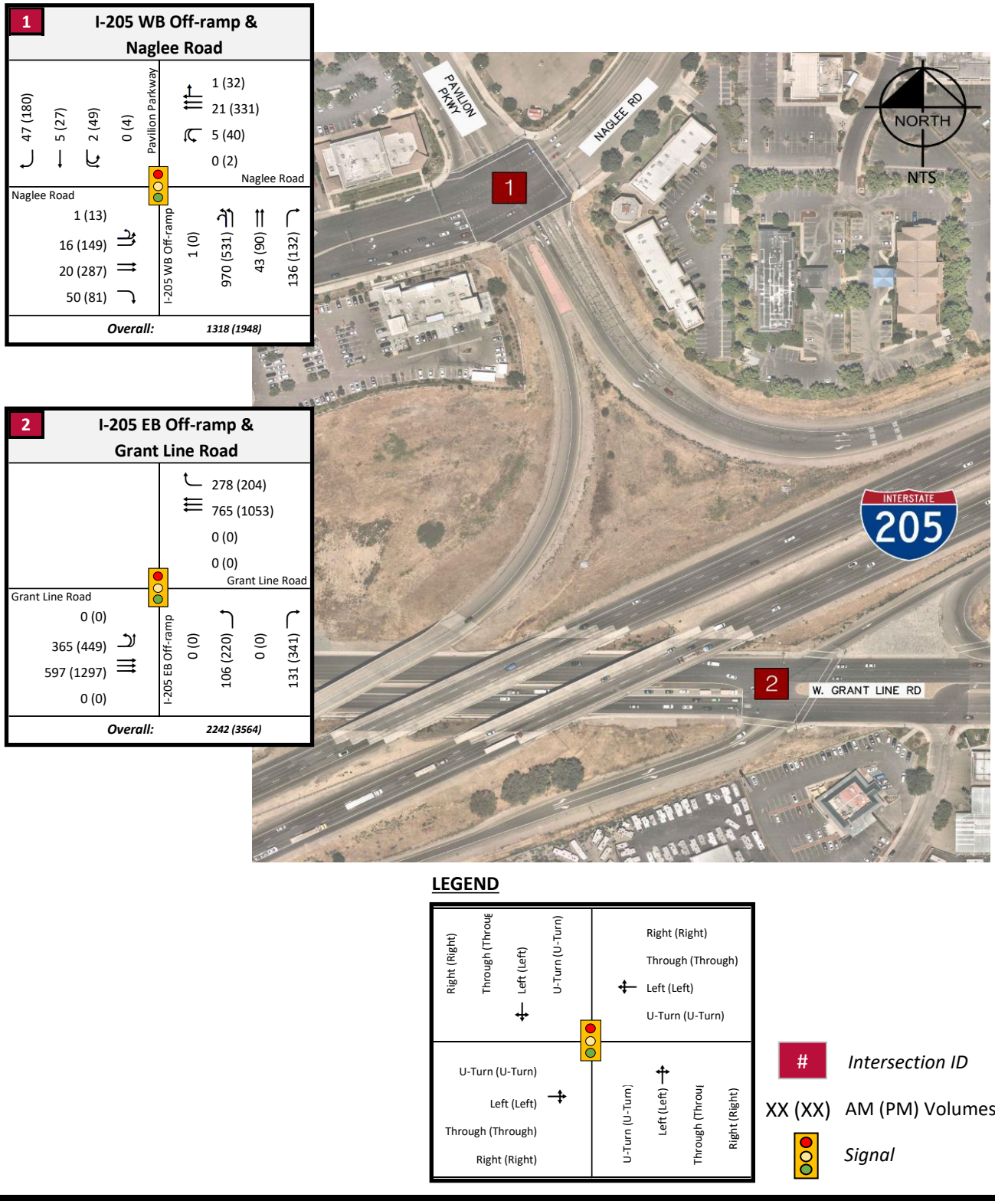


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Figure 2
Existing Conditions

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Figure 3

Project Trip Distribution

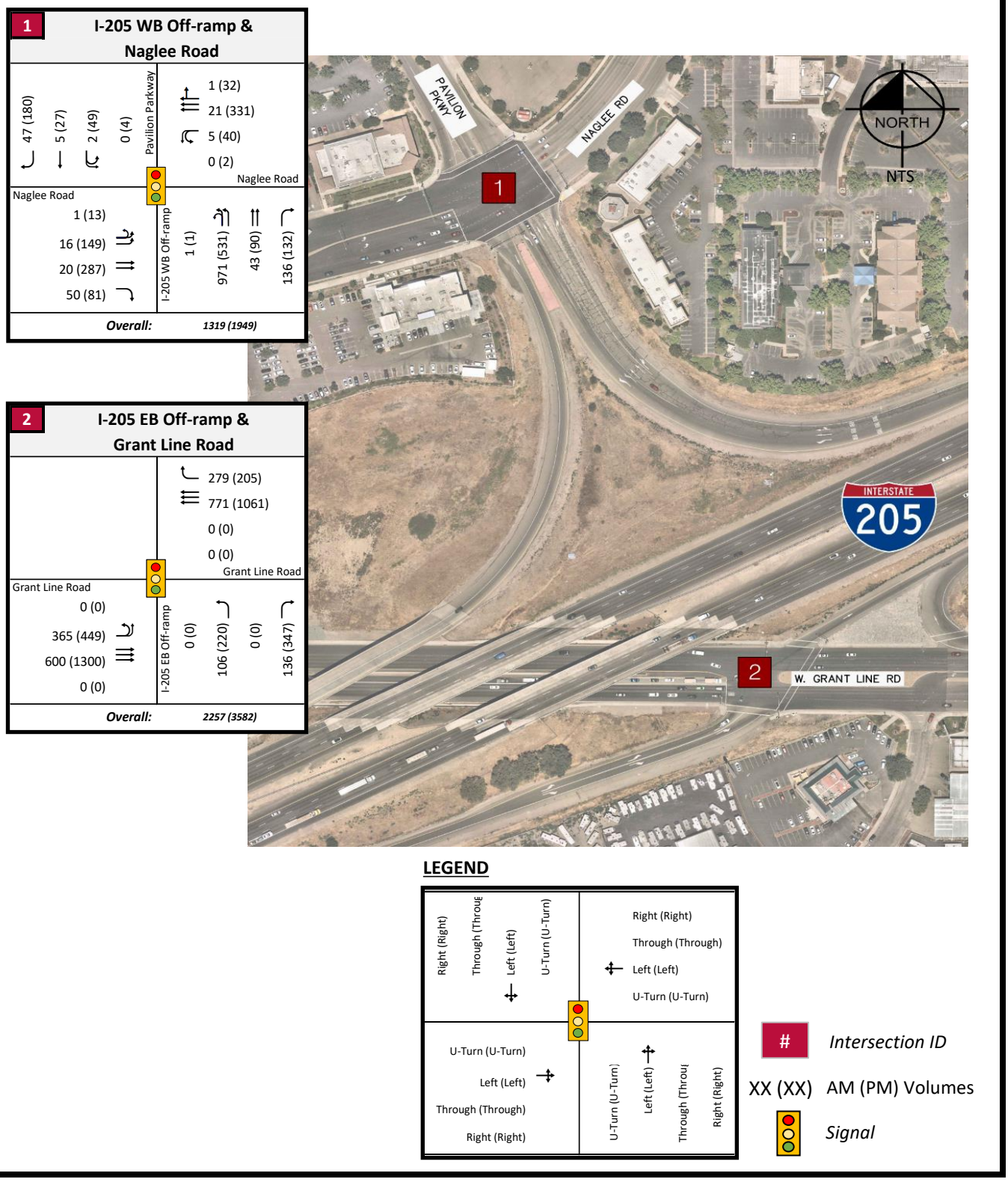

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Figure 4
Existing Plus Project

Table 1 – Existing Conditions

Intersection		Movement	Storage Length (ft)	Average Queue (ft)		95th Percentile Queue (ft)	
				AM Peak	PM Peak	AM Peak	PM Peak
1	I-205 WB Off-Ramp & Naglee Rd	EBL 1	165	0	19	4	78
		EBL 2	165	9	87	30	149
		EBT 1	550	6	71	24	125
		EBT 2	550	0	31	2	85
		EBR	165	6	11	14	30
		WBL	310	4	37	21	77
		WBT 1	635	9	112	32	172
		WBT 2	635	1	62	9	139
		WBT/R	635	0	19	5	51
		NBL 1	420	186	136	301	215
		NBL 2	420	219	166	330	244
		NBT 1	1550	7	19	31	44
		NBT 2	1550	6	16	22	42
		NBR	340	15	19	37	43
		SBL	110	1	40	11	82
		SBT	580	4	22	24	60
		SBR	580	22	46	46	81
2	I-205 EB Off-Ramp & Grant Line Rd	EBL	905	170	352	281	554
		EBT 1	1260	38	145	83	243
		EBT 2	1260	46	154	93	262
		WBT 1	655	83	182	149	277
		WBT 2	655	57	183	137	290
		WBT 3	655	110	219	192	346
		WBR	300	28	27	186	179
		NBL	355	67	149	131	241
		NBR	355	30	157	61	259

Notes:

1. Movements highlighted in blue represent I-205 off-ramp movements.

Table 2 – Exisiting Plus Project (Full Project) Conditions

Intersection		Movement	Storage Length (ft)	Average Queue (ft)		95th Percentile Queue (ft)	
				AM Peak	PM Peak	AM Peak	PM Peak
1	I-205 WB Off-Ramp & Naglee Rd	EBL 1	165	0	20	4	82
		EBL 2	165	10	91	31	148
		EBT 1	550	5	69	23	124
		EBT 2	550	1	32	8	77
		EBR	165	6	11	13	26
		WBL	310	4	36	23	74
		WBT 1	635	9	110	33	172
		WBT 2	635	0	62	6	136
		WBT/R	635	1	22	8	51
		NBL 1	420	184	142	293	218
		NBL 2	420	218	168	322	239
		NBT 1	1550	9	22	88	52
		NBT 2	1550	6	16	21	42
		NBR	340	15	19	37	43
		SBL	110	2	40	12	78
		SBT	580	4	22	25	59
		SBR	580	23	47	48	83
2	I-205 EB Off-Ramp & Grant Line Rd	EBL	905	173	430	289	791
		EBT 1	1260	36	197	83	475
		EBT 2	1260	44	191	87	436
		WBT 1	655	85	198	153	302
		WBT 2	655	57	186	137	286
		WBT 3	655	110	216	220	326
		WBR	300	32	37	202	216
		NBL	355	65	148	118	247
		NBR	355	28	171	61	291

Notes:

1. Movements highlighted in blue represent I-205 off-ramp movements.

4. Appendix

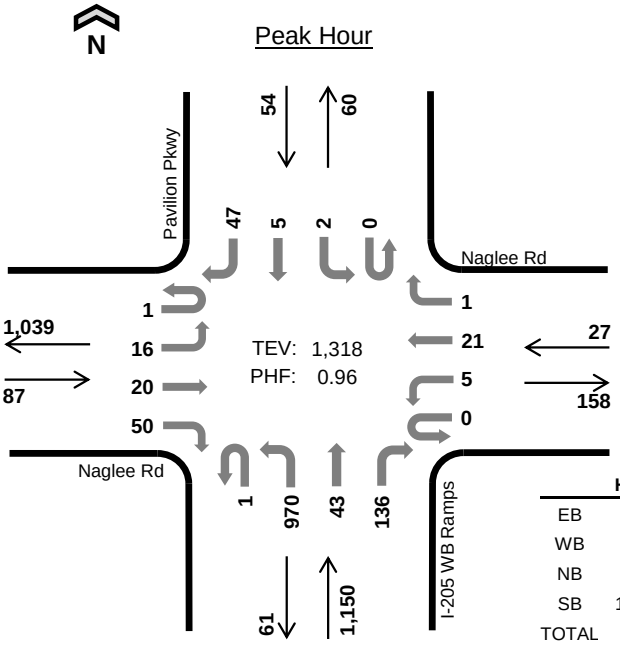
A. Traffic Counts

B. SimTraffic Reports

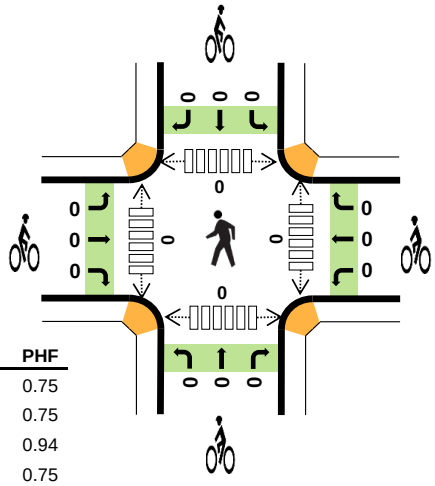
A. Traffic Counts

I-205 WB Ramps
Naglee Rd

Date: 09/29/2022
Count Period: 4:30 AM to 9:00 AM
Peak Hour: 5:30 AM to 6:30 AM



	HV %:	PHF
EB	2.3%	0.75
WB	7.4%	0.75
NB	5.6%	0.94
SB	11.1%	0.75
TOTAL	5.6%	0.96



Four-and-a-Half-Hour Count Summaries

Interval Start		Naglee Rd Eastbound				Naglee Rd Westbound				I-205 WB Ramps Northbound				Pavilion Pkwy Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
5:30 AM		0	3	3	9	0	3	5	1	0	268	10	28	0	0	0	15	345	0
5:45 AM		0	5	6	18	0	1	3	0	0	233	13	45	0	1	1	5	331	0
6:00 AM		0	4	8	9	0	0	5	0	0	245	13	30	0	1	1	16	332	0
6:15 AM		1	4	3	14	0	1	8	0	1	224	7	33	0	0	3	11	310	1,318
Peak Hour	All	1	16	20	50	0	5	21	1	1	970	43	136	0	2	5	47	1,318	0
	HV	0	0	2	0	0	1	1	0	0	54	4	6	0	0	2	4	74	0
	HV%	0%	0%	10%	0%	-	20%	5%	0%	0%	6%	9%	4%	-	0%	40%	9%	6%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
5:30 AM	1	1	16	1	*19*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 AM	0	1	14	2	*17*	0	0	0	0	*0*	0	0	0	0	*0*
6:00 AM	0	0	7	1	*8*	0	0	0	0	*0*	0	0	0	0	*0*
6:15 AM	1	0	27	2	*30*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hour	2	2	64	6	*74*	0	0	0	0	*0*	0	0	0	0	*0*

Four-and-a-Half-Hour Count Summaries

Interval Start	Naglee Rd Eastbound				Naglee Rd Westbound				I-205 WB Ramps Northbound				Pavilion Pkwy Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:30 AM	0	2	1	12	0	2	3	0	0	129	3	1	0	0	2	3	158	0
4:45 AM	0	1	1	21	0	2	8	0	0	203	8	9	0	0	1	6	260	0
5:00 AM	0	2	2	13	0	2	3	0	0	152	4	14	0	1	1	10	204	0
5:15 AM	0	2	5	16	0	0	8	1	0	225	6	22	0	0	2	8	295	917
5:30 AM	**0**	**3**	**3**	**9**	**0**	**3**	**5**	**1**	**0**	**268**	**10**	**28**	**0**	**0**	**0**	**15**	**345**	1,104
5:45 AM	**0**	**5**	**6**	**18**	**0**	**1**	**3**	**0**	**0**	**233**	**13**	**45**	**0**	**1**	**1**	**5**	**331**	1,175
6:00 AM	**0**	**4**	**8**	**9**	**0**	**0**	**5**	**0**	**0**	**245**	**13**	**30**	**0**	**1**	**1**	**16**	**332**	1,303
6:15 AM	**1**	**4**	**3**	**14**	**0**	**1**	**8**	**0**	**1**	**224**	**7**	**33**	**0**	**0**	**3**	**11**	**310**	**1,318**
6:30 AM	0	7	3	4	0	1	13	0	0	223	11	28	0	0	3	12	305	1,278
6:45 AM	0	8	6	17	0	1	12	1	0	212	13	35	0	0	0	11	316	1,263
7:00 AM	0	7	8	10	0	1	10	0	0	237	12	31	0	2	1	7	326	1,257
7:15 AM	0	14	5	12	0	0	15	0	0	185	16	39	0	0	2	8	296	1,243
7:30 AM	0	4	13	25	0	3	15	1	1	182	26	24	0	1	3	24	322	1,260
7:45 AM	0	14	18	20	0	3	24	0	0	176	25	40	0	2	7	26	355	1,299
8:00 AM	0	16	22	24	0	3	17	0	0	142	25	20	0	1	3	17	290	1,263
8:15 AM	0	25	22	30	0	2	26	1	0	135	19	22	0	0	4	18	304	1,271
8:30 AM	0	24	35	30	0	7	22	4	0	157	22	24	0	2	6	17	350	1,299
8:45 AM	0	22	28	25	1	2	30	1	0	145	29	27	0	3	5	23	341	1,285
Count Total	1	164	189	309	1	34	227	10	2	3,473	262	472	0	14	45	237	5,440	0
Peak Hour All	**1**	**16**	**20**	**50**	**0**	**5**	**21**	**1**	**1**	**970**	**43**	**136**	**0**	**2**	**5**	**47**	**1,318**	**0**
Peak Hour HV	**0**	**0**	**2**	**0**	**0**	**1**	**1**	**0**	**0**	**54**	**4**	**6**	**0**	**0**	**2**	**4**	**74**	**0**
Peak Hour HV%	**0%**	**0%**	**10%**	**0%**	**-**	**20%**	**5%**	**0%**	**0%**	**6%**	**9%**	**4%**	**-**	**0%**	**40%**	**9%**	**6%**	**0**

Note: Four-and-a-half-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:30 AM	1	0	4	0	*5*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 AM	0	0	8	0	*8*	0	0	0	0	*0*	0	0	0	0	*0*
5:00 AM	0	0	14	0	*14*	0	0	0	0	*0*	0	0	0	0	*0*
5:15 AM	0	1	11	1	*13*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 AM	**1**	**1**	**16**	**1**	***19***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:45 AM	**0**	**1**	**14**	**2**	***17***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
6:00 AM	**0**	**0**	**7**	**1**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
6:15 AM	**1**	**0**	**27**	**2**	***30***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
6:30 AM	2	1	18	2	*23*	0	0	0	0	*0*	0	0	0	0	*0*
6:45 AM	2	2	22	1	*27*	0	0	0	0	*0*	0	0	0	0	*0*
7:00 AM	3	1	17	0	*21*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	4	2	16	1	*23*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	3	0	8	3	*14*	0	0	0	0	*0*	0	0	0	0	*0*
7:45 AM	4	2	23	3	*32*	0	0	0	0	*0*	0	0	0	0	*0*
8:00 AM	0	0	15	2	*17*	0	0	0	0	*0*	0	0	0	0	*0*
8:15 AM	6	2	11	2	*21*	0	0	0	0	*0*	0	0	0	0	*0*
8:30 AM	5	2	9	3	*19*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	2	3	17	1	*23*	0	0	1	0	*1*	1	0	0	0	*1*
Count Total	34	18	257	25	*334*	0	0	1	0	*1*	1	0	0	0	*1*
Peak Hour	**2**	**2**	**64**	**6**	***74***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

Four-and-a-Half-Hour Count Summaries - Heavy Vehicles

Interval Start	Naglee Rd				Naglee Rd				I-205 WB Ramps				Pavilion Pkwy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:30 AM	0	1	0	0	0	0	0	0	0	4	0	0	0	0	0	0	5	0
4:45 AM	0	0	0	0	0	0	0	0	0	7	1	0	0	0	0	0	8	0
5:00 AM	0	0	0	0	0	0	0	0	0	13	1	0	0	0	0	0	14	0
5:15 AM	0	0	0	0	0	0	1	0	0	10	0	1	0	0	0	1	13	40
5:30 AM	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**13**	**2**	**1**	**0**	**0**	**0**	**1**	**19**	54
5:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**11**	**2**	**1**	**0**	**0**	**1**	**1**	**17**	63
6:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**1**	**0**	**8**	57
6:15 AM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**23**	**0**	**4**	**0**	**0**	**0**	**2**	**30**	**74**
6:30 AM	0	1	1	0	0	0	1	0	0	16	0	2	0	0	1	1	23	78
6:45 AM	0	0	2	0	0	0	2	0	0	17	2	3	0	0	0	1	27	88
7:00 AM	0	1	1	1	0	0	1	0	0	17	0	0	0	0	0	0	21	101
7:15 AM	0	0	4	0	0	0	2	0	0	15	0	1	0	0	0	1	23	94
7:30 AM	0	1	1	1	0	0	0	0	0	7	0	1	0	0	1	2	14	85
7:45 AM	0	1	2	1	0	1	1	0	0	20	0	3	0	0	3	0	32	90
8:00 AM	0	0	0	0	0	0	0	0	0	13	1	1	0	0	0	2	17	86
8:15 AM	0	1	4	1	0	0	2	0	0	11	0	0	0	0	1	1	21	84
8:30 AM	0	1	3	1	0	1	1	0	0	8	0	1	0	0	1	2	19	89
8:45 AM	0	0	2	0	0	1	2	0	0	16	1	0	0	0	0	1	23	80
Count Total	0	7	22	5	0	4	14	0	0	228	10	19	0	0	9	16	334	0
Peak Hour	**0**	**0**	**2**	**0**	**0**	**1**	**1**	**0**	**0**	**54**	**4**	**6**	**0**	**0**	**2**	**4**	**74**	**0**

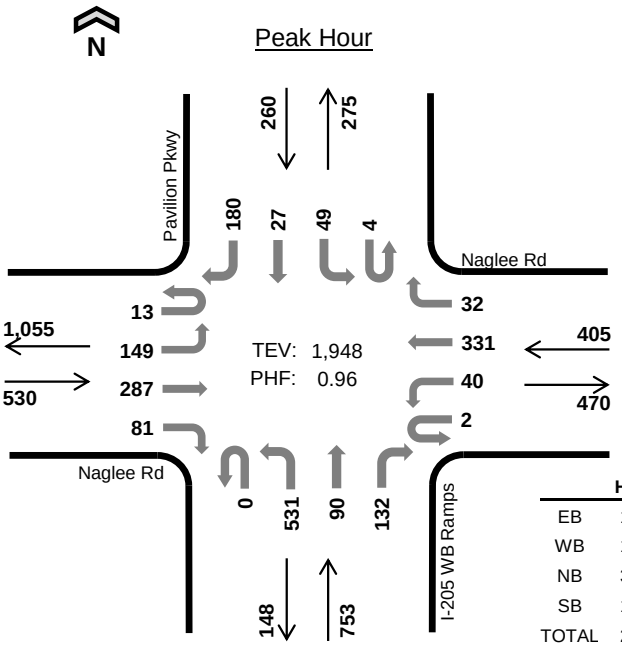
Four-and-a-Half-Hour Count Summaries - Bikes

Interval Start	Naglee Rd			Naglee Rd			I-205 WB Ramps			Pavilion Pkwy			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
6:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
6:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	1	1
Count Total	0	0	0	0	0	0	1	0	0	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

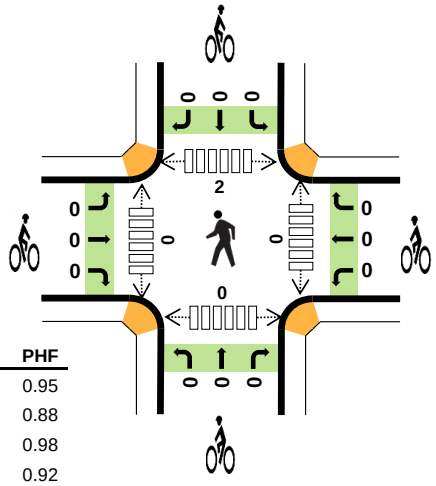
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

I-205 WB Ramps
Naglee Rd

Date: 09/29/2022
Count Period: 2:00 PM to 6:30 PM
Peak Hour: 4:15 PM to 5:15 PM



	HV %:	PHF
EB	1.1%	0.95
WB	1.0%	0.88
NB	3.2%	0.98
SB	1.9%	0.92
TOTAL	2.0%	0.96



Four-and-a-Half-Hour Count Summaries

Interval Start		Naglee Rd Eastbound				Naglee Rd Westbound				I-205 WB Ramps Northbound				Pavilion Pkwy Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:15 PM		3	40	72	22	1	13	69	8	0	142	23	28	1	16	4	38	480	0
4:30 PM		0	34	65	18	0	7	80	7	0	128	27	30	1	10	10	50	467	0
4:45 PM		3	36	79	21	1	14	84	6	0	129	21	36	2	9	3	52	496	0
5:00 PM		7	39	71	20	0	6	98	11	0	132	19	38	0	14	10	40	505	1,948
Peak Hour	All	13	149	287	81	2	40	331	32	0	531	90	132	4	49	27	180	1,948	0
	HV	0	1	4	1	0	0	3	1	0	20	1	3	0	0	1	4	39	0
	HV%	0%	1%	1%	1%	0%	0%	1%	3%	-	4%	1%	2%	0%	0%	4%	2%	2%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:15 PM	0	1	7	1	*9*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	3	0	6	3	*12*	0	0	0	0	*0*	0	0	2	0	*2*
4:45 PM	1	2	7	0	*10*	0	0	0	0	*0*	0	0	0	0	*0*
5:00 PM	2	1	4	1	*8*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hour	6	4	24	5	*39*	0	0	0	0	*0*	0	0	2	0	*2*

Four-and-a-Half-Hour Count Summaries

Interval Start	Naglee Rd Eastbound				Naglee Rd Westbound				I-205 WB Ramps Northbound				Pavilion Pkwy Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM	0	27	75	24	0	18	86	2	0	112	16	28	0	11	3	28	430	0
2:15 PM	2	26	77	24	1	9	62	2	0	102	16	30	1	8	5	39	404	0
2:30 PM	0	20	75	17	0	13	84	4	0	121	15	19	0	10	4	48	430	0
2:45 PM	2	27	78	22	0	8	57	4	0	117	19	31	0	10	5	36	416	1,680
3:00 PM	2	37	73	19	0	11	63	5	0	122	17	26	0	8	4	29	416	1,666
3:15 PM	2	30	67	14	0	5	63	3	0	133	25	29	0	9	6	34	420	1,682
3:30 PM	2	30	80	29	1	7	67	9	0	121	17	23	0	9	2	45	442	1,694
3:45 PM	2	21	74	22	1	6	72	5	0	118	23	31	2	11	5	33	426	1,704
4:00 PM	2	26	75	16	0	20	65	5	0	122	15	36	1	4	5	36	428	1,716
4:15 PM	**3**	**40**	**72**	**22**	**1**	**13**	**69**	**8**	**0**	**142**	**23**	**28**	**1**	**16**	**4**	**38**	**480**	1,776
4:30 PM	**0**	**34**	**65**	**18**	**0**	**7**	**80**	**7**	**0**	**128**	**27**	**30**	**1**	**10**	**10**	**50**	**467**	1,801
4:45 PM	**3**	**36**	**79**	**21**	**1**	**14**	**84**	**6**	**0**	**129**	**21**	**36**	**2**	**9**	**3**	**52**	**496**	1,871
5:00 PM	**7**	**39**	**71**	**20**	**0**	**6**	**98**	**11**	**0**	**132**	**19**	**38**	**0**	**14**	**10**	**40**	**505**	**1,948**
5:15 PM	4	26	78	28	1	12	67	2	0	127	22	38	0	13	5	43	466	1,934
5:30 PM	0	19	95	31	0	13	76	3	0	118	17	21	0	10	4	28	435	1,902
5:45 PM	0	26	78	17	0	15	78	8	0	94	21	47	0	7	10	33	434	1,840
6:00 PM	3	21	69	22	0	5	74	6	0	104	18	24	0	11	6	44	407	1,742
6:15 PM	3	32	78	13	0	8	50	4	0	105	21	28	1	7	1	30	381	1,657
Count Total	37	517	1,359	379	6	190	1,295	94	0	2,147	352	543	9	177	92	686	7,883	0
Peak Hour All	**13**	**149**	**287**	**81**	**2**	**40**	**331**	**32**	**0**	**531**	**90**	**132**	**4**	**49**	**27**	**180**	**1,948**	**0**
Peak Hour HV	**0**	**1**	**4**	**1**	**0**	**0**	**3**	**1**	**0**	**20**	**1**	**3**	**0**	**0**	**1**	**4**	**39**	**0**
Peak Hour HV%	**0%**	**1%**	**1%**	**1%**	**0%**	**0%**	**1%**	**3%**	**-**	**4%**	**1%**	**2%**	**0%**	**0%**	**4%**	**2%**	**2%**	**0**

Note: Four-and-a-half-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
2:00 PM	2	4	7	5	*18*	0	0	0	0	*0*	0	0	0	0	*0*
2:15 PM	3	3	13	0	*19*	0	0	0	0	*0*	0	0	0	1	*1*
2:30 PM	4	1	6	0	*11*	0	0	0	0	*0*	0	0	0	1	*1*
2:45 PM	6	2	7	1	*16*	0	0	0	0	*0*	0	0	0	0	*0*
3:00 PM	1	2	5	0	*8*	0	0	0	0	*0*	1	0	1	2	*4*
3:15 PM	2	4	6	1	*13*	0	0	0	0	*0*	0	0	0	2	*2*
3:30 PM	3	0	7	1	*11*	0	0	0	0	*0*	0	0	0	0	*0*
3:45 PM	0	1	5	0	*6*	0	0	0	0	*0*	0	0	1	1	*2*
4:00 PM	2	0	2	1	*5*	0	0	0	0	*0*	0	0	0	1	*1*
4:15 PM	**0**	**1**	**7**	**1**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**3**	**0**	**6**	**3**	***12***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**2**	**0**	*2*
4:45 PM	**1**	**2**	**7**	**0**	***10***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**2**	**1**	**4**	**1**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:15 PM	1	1	2	1	*5*	0	0	0	0	*0*	2	0	1	0	*3*
5:30 PM	4	1	3	1	*9*	0	0	0	0	*0*	0	0	0	5	*5*
5:45 PM	2	2	4	1	*9*	0	0	0	0	*0*	0	0	0	0	*0*
6:00 PM	1	0	3	2	*6*	0	0	0	0	*0*	0	0	0	0	*0*
6:15 PM	0	1	4	0	*5*	0	0	0	0	*0*	0	0	0	1	*1*
Count Total	37	26	98	19	*180*	0	0	0	0	*0*	3	0	5	14	*22*
Peak Hour	**6**	**4**	**24**	**5**	***39***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**2**	**0**	***2***

Four-and-a-Half-Hour Count Summaries - Heavy Vehicles

Interval Start	Naglee Rd				Naglee Rd				I-205 WB Ramps				Pavilion Pkwy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM	0	1	1	0	0	0	3	1	0	6	0	1	0	0	0	5	18	0
2:15 PM	0	1	1	1	0	0	3	0	0	12	0	1	0	0	0	0	19	0
2:30 PM	0	0	3	1	0	1	0	0	0	5	0	1	0	0	0	0	11	0
2:45 PM	0	0	5	1	0	1	1	0	0	5	1	1	0	0	0	1	16	64
3:00 PM	0	0	1	0	0	1	1	0	0	4	0	1	0	0	0	0	8	54
3:15 PM	1	0	1	0	0	2	2	0	0	6	0	0	0	0	0	1	13	48
3:30 PM	0	0	1	2	0	0	0	0	0	5	1	1	0	0	0	1	11	48
3:45 PM	0	0	0	0	0	0	1	0	0	3	2	0	0	0	0	0	6	38
4:00 PM	0	0	2	0	0	0	0	0	0	1	0	1	0	0	1	0	5	35
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**1**	**9**	31
4:30 PM	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**1**	**1**	**0**	**0**	**1**	**2**	**12**	32
4:45 PM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1**	**0**	**5**	**0**	**2**	**0**	**0**	**0**	**0**	**10**	36
5:00 PM	**0**	**1**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**1**	**8**	**39**
5:15 PM	0	0	1	0	0	0	1	0	0	2	0	0	0	1	0	0	5	35
5:30 PM	0	0	3	1	0	0	1	0	0	3	0	0	0	0	0	1	9	32
5:45 PM	0	0	2	0	0	1	1	0	0	3	1	0	0	0	1	0	9	31
6:00 PM	0	0	0	1	0	0	0	0	0	3	0	0	0	0	1	1	6	29
6:15 PM	0	0	0	0	0	0	1	0	0	2	2	0	0	0	0	0	5	29
Count Total	1	3	25	8	0	6	18	2	0	80	8	10	0	1	4	14	180	0
Peak Hour	**0**	**1**	**4**	**1**	**0**	**0**	**3**	**1**	**0**	**20**	**1**	**3**	**0**	**0**	**1**	**4**	**39**	**0**

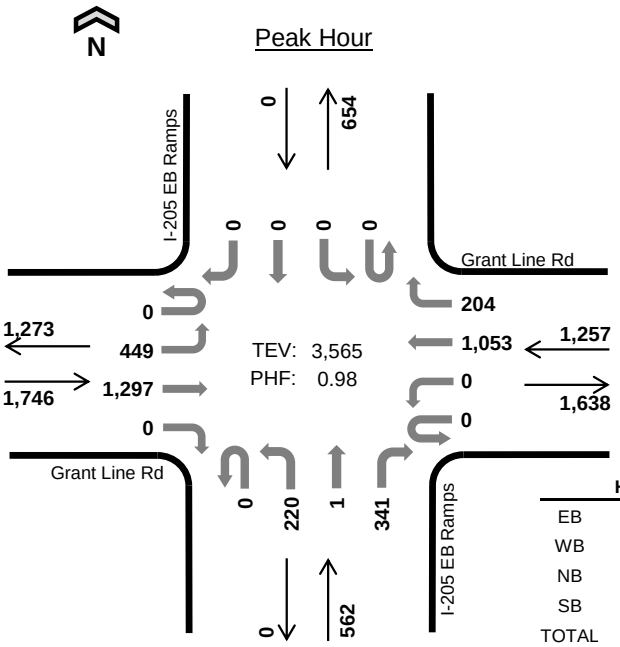
Four-and-a-Half-Hour Count Summaries - Bikes

Interval Start	Naglee Rd			Naglee Rd			I-205 WB Ramps			Pavilion Pkwy			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

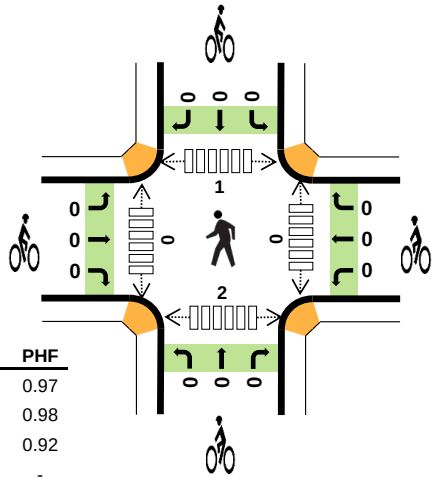
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

I-205 EB Ramps
Grant Line Rd

Date: 09/29/2022
Count Period: 2:00 PM to 6:30 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	1.7%	0.97
WB	1.2%	0.98
NB	2.1%	0.92
SB	-	-
TOTAL	1.6%	0.98



Four-and-a-Half-Hour Count Summaries

Interval Start		Grant Line Rd Eastbound				Grant Line Rd Westbound				I-205 EB Ramps Northbound				I-205 EB Ramps Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:30 PM		0	93	315	0	0	0	264	33	0	62	0	91	0	0	0	0	858	0
4:45 PM		0	113	339	0	0	0	269	52	0	59	0	81	0	0	0	0	913	0
5:00 PM		0	123	319	0	0	0	254	66	0	51	0	78	0	0	0	0	891	0
5:15 PM		0	120	324	0	0	0	266	53	0	48	1	91	0	0	0	0	903	3,565
Peak Hour	All	0	449	1,297	0	0	0	1,053	204	0	220	1	341	0	0	0	0	3,565	0
	HV	0	18	11	0	0	0	9	6	0	5	0	7	0	0	0	0	56	0
	HV%	-	4%	1%	-	-	-	1%	3%	-	2%	0%	2%	-	-	-	-	2%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:30 PM	10	5	3	0	*18*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	8	1	4	0	*13*	0	0	0	0	*0*	0	0	0	2	*2*
5:00 PM	7	5	2	0	*14*	0	0	0	0	*0*	0	0	0	0	*0*
5:15 PM	4	4	3	0	*11*	0	0	0	0	*0*	0	0	1	0	*1*
Peak Hour	29	15	12	0	*56*	0	0	0	0	*0*	0	0	1	2	*3*

Four-and-a-Half-Hour Count Summaries

Interval Start	Grant Line Rd Eastbound				Grant Line Rd Westbound				I-205 EB Ramps Northbound				I-205 EB Ramps Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM	0	102	292	0	0	0	231	53	0	53	2	62	0	0	0	0	795	0
2:15 PM	0	90	257	0	0	0	255	49	0	65	2	87	0	0	0	0	805	0
2:30 PM	0	118	284	0	0	0	224	39	0	50	0	98	0	0	0	0	813	0
2:45 PM	0	79	302	0	0	0	252	40	0	57	1	93	0	0	0	0	824	3,237
3:00 PM	0	88	303	0	0	0	299	50	0	57	0	82	0	0	0	0	879	3,321
3:15 PM	0	97	275	0	0	0	245	46	0	53	0	77	0	0	0	0	793	3,309
3:30 PM	0	96	301	0	0	0	247	37	0	50	0	87	0	0	0	0	818	3,314
3:45 PM	0	102	282	0	0	0	243	45	0	57	0	85	0	0	0	0	814	3,304
4:00 PM	0	87	293	0	0	0	288	54	0	52	0	92	0	0	0	0	866	3,291
4:15 PM	0	105	324	0	0	0	269	46	0	58	0	77	0	0	0	0	879	3,377
4:30 PM	**0**	**93**	**315**	**0**	**0**	**0**	**264**	**33**	**0**	**62**	**0**	**91**	**0**	**0**	**0**	**0**	**858**	3,417
4:45 PM	**0**	**113**	**339**	**0**	**0**	**0**	**269**	**52**	**0**	**59**	**0**	**81**	**0**	**0**	**0**	**0**	**913**	3,516
5:00 PM	**0**	**123**	**319**	**0**	**0**	**0**	**254**	**66**	**0**	**51**	**0**	**78**	**0**	**0**	**0**	**0**	**891**	3,541
5:15 PM	**0**	**120**	**324**	**0**	**0**	**0**	**266**	**53**	**0**	**48**	**1**	**91**	**0**	**0**	**0**	**0**	**903**	**3,565**
5:30 PM	0	80	279	0	0	0	261	52	0	61	0	86	0	0	0	0	819	3,526
5:45 PM	0	97	307	0	0	0	276	42	0	57	0	85	0	0	0	0	864	3,477
6:00 PM	0	100	316	0	0	0	284	30	0	66	0	84	0	0	0	0	880	3,466
6:15 PM	0	90	291	0	0	0	237	33	0	56	0	116	0	0	0	0	823	3,386
Count Total	0	1,780	5,403	0	0	0	4,664	820	0	1,012	6	1,552	0	0	0	0	15,237	0
Peak Hour All	**0**	**449**	**1,297**	**0**	**0**	**0**	**1,053**	**204**	**0**	**220**	**1**	**341**	**0**	**0**	**0**	**0**	**3,565**	**0**
Peak Hour HV	**0**	**18**	**11**	**0**	**0**	**0**	**9**	**6**	**0**	**5**	**0**	**7**	**0**	**0**	**0**	**0**	**56**	**0**
Peak Hour HV%	**-**	**4%**	**1%**	**-**	**-**	**-**	**1%**	**3%**	**-**	**2%**	**0%**	**2%**	**-**	**-**	**-**	**-**	**2%**	**0**

Note: Four-and-a-half-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
2:00 PM	22	2	6	0	*30*	0	0	0	0	*0*	0	0	0	1	*1*
2:15 PM	13	5	5	0	*23*	0	0	0	0	*0*	0	0	0	1	*1*
2:30 PM	13	10	7	0	*30*	0	0	0	0	*0*	0	0	0	1	*1*
2:45 PM	12	5	3	0	*20*	0	0	0	0	*0*	0	0	1	0	*1*
3:00 PM	11	6	3	0	*20*	0	0	0	0	*0*	0	0	1	2	*3*
3:15 PM	11	1	2	0	*14*	0	0	0	0	*0*	0	0	0	2	*2*
3:30 PM	13	3	2	0	*18*	0	0	0	0	*0*	0	0	1	1	*2*
3:45 PM	5	7	1	0	*13*	0	0	0	0	*0*	0	0	1	0	*1*
4:00 PM	11	1	2	0	*14*	0	0	0	0	*0*	0	0	1	4	*5*
4:15 PM	10	3	4	0	*17*	0	0	0	0	*0*	0	0	3	0	*3*
4:30 PM	**10**	**5**	**3**	**0**	***18***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**8**	**1**	**4**	**0**	***13***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**2**	*2*
5:00 PM	**7**	**5**	**2**	**0**	***14***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**4**	**4**	**3**	**0**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**0**	***1***
5:30 PM	6	2	2	0	*10*	0	0	0	0	*0*	0	0	0	1	*1*
5:45 PM	5	2	7	0	*14*	0	0	0	0	*0*	0	0	0	0	*0*
6:00 PM	3	4	5	0	*12*	0	16	0	0	*16*	0	0	0	1	*1*
6:15 PM	5	6	3	0	*14*	0	0	0	0	*0*	0	0	1	1	*2*
Count Total	169	72	64	0	*305*	0	16	0	0	*16*	0	0	10	17	*27*
Peak Hour	**29**	**15**	**12**	**0**	***56***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**2**	***3***

Four-and-a-Half-Hour Count Summaries - Heavy Vehicles

Interval Start	Grant Line Rd				Grant Line Rd				I-205 EB Ramps				I-205 EB Ramps				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM	0	17	5	0	0	0	1	1	0	4	0	2	0	0	0	0	30	0
2:15 PM	0	8	5	0	0	0	4	1	0	1	0	4	0	0	0	0	23	0
2:30 PM	0	10	3	0	0	0	7	3	0	5	0	2	0	0	0	0	30	0
2:45 PM	0	9	3	0	0	0	4	1	0	0	0	3	0	0	0	0	20	103
3:00 PM	0	9	2	0	0	0	3	3	0	0	0	3	0	0	0	0	20	93
3:15 PM	0	6	5	0	0	0	0	1	0	1	0	1	0	0	0	0	14	84
3:30 PM	0	9	4	0	0	0	3	0	0	0	0	2	0	0	0	0	18	72
3:45 PM	0	4	1	0	0	0	3	4	0	0	0	1	0	0	0	0	13	65
4:00 PM	0	10	1	0	0	0	0	1	0	1	0	1	0	0	0	0	14	59
4:15 PM	0	3	7	0	0	0	2	1	0	1	0	3	0	0	0	0	17	62
4:30 PM	**0**	**6**	**4**	**0**	**0**	**0**	**4**	**1**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**18**	62
4:45 PM	**0**	**5**	**3**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**2**	**0**	**0**	**0**	**0**	**13**	62
5:00 PM	**0**	**6**	**1**	**0**	**0**	**0**	**1**	**4**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**14**	62
5:15 PM	**0**	**1**	**3**	**0**	**0**	**0**	**4**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**11**	**56**
5:30 PM	0	2	4	0	0	0	2	0	0	2	0	0	0	0	0	0	10	48
5:45 PM	0	4	1	0	0	0	2	0	0	4	0	3	0	0	0	0	14	49
6:00 PM	0	1	2	0	0	0	1	3	0	1	0	4	0	0	0	0	12	47
6:15 PM	0	4	1	0	0	0	3	3	0	1	0	2	0	0	0	0	14	50
Count Total	0	114	55	0	0	0	44	28	0	26	0	38	0	0	0	0	305	0
Peak Hour	**0**	**18**	**11**	**0**	**0**	**0**	**9**	**6**	**0**	**5**	**0**	**7**	**0**	**0**	**0**	**0**	**56**	**0**

Four-and-a-Half-Hour Count Summaries - Bikes

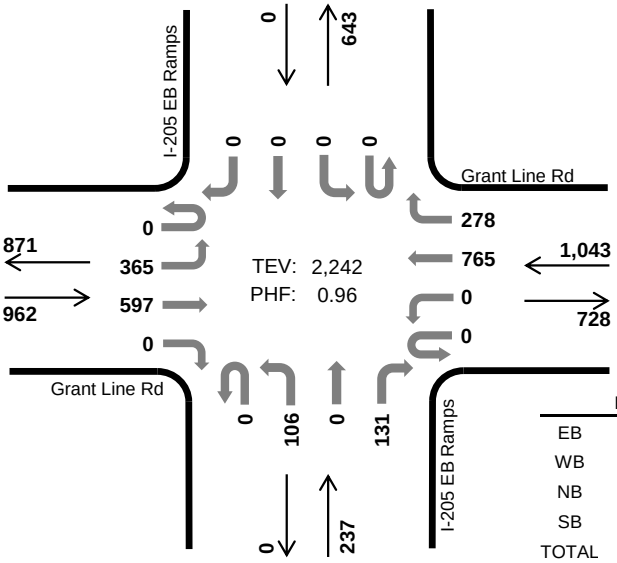
Interval Start	Grant Line Rd			Grant Line Rd			I-205 EB Ramps			I-205 EB Ramps			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	16	0	0	0	0	0	0	0	16	16
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	16
Count Total	0	0	0	0	16	0	0	0	0	0	0	0	16	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

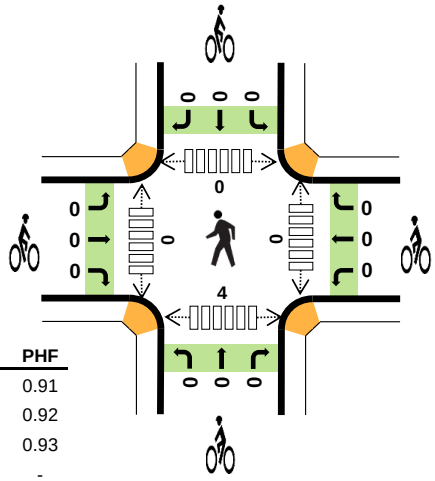
I-205 EB Ramps
Grant Line Rd

Date: 09/29/2022
Count Period: 4:30 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM

Peak Hour



	HV %:	PHF
EB	7.1%	0.91
WB	2.4%	0.92
NB	5.9%	0.93
SB	-	-
TOTAL	4.8%	0.96



Four-and-a-Half-Hour Count Summaries

Interval Start		Grant Line Rd Eastbound				Grant Line Rd Westbound				I-205 EB Ramps Northbound				I-205 EB Ramps Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
8:00 AM		0	83	143	0	0	0	176	76	0	17	0	45	0	0	0	0	540	0
8:15 AM		0	94	140	0	0	0	217	67	0	20	0	29	0	0	0	0	567	0
8:30 AM		0	85	152	0	0	0	180	68	0	36	0	28	0	0	0	0	549	0
8:45 AM		0	103	162	0	0	0	192	67	0	33	0	29	0	0	0	0	586	2,242
Peak Hour	All	0	365	597	0	0	0	765	278	0	106	0	131	0	0	0	0	2,242	0
	HV	0	53	15	0	0	0	16	9	0	10	0	4	0	0	0	0	107	0
	HV%	-	15%	3%	-	-	-	2%	3%	-	9%	-	3%	-	-	-	-	5%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
8:00 AM	16	2	0	0	*18*	0	0	0	0	*0*	0	0	0	2	*2*
8:15 AM	17	11	1	0	*29*	0	0	0	0	*0*	0	0	0	0	*0*
8:30 AM	12	4	7	0	*23*	0	0	0	0	*0*	0	0	0	1	*1*
8:45 AM	23	8	6	0	*37*	0	0	0	0	*0*	0	0	0	1	*1*
Peak Hour	68	25	14	0	*107*	0	0	0	0	*0*	0	0	0	4	*4*

Four-and-a-Half-Hour Count Summaries

Interval Start	Grant Line Rd Eastbound				Grant Line Rd Westbound				I-205 EB Ramps Northbound				I-205 EB Ramps Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:30 AM	0	14	9	0	0	0	95	17	0	0	0	8	0	0	0	0	143	0
4:45 AM	0	17	15	0	0	0	119	18	0	2	0	12	0	0	0	0	183	0
5:00 AM	0	39	27	0	0	0	94	26	0	3	0	11	0	0	0	0	200	0
5:15 AM	0	41	22	0	0	0	93	36	0	1	0	12	0	0	0	0	205	731
5:30 AM	0	38	35	0	0	0	74	40	0	4	0	13	0	0	0	0	204	792
5:45 AM	0	64	32	0	0	0	82	31	0	9	0	11	0	0	0	0	229	838
6:00 AM	0	73	31	0	0	0	80	42	0	11	0	14	0	0	0	0	251	889
6:15 AM	0	69	37	0	0	0	64	44	0	17	0	19	0	0	0	0	250	934
6:30 AM	0	86	55	0	0	0	89	66	0	10	0	16	0	0	0	0	322	1,052
6:45 AM	0	67	54	0	0	0	76	56	0	11	0	27	0	0	0	0	291	1,114
7:00 AM	0	70	49	0	0	0	93	59	0	7	0	14	0	0	0	0	292	1,155
7:15 AM	0	89	88	0	0	0	121	84	0	9	0	33	0	0	0	0	424	1,329
7:30 AM	0	87	98	0	0	0	117	76	0	17	0	27	0	0	0	0	422	1,429
7:45 AM	0	105	133	0	0	0	164	71	0	14	0	35	0	0	0	0	522	1,660
8:00 AM	**0**	**83**	**143**	**0**	**0**	**0**	**176**	**76**	**0**	**17**	**0**	**45**	**0**	**0**	**0**	**0**	**540**	1,908
8:15 AM	**0**	**94**	**140**	**0**	**0**	**0**	**217**	**67**	**0**	**20**	**0**	**29**	**0**	**0**	**0**	**0**	**567**	2,051
8:30 AM	**0**	**85**	**152**	**0**	**0**	**0**	**180**	**68**	**0**	**36**	**0**	**28**	**0**	**0**	**0**	**0**	**549**	2,178
8:45 AM	**0**	**103**	**162**	**0**	**0**	**0**	**192**	**67**	**0**	**33**	**0**	**29**	**0**	**0**	**0**	**0**	**586**	**2,242**
Count Total	0	1,224	1,282	0	0	0	2,126	944	0	221	0	383	0	0	0	0	6,180	0
Peak Hour All	**0**	**365**	**597**	**0**	**0**	**0**	**765**	**278**	**0**	**106**	**0**	**131**	**0**	**0**	**0**	**0**	**2,242**	**0**
Peak Hour HV	**0**	**53**	**15**	**0**	**0**	**0**	**16**	**9**	**0**	**10**	**0**	**4**	**0**	**0**	**0**	**0**	**107**	**0**
Peak Hour HV%	**-**	**15%**	**3%**	**-**	**-**	**-**	**2%**	**3%**	**-**	**9%**	**-**	**3%**	**-**	**-**	**-**	**-**	**5%**	**0**

Note: Four-and-a-half-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:30 AM	2	3	1	0	*6*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 AM	2	3	2	0	*7*	0	0	0	0	*0*	0	0	0	0	*0*
5:00 AM	5	4	0	0	*9*	0	0	0	0	*0*	0	0	0	0	*0*
5:15 AM	6	3	0	0	*9*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 AM	8	5	2	0	*15*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 AM	8	4	1	0	*13*	0	0	0	0	*0*	0	0	0	0	*0*
6:00 AM	8	1	2	0	*11*	0	0	0	0	*0*	0	0	0	0	*0*
6:15 AM	9	7	2	0	*18*	0	0	0	0	*0*	0	0	0	0	*0*
6:30 AM	15	6	3	0	*24*	0	0	0	0	*0*	0	0	0	0	*0*
6:45 AM	11	3	3	0	*17*	0	0	0	0	*0*	0	0	0	1	*1*
7:00 AM	14	3	1	0	*18*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	15	13	5	0	*33*	0	0	0	0	*0*	0	0	0	2	*2*
7:30 AM	10	8	4	0	*22*	0	0	0	0	*0*	0	0	0	0	*0*
7:45 AM	14	6	4	0	*24*	0	0	0	0	*0*	0	0	0	0	*0*
8:00 AM	**16**	**2**	**0**	**0**	***18***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**2**	*2*
8:15 AM	**17**	**11**	**1**	**0**	***29***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:30 AM	**12**	**4**	**7**	**0**	***23***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	*1*
8:45 AM	**23**	**8**	**6**	**0**	***37***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	***1***
Count Total	195	94	44	0	*333*	0	0	0	0	*0*	0	0	0	7	*7*
Peak Hour	**68**	**25**	**14**	**0**	***107***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**4**	***4***

Four-and-a-Half-Hour Count Summaries - Heavy Vehicles

Interval Start	Grant Line Rd				Grant Line Rd				I-205 EB Ramps				I-205 EB Ramps				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:30 AM	0	2	0	0	0	0	3	0	0	0	0	1	0	0	0	0	6	0
4:45 AM	0	2	0	0	0	0	3	0	0	0	0	2	0	0	0	0	7	0
5:00 AM	0	5	0	0	0	0	1	3	0	0	0	0	0	0	0	0	9	0
5:15 AM	0	5	1	0	0	0	0	3	0	0	0	0	0	0	0	0	9	31
5:30 AM	0	5	3	0	0	0	5	0	0	1	0	1	0	0	0	0	15	40
5:45 AM	0	6	2	0	0	0	3	1	0	1	0	0	0	0	0	0	13	46
6:00 AM	0	8	0	0	0	0	0	1	0	1	0	1	0	0	0	0	11	48
6:15 AM	0	6	3	0	0	0	3	4	0	2	0	0	0	0	0	0	18	57
6:30 AM	0	13	2	0	0	0	6	0	0	3	0	0	0	0	0	0	24	66
6:45 AM	0	8	3	0	0	0	0	3	0	2	0	1	0	0	0	0	17	70
7:00 AM	0	10	4	0	0	0	2	1	0	1	0	0	0	0	0	0	18	77
7:15 AM	0	8	7	0	0	0	11	2	0	1	0	4	0	0	0	0	33	92
7:30 AM	0	5	5	0	0	0	8	0	0	2	0	2	0	0	0	0	22	90
7:45 AM	0	8	6	0	0	0	2	4	0	2	0	2	0	0	0	0	24	97
8:00 AM	**0**	**12**	**4**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18**	97
8:15 AM	**0**	**13**	**4**	**0**	**0**	**0**	**7**	**4**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**29**	93
8:30 AM	**0**	**10**	**2**	**0**	**0**	**0**	**2**	**2**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**23**	94
8:45 AM	**0**	**18**	**5**	**0**	**0**	**0**	**6**	**2**	**0**	**2**	**0**	**4**	**0**	**0**	**0**	**0**	**37**	**107**
Count Total	0	144	51	0	0	0	63	31	0	26	0	18	0	0	0	0	333	0
Peak Hour	**0**	**53**	**15**	**0**	**0**	**0**	**16**	**9**	**0**	**10**	**0**	**4**	**0**	**0**	**0**	**0**	**107**	**0**

Four-and-a-Half-Hour Count Summaries - Bikes

Interval Start	Grant Line Rd			Grant Line Rd			I-205 EB Ramps			I-205 EB Ramps			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

B. SimTraffic Reports

1: I-205 WB Off Ramp/Pavilion Pkwy & Naglee Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicles Entered	19	19	45	8	22	1	966	45	138	1	4	51
Vehicles Exited	19	19	45	8	22	1	968	44	139	1	4	51
Hourly Exit Rate	19	19	45	8	22	1	968	44	139	1	4	51
Input Volume	20	20	50	8	23	1	972	43	136	2	5	47
% of Volume	95	95	90	100	96	100	100	102	102	50	80	109

1: I-205 WB Off Ramp/Pavilion Pkwy & Naglee Rd Performance by movement

Movement	All
Vehicles Entered	1319
Vehicles Exited	1321
Hourly Exit Rate	1321
Input Volume	1327
% of Volume	100

2: I-205 EB Off Ramp/I-205 EB On Ramp & Grant Line Rd Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBR	All
Vehicles Entered	387	653	759	285	106	134	2324
Vehicles Exited	386	654	759	285	104	133	2321
Hourly Exit Rate	386	654	759	285	104	133	2321
Input Volume	375	651	765	278	106	136	2311
% of Volume	103	100	99	103	98	98	100

Total Zone Performance

Vehicles Entered	2657
Vehicles Exited	56
Hourly Exit Rate	56
Input Volume	3638
% of Volume	2

Intersection: 1: I-205 WB Off Ramp/Pavilion Pkwy & Naglee Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	TR	L	L	T
Maximum Queue (ft)	9	41	34	3	35	50	51	23	11	370	389	43
Average Queue (ft)	0	9	5	0	7	8	11	1	1	181	219	6
95th Queue (ft)	3	28	20	2	22	32	38	11	7	291	323	28
Link Distance (ft)			652	652	652		646	646	646			1902
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	165	165				310				750	750	
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 1: I-205 WB Off Ramp/Pavilion Pkwy & Naglee Rd

Movement	NB	NB	SB	SB	SB
Directions Served	T	R	L	T	R
Maximum Queue (ft)	51	67	15	44	66
Average Queue (ft)	11	26	1	4	27
95th Queue (ft)	38	50	7	22	56
Link Distance (ft)	1902			763	763
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		340	110		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: I-205 EB Off Ramp/I-205 EB On Ramp & Grant Line Rd

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	T	T	R	L	R
Maximum Queue (ft)	359	107	118	174	163	266	391	168	74
Average Queue (ft)	182	31	45	92	63	119	45	67	35
95th Queue (ft)	312	77	104	160	138	216	243	125	61
Link Distance (ft)		1271	1271	669	669	669			1822
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	905						300	355	
Storage Blk Time (%)							0		
Queuing Penalty (veh)							0		

Zone Summary

Zone wide Queuing Penalty: 0

1: I-205 WB Off Ramp/Pavilion Pkwy & Naglee Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicles Entered	169	289	80	49	336	34	514	90	135	55	28	178
Vehicles Exited	169	290	80	48	336	34	516	90	135	54	28	178
Hourly Exit Rate	169	290	80	48	336	34	516	90	135	54	28	178
Input Volume	169	287	81	43	331	32	531	90	132	55	27	180
% of Volume	100	101	99	112	102	106	97	100	102	98	104	99

1: I-205 WB Off Ramp/Pavilion Pkwy & Naglee Rd Performance by movement

Movement	All
Vehicles Entered	1957
Vehicles Exited	1958
Hourly Exit Rate	1958
Input Volume	1958
% of Volume	100

2: I-205 EB Off Ramp/I-205 EB On Ramp & Grant Line Rd Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBR	All
Vehicles Entered	459	1286	1012	212	224	353	3546
Vehicles Exited	460	1289	1005	212	223	352	3541
Hourly Exit Rate	460	1289	1005	212	223	352	3541
Input Volume	464	1315	1053	204	220	346	3602
% of Volume	99	98	95	104	101	102	98

Total Zone Performance

Vehicles Entered	3762
Vehicles Exited	5
Hourly Exit Rate	5
Input Volume	5560
% of Volume	0

Intersection: 1: I-205 WB Off Ramp/Pavilion Pkwy & Naglee Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	TR	L	L	T
Maximum Queue (ft)	147	149	134	107	43	90	201	157	71	228	271	81
Average Queue (ft)	25	87	66	34	10	36	105	55	19	131	168	29
95th Queue (ft)	94	143	124	78	28	73	170	129	53	220	245	63
Link Distance (ft)			652	652	652		646	646	646			1902
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	165	165				310				750	750	
Storage Blk Time (%)	0	0	0									
Queuing Penalty (veh)	0	0	0									

Intersection: 1: I-205 WB Off Ramp/Pavilion Pkwy & Naglee Rd

Movement	NB	NB	SB	SB	SB
Directions Served	T	R	L	T	R
Maximum Queue (ft)	77	60	87	79	105
Average Queue (ft)	21	27	42	25	45
95th Queue (ft)	54	48	78	62	80
Link Distance (ft)	1902			763	763
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		340	110		
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Intersection: 2: I-205 EB Off Ramp/I-205 EB On Ramp & Grant Line Rd

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	T	T	R	L	R
Maximum Queue (ft)	549	295	306	286	320	379	385	285	161
Average Queue (ft)	314	127	147	170	161	196	39	151	79
95th Queue (ft)	518	231	248	263	272	307	220	246	129
Link Distance (ft)		1271	1271	669	669	669			1822
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	905						300	355	
Storage Blk Time (%)						1	0	0	
Queuing Penalty (veh)						2	0	0	

Zone Summary

Zone wide Queuing Penalty: 2

1: I-205 WB Off Ramp/Pavilion Pkwy & Naglee Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicles Entered	22	18	47	9	23	2	987	38	133	2	3	45
Vehicles Exited	22	18	47	9	24	2	984	38	134	2	3	44
Hourly Exit Rate	22	18	47	9	24	2	984	38	134	2	3	44
Input Volume	20	20	50	8	23	1	973	43	136	2	5	47
% of Volume	110	90	94	112	104	200	101	88	99	100	60	94

1: I-205 WB Off Ramp/Pavilion Pkwy & Naglee Rd Performance by movement

Movement	All
Vehicles Entered	1329
Vehicles Exited	1327
Hourly Exit Rate	1327
Input Volume	1328
% of Volume	100

2: I-205 EB Off Ramp/I-205 EB On Ramp & Grant Line Rd Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBR	All
Vehicles Entered	372	658	778	284	102	135	2329
Vehicles Exited	373	658	780	284	100	136	2331
Hourly Exit Rate	373	658	780	284	100	136	2331
Input Volume	375	654	771	279	106	141	2326
% of Volume	99	101	101	102	94	96	100

Total Zone Performance

Vehicles Entered	2679
Vehicles Exited	55
Hourly Exit Rate	55
Input Volume	3654
% of Volume	2

Intersection: 1: I-205 WB Off Ramp/Pavilion Pkwy & Naglee Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	TR	L	L	T
Maximum Queue (ft)	8	57	47	5	29	67	56	16	16	342	347	47
Average Queue (ft)	0	12	6	0	6	10	10	1	1	193	226	5
95th Queue (ft)	5	36	28	3	19	41	37	7	9	298	324	25
Link Distance (ft)			652	652	652		646	646	646			1902
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	165	165				310				750	750	
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 1: I-205 WB Off Ramp/Pavilion Pkwy & Naglee Rd

Movement	NB	NB	SB	SB	SB
Directions Served	T	R	L	T	R
Maximum Queue (ft)	61	63	25	63	70
Average Queue (ft)	12	26	2	5	24
95th Queue (ft)	41	50	11	30	53
Link Distance (ft)	1902			763	763
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		340	110		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: I-205 EB Off Ramp/I-205 EB On Ramp & Grant Line Rd

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	T	T	R	L	R
Maximum Queue (ft)	446	101	111	194	157	234	264	194	72
Average Queue (ft)	187	32	45	101	64	120	21	71	33
95th Queue (ft)	342	75	95	168	143	204	159	144	55
Link Distance (ft)		1271	1271	669	669	669			1822
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	905						300	355	
Storage Blk Time (%)						0			
Queuing Penalty (veh)						0			

Zone Summary

Zone wide Queuing Penalty: 0

1: I-205 WB Off Ramp/Pavilion Pkwy & Naglee Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicles Entered	179	299	81	50	331	33	547	86	126	58	30	181
Vehicles Exited	178	299	82	50	332	32	545	84	125	58	29	181
Hourly Exit Rate	178	299	82	50	332	32	545	84	125	58	29	181
Input Volume	169	287	81	43	331	32	532	90	132	55	27	180
% of Volume	105	104	101	116	100	100	102	93	95	105	107	101

1: I-205 WB Off Ramp/Pavilion Pkwy & Naglee Rd Performance by movement

Movement	All
Vehicles Entered	2001
Vehicles Exited	1995
Hourly Exit Rate	1995
Input Volume	1959
% of Volume	102

2: I-205 EB Off Ramp/I-205 EB On Ramp & Grant Line Rd Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBR	All
Vehicles Entered	466	1304	1080	210	209	351	3620
Vehicles Exited	465	1302	1084	210	209	352	3622
Hourly Exit Rate	465	1302	1084	210	209	352	3622
Input Volume	464	1318	1061	205	220	352	3620
% of Volume	100	99	102	102	95	100	100

Total Zone Performance

Vehicles Entered	3855
Vehicles Exited	5
Hourly Exit Rate	5
Input Volume	5579
% of Volume	0

Intersection: 1: I-205 WB Off Ramp/Pavilion Pkwy & Naglee Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	TR	L	L	T
Maximum Queue (ft)	134	170	143	118	36	92	178	162	67	263	295	78
Average Queue (ft)	23	90	69	37	11	36	113	58	20	149	180	26
95th Queue (ft)	87	150	128	86	28	75	171	131	51	243	263	59
Link Distance (ft)			652	652	652		646	646	646			1902
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	165	165				310				750	750	
Storage Blk Time (%)	0	1	0									
Queuing Penalty (veh)	0	1	0									

Intersection: 1: I-205 WB Off Ramp/Pavilion Pkwy & Naglee Rd

Movement	NB	NB	SB	SB	SB
Directions Served	T	R	L	T	R
Maximum Queue (ft)	74	56	100	71	102
Average Queue (ft)	25	28	41	23	48
95th Queue (ft)	60	51	85	58	82
Link Distance (ft)	1902			763	763
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		340	110		
Storage Blk Time (%)			0	0	
Queuing Penalty (veh)			0	0	

Intersection: 2: I-205 EB Off Ramp/I-205 EB On Ramp & Grant Line Rd

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	T	T	R	L	R
Maximum Queue (ft)	641	389	394	310	350	379	307	315	173
Average Queue (ft)	341	130	152	178	176	220	27	147	85
95th Queue (ft)	573	295	306	268	290	337	185	249	142
Link Distance (ft)		1271	1271	669	669	669			1822
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	905						300	355	
Storage Blk Time (%)	0					2		0	
Queuing Penalty (veh)	0					5		0	

Zone Summary

Zone wide Queuing Penalty: 6

APPENDIX C

Environmental Noise Assessment

Environmental Noise Assessment

Tracy TRU by Hilton

City of Tracy, California

March 27, 2023

Project #221010

Prepared for:

DE NOVO PLANNING GROUP

De Novo Planning Group
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INTRODUCTION

The Tracy TRU by Hilton project includes the construction of a 78-unit hotel upon a 1.96-acre parcel. The project is located northwest of the intersection of West Grant Line Road and Corral Hollow Road in the City of Tracy, California. Surrounding land uses include residential land uses to the north, a transient lodging use to the south, residential land uses to the east, and commercial land uses to the west.

Figure 1 shows the project site plan. **Figure 2** shows the locations of the noise measurement sites.

ENVIRONMENTAL SETTING

BACKGROUND INFORMATION ON NOISE

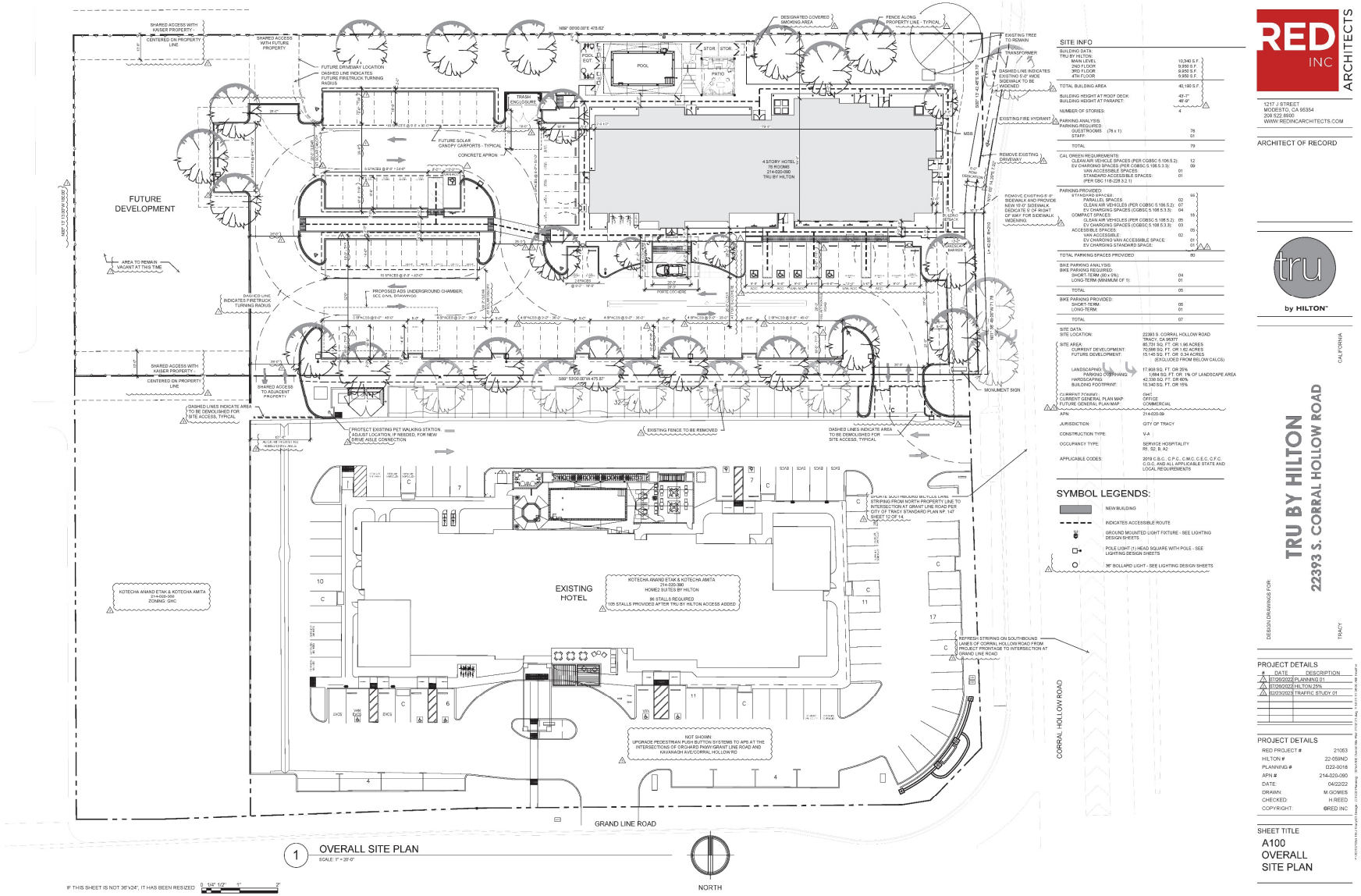
Fundamentals of Acoustics

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment.



1 OVERALL SITE PLAN
SCALE: 1" = 20'-0"

IF THIS SHEET IS NOT 36"x24", IT HAS BEEN RESIZED

RED INC ARCHITECTS
1217 J STREET
MODESTO, CA 95354
209.522.6900
WWW.REDINCARCHITECTS.COM
ARCHITECT OF RECORD

tru by HILTON

TRU BY HILTON
22393 S. CORRAL HOLLOW ROAD
TRACY CALIFORNIA

DESIGN DRAWINGS FOR:

PROJECT DETAILS

#	DATE	DESCRIPTION
1	07/25/2022	PLANNING 01
2	07/26/2022	HILTON 25%
3	12/23/2023	TRAFFIC STUDY 01

PROJECT DETAILS

RED PROJECT #	21053
HILTON #	22-059ND
PLANNING #	D22-0018
APN #	214-020-090
DATE:	04/22/22
DRAWN:	M.GOMES
CHECKED:	H.REED
COPYRIGHT:	©RED INC

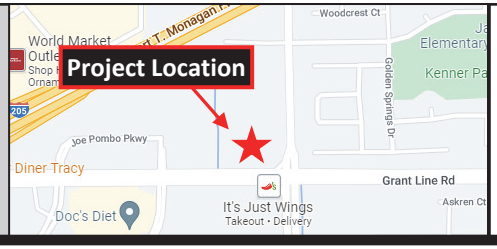
SHEET TITLE
A100
OVERALL
SITE PLAN

Tracy TRU by Hilton

City of Tracy, California

Figure 1

Project Site Plan



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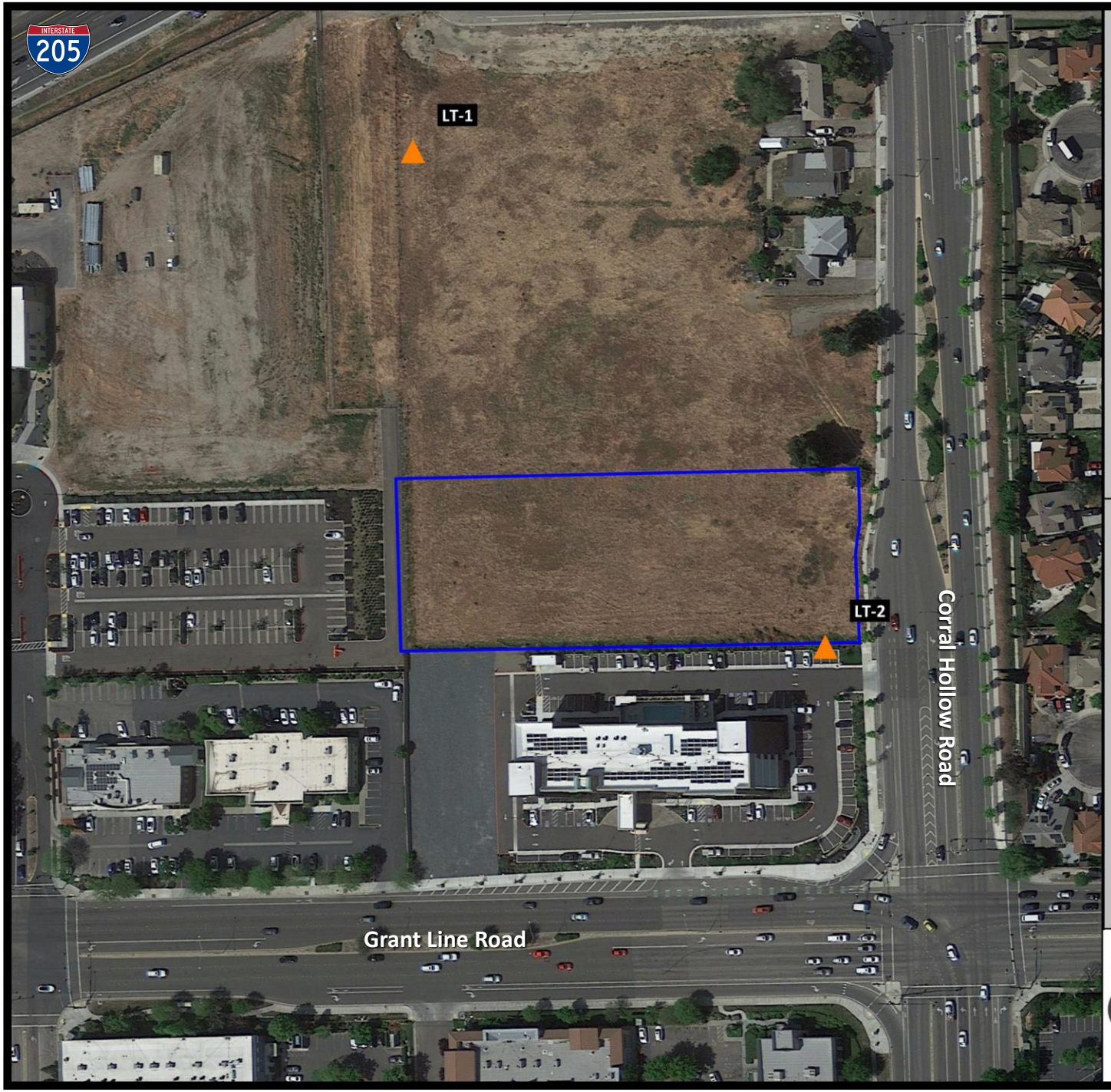

Tracy TRU by Hilton IS-MND

City of Tracy, California

Figure 2

Noise Measurement Sites

Legend

- Project Site
- Noise Measurement Site - Long Term

50 ft 150 ft 250 ft

Projection: UTM Zone 10 / WGS84 / meters
Rev. Date: 01/12/2023

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The decibel scale is logarithmic, not linear. In other words, two sound levels 10-dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10-dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (DNL or L_{dn}) is based upon the average noise level over a 24-hour day, with a +10-decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Table 1 lists several examples of the noise levels associated with common situations. **Appendix A** provides a summary of acoustical terms used in this report.

TABLE 1: TYPICAL NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft.)	--100--	
Gas Lawn Mower at 1 m (3 ft.)	--90--	
Diesel Truck at 15 m (50 ft.), at 80 km/hr. (50 mph)	--80--	Food Blender at 1 m (3 ft.) Garbage Disposal at 1 m (3 ft.)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft.)	--70--	Vacuum Cleaner at 3 m (10 ft.)
Commercial Area Heavy Traffic at 90 m (300 ft.)	--60--	Normal Speech at 1 m (3 ft.)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

Source: Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol. September 2013.

Effects of Noise on People

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1-dBA cannot be perceived;
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference;
- A change in level of at least 5-dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6-dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING NOISE AND VIBRATION ENVIRONMENTS

EXISTING NOISE RECEPTORS

Some land uses are considered more sensitive to noise than others. Land uses often associated with sensitive receptors generally include residences, schools, libraries, hospitals, and passive recreational areas. Sensitive noise receptors may also include threatened or endangered noise sensitive biological species, although many jurisdictions have not adopted noise standards for wildlife areas. Noise sensitive land uses are typically given special attention in order to achieve protection from excessive noise.

Sensitivity is a function of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities involved. In the vicinity of the project site, sensitive land uses include existing single-family residential uses to the north of the project site, multi-family residential uses to the east of the project site, and commercial and office uses to the west and south of the project site.

EXISTING GENERAL AMBIENT NOISE LEVELS

The existing noise environment in the project area is primarily defined by traffic on I-205 and Corral Hollow Road. To quantify the existing ambient noise environment in the project vicinity, Saxelby Acoustics conducted continuous (24-hr.) noise level measurements at two locations on the project site. Noise measurement locations are shown on **Figure 2**. A summary of the noise level measurement survey results is provided in **Table 2**. **Appendix B** contains the complete results of the noise monitoring.

The sound level meters were programmed to record the maximum, median, and average noise levels at each site during the survey. The maximum value, denoted L_{max}, represents the highest noise level measured. The average value, denoted L_{eq}, represents the energy average of all the noise received by the sound level meter microphone during the monitoring period. The median value, denoted L_{50}, represents the sound level exceeded 50 percent of the time during the monitoring period.

Larson Davis Laboratories (LDL) model 820 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with a CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

TABLE 2: SUMMARY OF EXISTING BACKGROUND NOISE MEASUREMENT DATA

Location	Date	L_{dn}	Daytime L_{eq}	Daytime L_{50}	Daytime L_{max}	Nighttime L_{eq}	Nighttime L_{50}	Nighttime L_{max}
LT-1: 330 ft. to CL of I-205.	11/11/22	67	63	62	72	61	60	72
	11/12/22	67	64	63	75	60	60	70
LT-2: 110 ft. to CL of Corral Hollow Rd	11/11/22	68	65	59	84	61	57	77
	11/12/22	67	65	61	81	60	55	75

Notes:

- *All values shown in dBA*
- *Daytime hours: 7:00 a.m. to 10:00 p.m.*
- *Nighttime Hours: 10:00 p.m. to 7:00 a.m.*
- *Source: Saxelby Acoustics, 2022.*

FUTURE TRAFFIC NOISE ENVIRONMENT AT OFF-SITE RECEPTORS

Off-Site Traffic Noise Impact Assessment Methodology

To assess noise impacts due to project-related traffic increases on the local roadway network, traffic noise levels are predicted at sensitive receptors for existing and background conditions.

Existing and Background noise levels due to traffic are calculated using the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108). The model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. To predict traffic noise levels in terms of L_{dn}, it is necessary to adjust the input volume to account for the day/night distribution of traffic.

Project trip generation volumes were provided by the project traffic engineer (Kimley Horn 2023), truck usage and vehicle speeds on the local area roadways were estimated from field observations. The predicted increases in traffic noise levels on the local roadway network for Existing and Background conditions which would result from the project are provided in terms of L_{dn}.

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each project-area roadway segment. In some locations sensitive receptors may not receive full shielding from noise barriers or may be located at distances which vary from the assumed calculation distance.

Tables 3 and 4 summarizes the modeled traffic noise levels at the nearest sensitive receptors along each roadway segment in the Project area. **Appendix C** provides the complete inputs and results of the FHWA traffic modeling.

TABLE 3: PREDICTED TRAFFIC NOISE LEVEL AND PROJECT-RELATED TRAFFIC NOISE LEVEL INCREASES

Roadway	Segment	Predicted Exterior Noise Level (dBA L_{dn}) at Closest Sensitive Receptors		
		Existing No Project	Existing + Project	Change
Orchard Way	South of Grant Line Rd	57.9	57.9	0.0
Corral Hollow Rd	South of Grant Line Rd	61.9	61.9	0.0
Grant Line Road	East of Corral Hollow Rd	61.2	61.2	0.0
Grant Line Road	West of Orchard Pkwy	58.3	58.3	0.0
Corral Hollow Rd	South of Kavanagh Ave	58.7	58.7	0.0
Corral Hollow Rd	North of Kavanagh Ave	58.7	58.7	0.0

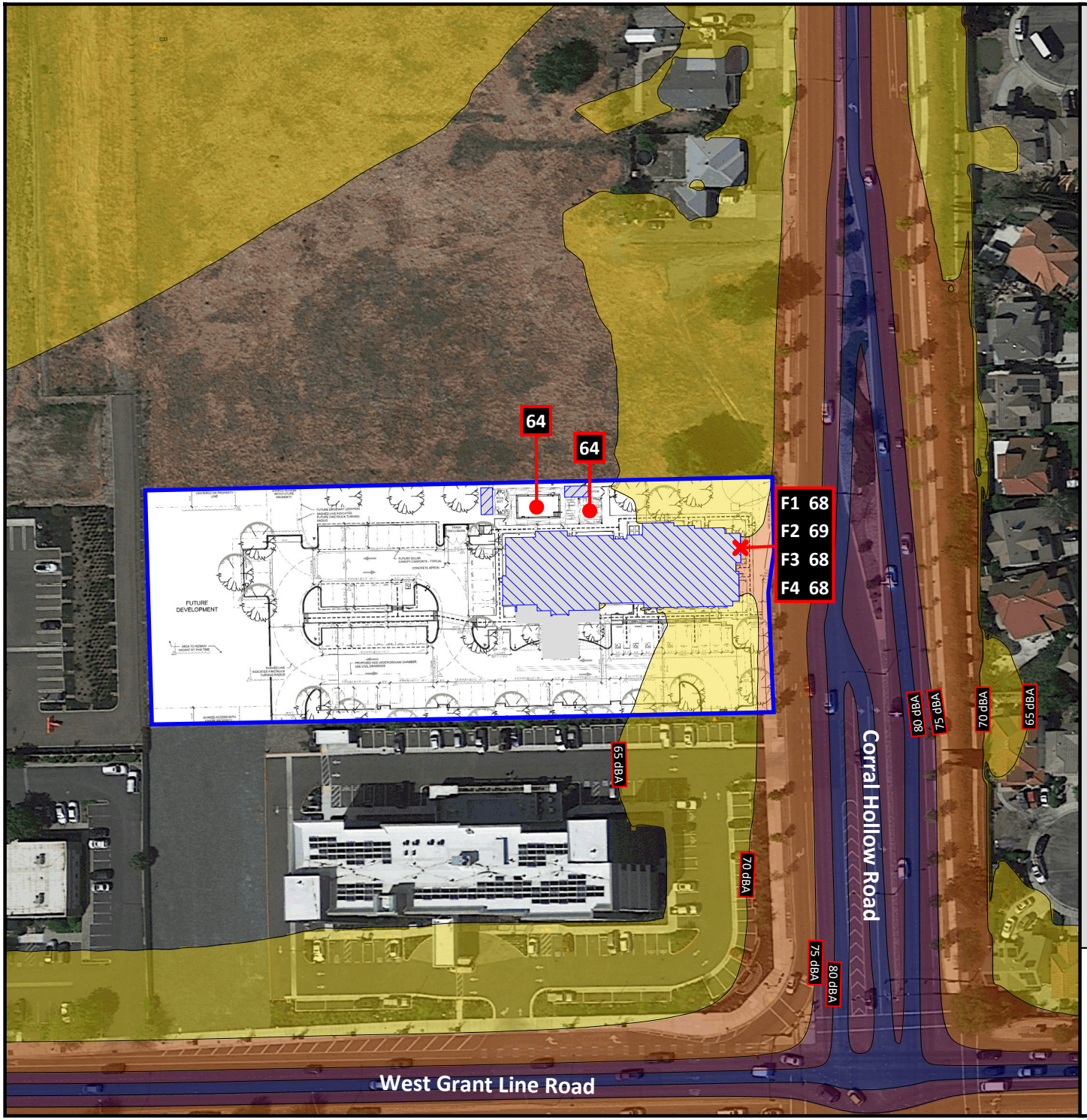
TABLE 4: BACKGROUND TRAFFIC NOISE LEVEL AND PROJECT-RELATED TRAFFIC NOISE LEVEL INCREASES

Roadway	Segment	Predicted Exterior Noise Level (dBA L_{dn}) at Closest Sensitive Receptors		
		Background No Project	Background + Project	Change
Orchard Way	South of Grant Line Rd	57.9	57.9	0.0
Corral Hollow Rd	South of Grant Line Rd	61.9	62.0	0.1
Grant Line Road	East of Corral Hollow Rd	61.3	61.3	0.0
Grant Line Road	West of Orchard Pkwy	58.4	58.4	0.0
Corral Hollow Rd	South of Kavanagh Ave	58.8	58.8	0.0
Corral Hollow Rd	North of Kavanagh Ave	58.7	58.7	0.0

Based upon the **Tables 3 and 4** data, the proposed project is predicted to result in an increase in a maximum traffic noise level increase of 0.1 dBA.

EVALUATION OF FUTURE TRANSPORTATION NOISE ON PROJECT SITE

Saxelby Acoustics used the SoundPLAN noise model to calculate traffic noise levels at the proposed transient lodging uses due to traffic on SR 205 and Corral Hollow Road. Inputs to the SoundPLAN noise model include topography, existing structures, roadway elevations, and the proposed building pad elevations. It was estimated that existing noise levels would increase by +1 dBA based upon an assumed 1% per year increase in traffic volumes on SR 205. Corral Hollow Road was estimated to increase by +1 dBA based upon a 1% percent increase in the traffic volume. The results of this analysis are shown graphically on **Figure 3**.



Tracy TRU by Hilton Project

City of Tracy, California

Figure 3

Transportation Grid Map
Ldn, dB(A)

Noise Level, dB(A)

65 <	<=	70
70 <	<=	75
75 <	<=	80
80 <		

Legend

- Project Building
- Project Site
- Facade Noise Level
- Outdoor Area Noise Level

Scale 1:110

0 20 40 80 120 160 feet

N

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EVALUATION OF PROJECT OPERATIONAL NOISE ON EXISTING SENSITIVE RECEPTORS

Project site traffic circulation and residential HVAC noise are considered to be the primary noise sources for this project. The following is a list of assumptions used for the noise modeling. The data used is based upon a combination of manufacturer's provided data and Saxelby Acoustics data from similar operations.

On-Site Circulation: The project is projected to generate 623 daily trips with 36 trips in the morning peak hour (Kimley Horn 2023). Saxelby Acoustics assumed that 1-2 of these trips could be heavy trucks. Parking lot movements are predicted to generate a sound exposure level (SEL) of 71 dBA SEL at 50 feet for cars and 85 dBA SEL at 50 feet for trucks. Saxelby Acoustics data.

HVAC: Assumes rooftop equipment containing ten-ton air-cooled chiller units. The units were assumed to have a sound level rating of 59 dBA L_{eq} at 50 feet. Manufacturers data.

Saxelby Acoustics used the SoundPLAN noise prediction model. Inputs to the model included sound power levels for the proposed amenities, existing and proposed buildings, terrain type, and locations of sensitive receptors. These predictions are made in accordance with International Organization for Standardization (ISO) standard 9613-2:1996 (Acoustics – Attenuation of sound during propagation outdoors). ISO 9613 is the most commonly used method for calculating exterior noise propagation. **Figure 4** shows the noise level contours resulting from operation of the project.

Tracy TRU by Hilton Project

City of Tracy, California

Figure 4

Stationary Noise Contours
Leq, dB(A)

Noise Level, dB(A)

55 <		<=	56
56 <		<=	57
57 <			

Legend

- Project Building
- Project Site
- Outdoor Area Noise Level

Scale 1:110

0 20 40 80 120 160 feet

N

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CONSTRUCTION NOISE ENVIRONMENT

During the construction of the proposed project, noise from construction activities would temporarily add to the noise environment in the project vicinity. As shown in **Table 5**, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dB at a distance of 50 feet.

TABLE 5: CONSTRUCTION EQUIPMENT NOISE

Type of Equipment	Maximum Level, dBA at 50 feet
Auger Drill Rig	84
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic Tools	85

Source: Roadway Construction Noise Model User's Guide. Federal Highway Administration. FHWA-HEP-05-054. January 2006.

CONSTRUCTION VIBRATION ENVIRONMENT

The primary vibration-generating activities associated with the proposed project would occur during construction when activities such as grading, utilities placement, and parking lot construction occur. **Table 6** shows the typical vibration levels produced by construction equipment.

TABLE 6: VIBRATION LEVELS FOR VARIOUS CONSTRUCTION EQUIPMENT

Type of Equipment	Peak Particle Velocity at 25 feet (inches/second)	Peak Particle Velocity at 50 feet (inches/second)	Peak Particle Velocity at 100 feet (inches/second)
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210 (Less than 0.20 at 26 feet)	0.074	0.026

Source: Transit Noise and Vibration Impact Assessment Guidelines. Federal Transit Administration. May 2006.

REGULATORY CONTEXT

FEDERAL

There are no federal regulations related to noise that apply to the Proposed Project.

STATE

California Environmental Quality Act

The California Environmental Quality Act (CEQA) Guidelines, Appendix G, indicate that a significant noise impact may occur if a project exposes persons to noise or vibration levels in excess of local general plans or noise ordinance standards, or cause a substantial permanent or temporary increase in ambient noise levels. CEQA standards are discussed more below under the Thresholds of Significance section.

LOCAL

City of Tracy General Plan

Policies

P5. For new residential land uses, noise from external sources shall not cause building interiors to exceed 45 L_{dn}.

P6. For new multi-family residential land uses, noise from external sources shall not cause the community outdoor recreation areas to exceed 65 L_{dn}. This policy shall not apply to balconies.

P8. Measures to attenuate exterior and/or interior noise levels to acceptable levels shall be incorporated into all development projects. Acceptable, conditionally acceptable and unacceptable noise levels are presented in **Table 7** (Figure 9-3).

TABLE 7: LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENT (FIGURE 9-3)

Land Use Category	Exterior Noise Exposure (L_{dn})					
	55	60	65	70	75	80
Single-Family Residential						
Multi-Family Residential, Hotels, and Motels		(a)				
Outdoor Sports and Recreation, Neighborhood Parks and Playgrounds						
Schools, Libraries, Museums, Hospitals, Personal Care, Meeting Halls, Churches						
Office Buildings, Business Commercial, and Professional						
Auditoriums, Concert Halls, Amphitheaters						

(a) Residential development sites exposed to noise levels exceeding 60 L_{dn} shall be analyzed following protocols in Appendix Chapter 12, Section 1208A, Sound Transmission Control, California Building Code

	NORMALLY ACCEPTABLE Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
	CONDITIONALLY ACCEPTABLE Specified land use may be permitted only after detailed analysis of the noise reduction requirements and the needed noise insulation features included in the design.
	UNACCEPTABLE New construction or development should generally not be undertaken because mitigation is usually not feasible to comply with noise element policies.

Policies

P2. Mitigation measures shall be required for new development projects that exceed the following criteria:

- Cause the L_{dn} at noise-sensitive uses to increase by 3 dB or more and exceed the "normally acceptable" level.
- Cause the L_{dn} at noise-sensitive uses to increase 5 dB or more and remain "normally acceptable."
- Cause new noise levels to exceed the City of Tracy Noise Ordinance limits.

Source: Develop Code Section 16.60.040, Standards.

P4. All construction in the vicinity of noise sensitive land uses, such as residences, hospitals, or convalescent homes, shall be limited to daylight hours or 7:00 a.m. to 7:00 p.m. In addition, the following construction noise control measures shall be included as requirements at construction sites to minimize construction noise impacts:

- Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Locate stationary noise-generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction area.
- Utilize "quiet" air compressors and other stationary noise sources where technology exists.

City of Tracy Municipal Code

4.12.750 - General sound level limits.

Except for exempted activities and sounds as provided in this chapter or exempted properties as referenced in Section 4.12.800, it shall be unlawful for any person to cause or allow the creation of any noise to the extent that the one-hour average sound level, at any point on or beyond the boundaries of the property in the applicable Base District Zone on which the sound is produced exceeds the applicable limits set forth below:

TABLE 8: GENERAL SOUND LEVEL LIMITS AT BASE DISTRICT ZONE

Base District Zone	Sound Level Limits (Decibels)
1. Residential Districts RE (Residential Estate) LDR (Low Density) MDR/MDC (Medium Density) HDR (High Density) RMH (Mobile Home)	55
2. Commercial Districts MO (Medical Office) POM (Professional Office and Medical) NS (Neighborhood Shopping) CBD (Central Business District) GHC (General Highway) H-s (Highway Service)	65
3. Industrial Districts M-1 (Light Industrial) M-2 (Heavy Industrial)	75
4. A (Agricultural)	75
5. AMO Aggregate Mineral Overlay Zone	75

(Prior code § 4-3.1004)

Summary of Applicable Noise Level Criteria

The proposed project includes development of transient lodging and is subject to the City of Tracy hotel noise level standards.

Table 7 shows the City of Tracy Land Use Compatibility Chart. The table indicates that development of residential uses is "Normally Acceptable" where the ambient noise level is 65 dBA L_{dn} or less. Ambient levels exceeding 60 dB L_{dn} shall be analyzed following protocols in Appendix Chapter 12, Section 1208A, Sound Transmission Control, California Building Code. Construction where the ambient noise level exceeds 70 dBA L_{dn} is considered "Unacceptable." Construction may occur where noise levels range from 60 dBA L_{dn} to 70 dBA L_{dn} if noise reduction measures are implemented to ensure interior and exterior spaces are protected from excessive noise. Policy P5 establishes an acceptable interior noise level of 45 dBA L_{dn}.

Table 8 shows the noise level standard of a one-hour average sound level permitted at any point on or beyond the boundaries of the property. The table indicates the proposed project shall not produce non-transportation noise levels of 55 dBA L_{eq} at adjacent noise sensitive receptors.

CRITERIA FOR ACCEPTABLE VIBRATION

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to

vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. **Table 9**, which was developed by Caltrans, shows the vibration levels which would normally be required to result in damage to structures. The vibration levels are presented in terms of peak particle velocity in inches per second.

Table 9 indicates that the threshold for architectural damage to structures is 0.20 in/sec p.p.v. A threshold of 0.20 in/sec p.p.v. is considered to be a reasonable threshold for short-term construction projects.

TABLE 9: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS

Peak Particle Velocity		Human Reaction	Effect on Buildings
mm/second	in/second		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

Source: Transportation Related Earthborne Vibrations. Caltrans. TAV-02-01-R9601. February 20, 2002.

IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Appendix G of the CEQA Guidelines states that a project would normally be considered to result in significant noise impacts if noise levels conflict with adopted environmental standards or plans or if noise generated by the project would substantially increase existing noise levels at sensitive receivers on a permanent or temporary basis. Significance criteria for noise impacts are drawn from CEQA Guidelines Appendix G (Items XI [a-c]).

Would the project:

a. Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b. Generate excessive groundborne vibration or groundborne noise levels?

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The proposed project is not located within two miles of a public or private airport, therefore item "c" is not discussed any further in this study.

Noise Level Increase Criteria for Long-Term Project-Related Noise Level Increases

The City of Tracy General Plan Noise Element specifies criteria for determination of significant noise impacts in Policy P2. As stated in the City of Tracy General Plan Policy P2, mitigation measures shall be required for new development projects under the following conditions:

- Causes the L_{dn} at noise-sensitive uses to increase 3 dB or more and exceed the "normally acceptable level;
- Causes the L_{dn} at noise-sensitive uses increase 5 dB or more and remain "normally acceptable" level;
- Cause new noise levels to exceed the City of Tracy Noise Ordinance limits.

Based on Policy P2, an increase in the traffic noise level of 3 dB or more and exceed the "normally acceptable" level would be significant, or 5 dB or more and remain "normally acceptable". Extending this concept to lower noise levels, new noise levels that exceed the City of Tracy Noise Ordinance limits would be significant. The rationale for the Policy P2 criteria is that as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause annoyance.

Impact 1: ***Would the project generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?***

Traffic Noise Increases at Off-Site Receptors

Based upon the Policy P2 criteria, where existing traffic noise levels are greater than 65 dBA L_{dn}, at the outdoor activity areas of noise-sensitive uses, a +3.0 dBA L_{dn} increase in roadway noise levels will be considered significant. Where traffic noise levels cause an increase of +5.0 dB L_{dn} an increase in roadway noise levels will be considered significant. Where traffic noise levels cause new noise levels that exceed the City of Tracy noise standards, the noise level would be considered significant.

According to **Tables 3 and 4**, the maximum increase in traffic noise at the nearest sensitive receptor is predicted to be 0.1 dBA. Therefore, impacts resulting from increased traffic noise would be considered ***less-than-significant***, and no mitigation is required.

Operational Noise at Existing Sensitive Receptors

As shown on **Figure 3**, the project is predicted to expose nearby residences to noise levels up to 44 dBA, L_{eq} during both daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) hours. The predicted project noise levels would meet the City of Tracy Municipal Code noise level standard of 55 dBA, $L_{eq.}$

TABLE 10: PROJECT OPERATIONAL NOISE SIGNIFICANT INCREASE AT ADJACENT NOISE SENSITIVE RECEPTORS

Noise Sensitive Receptor	Ambient Noise Level	Project Noise Level	Ambient + Project Noise Level	Difference
1	67.7 L_{dn}[1]	51.0 L_{dn}[3]	67.8 L_{dn}[3]	0.1
2	62.7 L_{dn}[1,2]	45.0 L_{dn}[3]	62.8 L_{dn}[3]	0.1

Notes:
[1] As measured at LT-2
[2] Adjusted for sound wall (minus 5 dBA)
[3] Assumes continous day/night operation

Based on **Table 10** data, the proposed project will result in a 0.1 increase in the ambient noise level of nearby noise-sensitive receptors. As stated in the City of Tracy General Plan Policy P2, mitigation measures shall be required for new development projects under the following conditions:

- Causes the L_{dn} at noise-sensitive uses to increase 3 dB or more and exceed the "normally acceptable level;
- Causes the L_{dn} at noise-sensitive uses increase 5 dB or more and remain "normally acceptable" level;
- Cause new noise levels to exceed the City of Tracy Noise Ordinance limits.

The predicted project noise levels are predicted to comply with the City of Tracy General Plan Policy P2.

This is a ***less-than-significant*** impact, and no mitigation is required.

Construction Noise

During the construction phases of the project, noise from construction activities would add to the noise environment in the immediate project vicinity. As indicated in **Table 6**, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dBA L_{max} at a distance of 50 feet. Construction activities would also be temporary in nature and are anticipated to occur during normal daytime working hours.

Noise would also be generated during the construction phase by increased truck traffic on area roadways. A project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from the construction site. This noise increase would be of short duration and would occur during daytime hours.

Noise from localized point sources (such as construction sites) typically decreases by approximately 6 dBA with each doubling of distance from source to receptor. Given this noise attenuation rate and assuming no noise shielding from either natural or human-made features (e.g., trees, buildings, fences), outdoor receptors within approximately 290 feet of construction sites could experience maximum instantaneous noise levels of greater than 75 dBA when on-site construction-related noise levels exceed approximately 90 dBA at the boundary of the construction site. As previously discussed, nearby noise-sensitive receptors consist predominantly of residential dwellings located near the northern and eastern boundaries of the project site.

The City of Tracy Noise Ordinance places limitations on the acceptable hours of construction. During development of the proposed project, construction activities occurring during the more noise-sensitive nighttime hours (i.e., 7 PM to 7 AM) are prohibited. Additionally, there are several residential uses directly north and east of the project site which may be subject to construction noise. As a result, noise-generating construction activities would be considered to have a ***potentially significant*** short-term impact.

Transportation Noise on Project Site (Non-CEQA Issue)

Exterior Transportation Noise

Compliance with City's standards on new noise-sensitive receptors is not a CEQA consideration. However, this information is provided here so that a determination can be made regarding the ability of the proposed project to meet the requirements of the City of Tracy for exterior and interior noise levels at new sensitive uses proposed under the project.

As shown on **Figure 4**, the proposed outdoor activity areas are predicted to be exposed to exterior transportation noise levels up to approximately 64 dBA L_{dn}. This would meet the 65 dBA L_{dn} limit for outdoor areas established by the City of Tracy. Therefore, no additional noise control measures would be required.

Interior Transportation Noise

Based upon **Figure 4**, the proposed project would be exposed to exterior noise levels of up to 68 dBA L_{dn} up to the fourth-floor building facades closest to Corral Hollow Road. Based upon a typical 25 dB exterior-to-interior noise level reduction achieved by modern building construction[1], an interior noise level of up to 43 dBA L_{dn} would be expected. These noise levels comply with the City of Tracy interior noise level criteria without additional interior noise control measures.

[1] Assumes a minimum STC of 29 for exterior window assemblies.

Mitigation Measure

1(a) The City shall establish the following as conditions of approval for any permit that results in the use of construction equipment:

- Construction shall be limited to 7:00 a.m. to 7:00 p.m.
- All construction equipment powered by internal combustion engines shall be properly muffled and maintained.
- Quiet construction equipment, particularly air compressors, are to be selected whenever possible.
- All stationary noise-generating construction equipment such as generators or air compressors are to be located as far as is practical from existing residences. In addition, the project contractor shall place such stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.
- Unnecessary idling of internal combustion engines is prohibited.
- The construction contractor shall, to the maximum extent practical, locate on-site equipment staging areas to maximize the distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.

Timing/Implementation: Implemented prior to approval of grading and/or building permits
Enforcement/Monitoring: City of Tracy Community Development Services Department

Implementation of mitigation measures 1(a) would help to reduce construction-generated noise levels. With mitigation, this impact would be considered ***less-than-significant***.

Impact 2: Would the project generate excessive groundborne vibration or groundborne noise levels?

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural.

The **Table 6** data indicate that construction vibration levels anticipated for the project are less than the 0.2 in/sec threshold at distances of 26 feet. Sensitive receptors which could be impacted by construction related vibrations, especially vibratory compactors/rollers, are located further than 26 feet from typical construction activities. At distances greater than 26 feet construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

This is a **less-than-significant** impact and no mitigation is required.

Impact 3: For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

There are no airports within two miles of the project vicinity. Therefore, this impact is not applicable to the proposed project.

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Appendix A: Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
ASTC	Apparent Sound Transmission Class. Similar to STC but includes sound from flanking paths and correct for room reverberation. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by +5 dBA and nighttime hours weighted by +10 dBA.
DNL	See definition of Ldn.
IIC	Impact Insulation Class. An integer-number rating of how well a building floor attenuates impact sounds, such as footsteps. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz (Hz).
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
L(n)	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L50 is the sound level exceeded 50% of the time during the one-hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
NIC	Noise Isolation Class. A rating of the noise reduction between two spaces. Similar to STC but includes sound from flanking paths and no correction for room reverberation.
NNIC	Normalized Noise Isolation Class. Similar to NIC but includes a correction for room reverberation.
Noise	Unwanted sound.
NRC	Noise Reduction Coefficient. NRC is a single-number rating of the sound-absorption of a material equal to the arithmetic mean of the sound-absorption coefficients in the 250, 500, 1000, and 2,000 Hz octave frequency bands rounded to the nearest multiple of 0.05. It is a representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption.
RT60	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 Sabin.
SEL	Sound Exposure Level. SEL is a rating, in decibels, of a discrete event, such as an aircraft flyover or train pass by, that compresses the total sound energy into a one-second event.
SPC	Speech Privacy Class. SPC is a method of rating speech privacy in buildings. It is designed to measure the degree of speech privacy provided by a closed room, indicating the degree to which conversations occurring within are kept private from listeners outside the room.
STC	Sound Transmission Class. STC is an integer rating of how well a building partition attenuates airborne sound. It is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations. The STC rating is typically used to rate the sound transmission of a specific building element when tested in laboratory conditions where flanking paths around the assembly don't exist. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
Simple Tone	Any sound which can be judged as audible as a single pitch or set of single pitches.

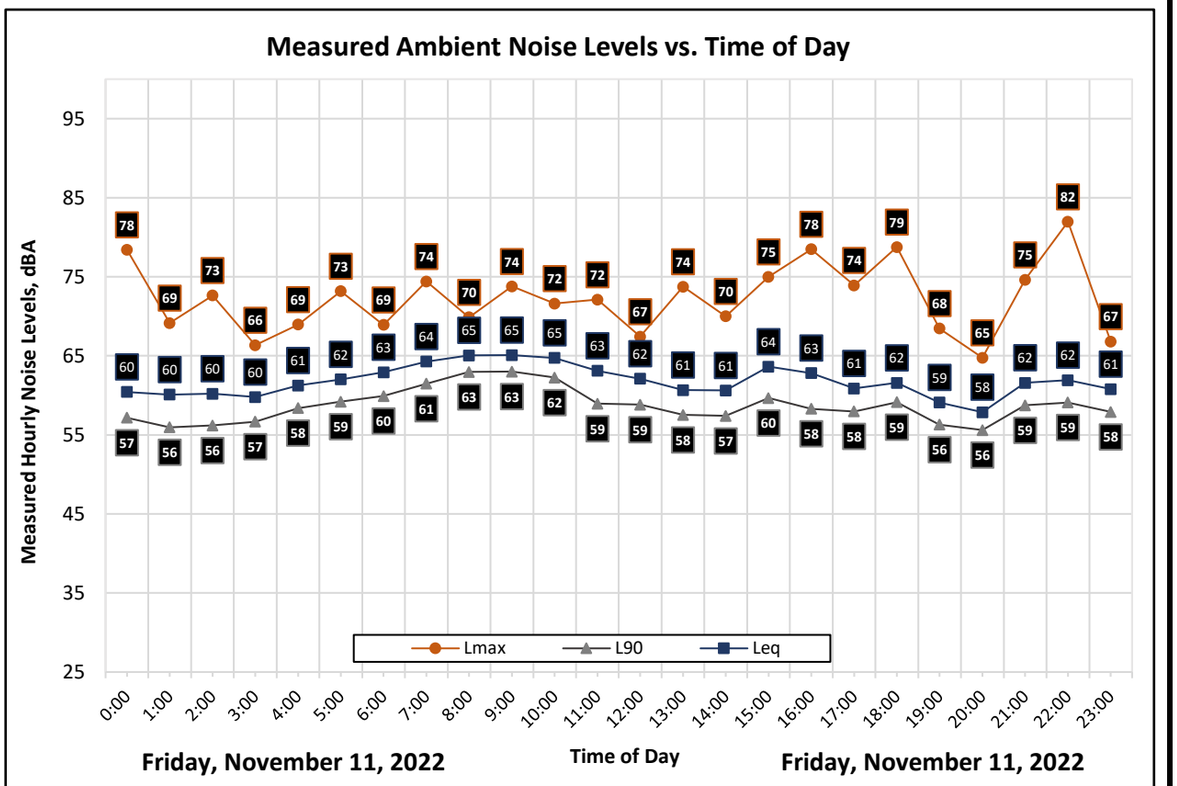
Appendix B: Continuous Ambient Noise Measurement Results

Appendix B1a: Continuous Noise Monitoring Results

Site: LT-1
Project: Tracy TRU by Hilton
Location: Northwestern Project Boundary
Coordinates: (37.7563776, -121.4551342)
Meter: LDL 820-5
Calibrator: CAL200

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Friday, November 11, 2022	0:00	60	78	60	57
Friday, November 11, 2022	1:00	60	69	59	56
Friday, November 11, 2022	2:00	60	73	59	56
Friday, November 11, 2022	3:00	60	66	59	57
Friday, November 11, 2022	4:00	61	69	61	58
Friday, November 11, 2022	5:00	62	73	62	59
Friday, November 11, 2022	6:00	63	69	63	60
Friday, November 11, 2022	7:00	64	74	64	61
Friday, November 11, 2022	8:00	65	70	65	63
Friday, November 11, 2022	9:00	65	74	65	63
Friday, November 11, 2022	10:00	65	72	65	62
Friday, November 11, 2022	11:00	63	72	62	59
Friday, November 11, 2022	12:00	62	67	62	59
Friday, November 11, 2022	13:00	61	74	60	58
Friday, November 11, 2022	14:00	61	70	60	57
Friday, November 11, 2022	15:00	64	75	64	60
Friday, November 11, 2022	16:00	63	78	62	58
Friday, November 11, 2022	17:00	61	74	60	58
Friday, November 11, 2022	18:00	62	79	61	59
Friday, November 11, 2022	19:00	59	68	58	56
Friday, November 11, 2022	20:00	58	65	57	56
Friday, November 11, 2022	21:00	62	75	61	59
Friday, November 11, 2022	22:00	62	82	61	59
Friday, November 11, 2022	23:00	61	67	60	58

Statistics	Leq	Lmax	L50	L90
Day Average	63	72	62	59
Night Average	61	72	60	58
Day Low	58	65	57	56
Day High	65	79	65	63
Night Low	60	66	59	56
Night High	63	82	63	60
Ldn	67	Day %		73
CNEL	68	Night %		27

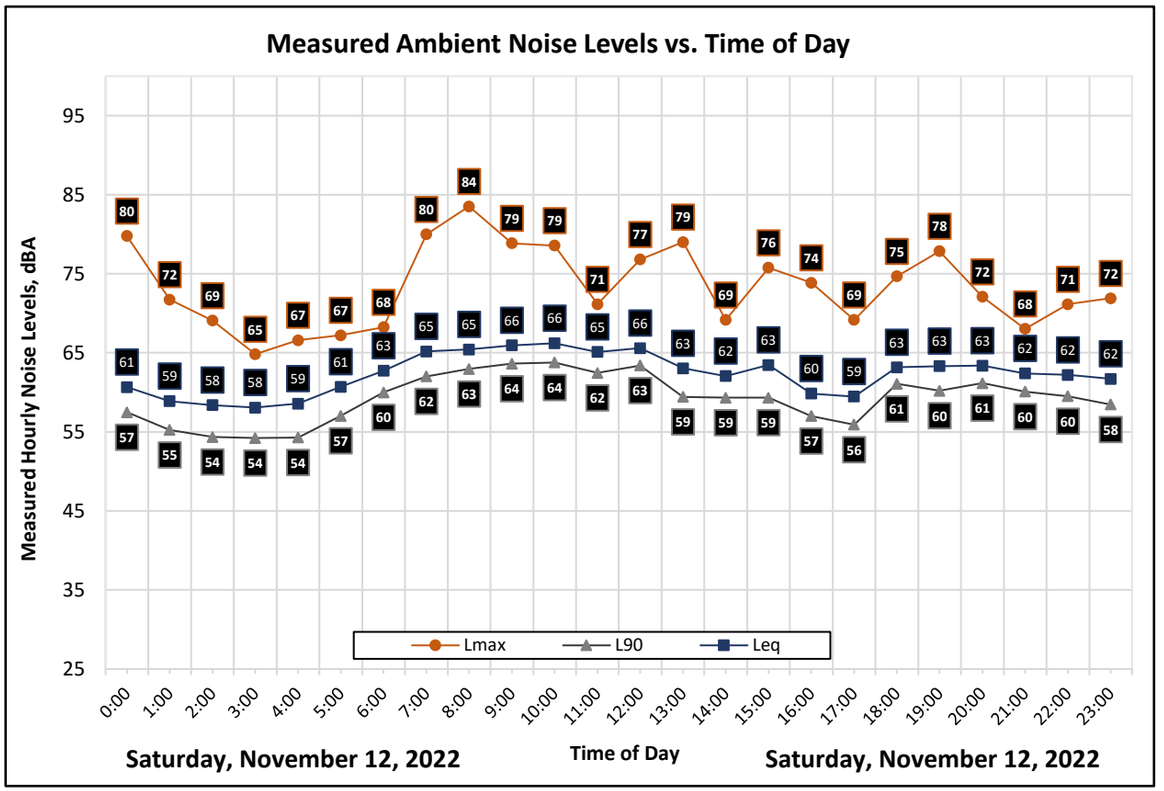


Appendix B1b: Continuous Noise Monitoring Results

Site: LT-1
Project: Tracy TRU by Hilton
Location: Northwestern Project Boundary
Coordinates: (37.7563776, -121.4551342)
Meter: LDL 820-5
Calibrator: CAL200

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Saturday, November 12, 2022	0:00	61	80	60	57
Saturday, November 12, 2022	1:00	59	72	58	55
Saturday, November 12, 2022	2:00	58	69	58	54
Saturday, November 12, 2022	3:00	58	65	57	54
Saturday, November 12, 2022	4:00	59	67	58	54
Saturday, November 12, 2022	5:00	61	67	60	57
Saturday, November 12, 2022	6:00	63	68	62	60
Saturday, November 12, 2022	7:00	65	80	65	62
Saturday, November 12, 2022	8:00	65	84	65	63
Saturday, November 12, 2022	9:00	66	79	66	64
Saturday, November 12, 2022	10:00	66	79	66	64
Saturday, November 12, 2022	11:00	65	71	65	62
Saturday, November 12, 2022	12:00	66	77	65	63
Saturday, November 12, 2022	13:00	63	79	62	59
Saturday, November 12, 2022	14:00	62	69	61	59
Saturday, November 12, 2022	15:00	63	76	62	59
Saturday, November 12, 2022	16:00	60	74	59	57
Saturday, November 12, 2022	17:00	59	69	58	56
Saturday, November 12, 2022	18:00	63	75	63	61
Saturday, November 12, 2022	19:00	63	78	63	60
Saturday, November 12, 2022	20:00	63	72	63	61
Saturday, November 12, 2022	21:00	62	68	62	60
Saturday, November 12, 2022	22:00	62	71	62	60
Saturday, November 12, 2022	23:00	62	72	61	58

Statistics	Leq	Lmax	L50	L90
Day Average	64	75	63	61
Night Average	60	70	60	57
Day Low	59	68	58	56
Day High	66	84	66	64
Night Low	58	65	57	54
Night High	63	80	62	60
Ldn	67	Day %		82
CNEL	68	Night %		18

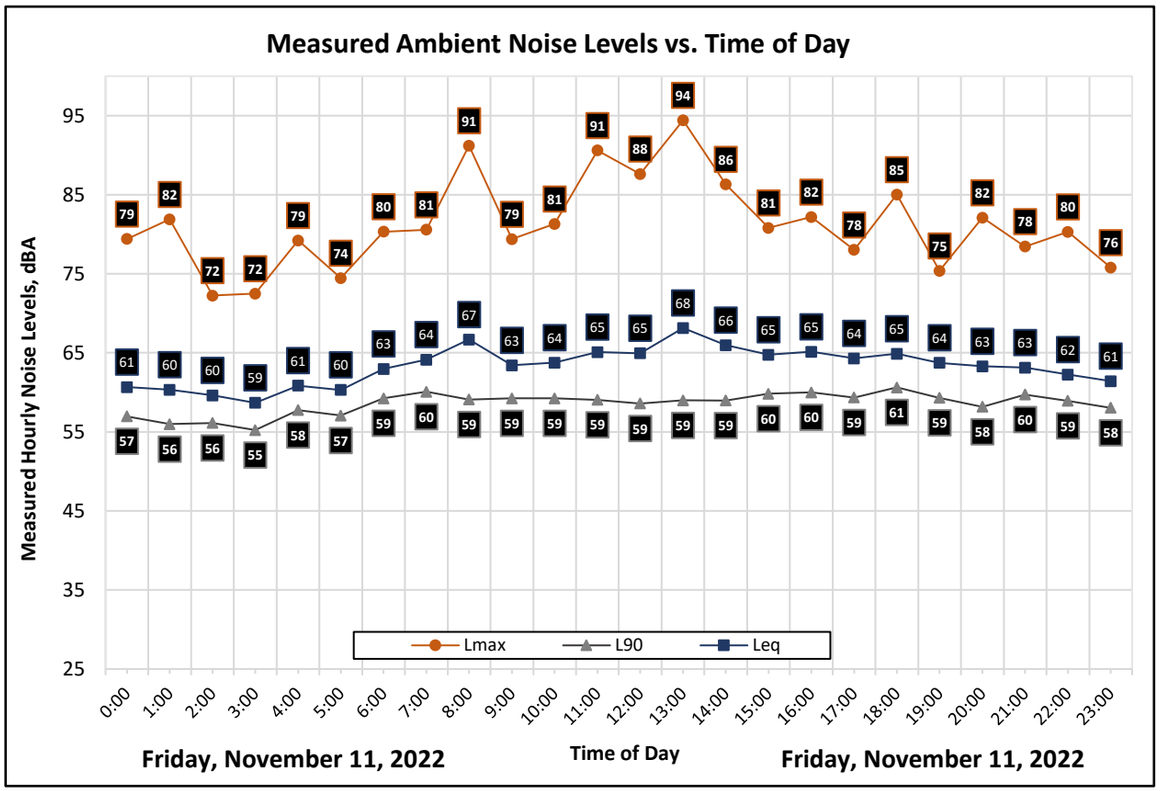


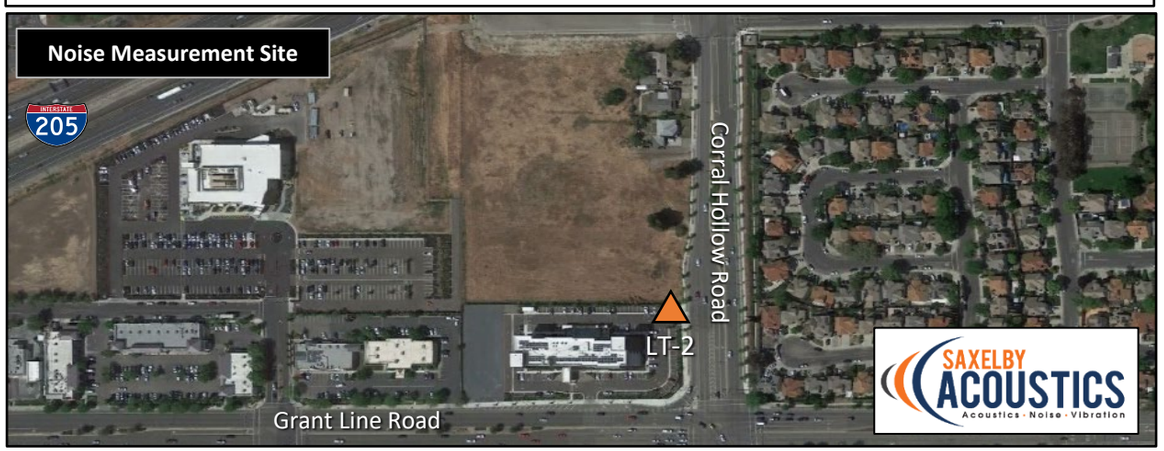
Appendix B2a: Continuous Noise Monitoring Results

Site: LT-2
Project: Tracy TRU by Hilton
Meter: LDL 820-2
Location: Southwestern Project Boundary
Calibrator: CAL200
Coordinates: (37.7549510, -121.4536878)

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Friday, November 11, 2022	0:00	61	79	57	57
Friday, November 11, 2022	1:00	60	82	56	56
Friday, November 11, 2022	2:00	60	72	56	56
Friday, November 11, 2022	3:00	59	72	55	55
Friday, November 11, 2022	4:00	61	79	58	58
Friday, November 11, 2022	5:00	60	74	57	57
Friday, November 11, 2022	6:00	63	80	59	59
Friday, November 11, 2022	7:00	64	81	60	60
Friday, November 11, 2022	8:00	67	91	59	59
Friday, November 11, 2022	9:00	63	79	59	59
Friday, November 11, 2022	10:00	64	81	59	59
Friday, November 11, 2022	11:00	65	91	59	59
Friday, November 11, 2022	12:00	65	88	59	59
Friday, November 11, 2022	13:00	68	94	59	59
Friday, November 11, 2022	14:00	66	86	59	59
Friday, November 11, 2022	15:00	65	81	60	60
Friday, November 11, 2022	16:00	65	82	60	60
Friday, November 11, 2022	17:00	64	78	59	59
Friday, November 11, 2022	18:00	65	85	61	61
Friday, November 11, 2022	19:00	64	75	59	59
Friday, November 11, 2022	20:00	63	82	58	58
Friday, November 11, 2022	21:00	63	78	60	60
Friday, November 11, 2022	22:00	62	80	59	59
Friday, November 11, 2022	23:00	61	76	58	58

Statistics	Leq	Lmax	L50	L90
Day Average	65	84	59	59
Night Average	61	77	57	57
Day Low	63	75	58	58
Day High	68	94	61	61
Night Low	59	72	55	55
Night High	63	82	59	59
Ldn	68	Day %		83
CNEL	68	Night %		17



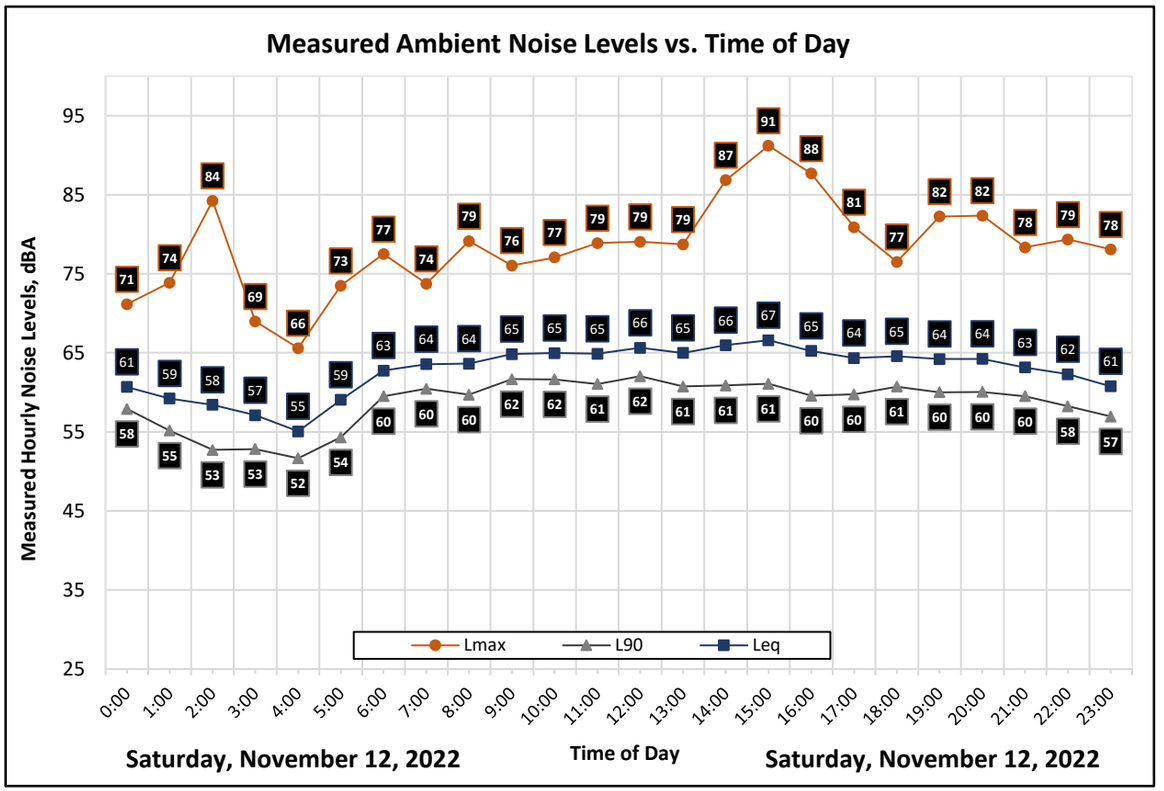


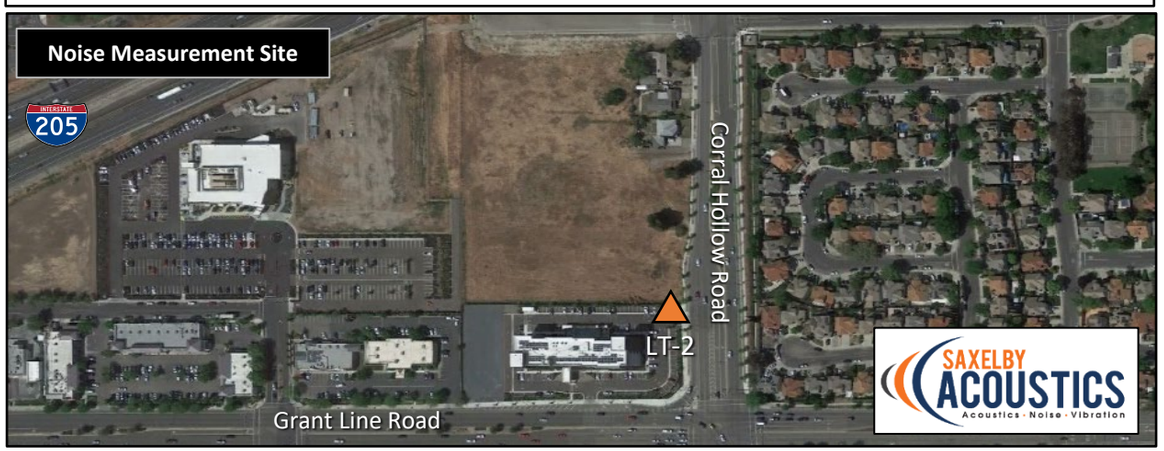
Appendix B2b: Continuous Noise Monitoring Results

Site: LT-2
Project: Tracy TRU by Hilton
Meter: LDL 820-2
Location: Southwestern Project Boundary
Calibrator: CAL200
Coordinates: (37.7549510, -121.4536878)

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Saturday, November 12, 2022	0:00	61	71	58	58
Saturday, November 12, 2022	1:00	59	74	55	55
Saturday, November 12, 2022	2:00	58	84	53	53
Saturday, November 12, 2022	3:00	57	69	53	53
Saturday, November 12, 2022	4:00	55	66	52	52
Saturday, November 12, 2022	5:00	59	73	54	54
Saturday, November 12, 2022	6:00	63	77	60	60
Saturday, November 12, 2022	7:00	64	74	60	60
Saturday, November 12, 2022	8:00	64	79	60	60
Saturday, November 12, 2022	9:00	65	76	62	62
Saturday, November 12, 2022	10:00	65	77	62	62
Saturday, November 12, 2022	11:00	65	79	61	61
Saturday, November 12, 2022	12:00	66	79	62	62
Saturday, November 12, 2022	13:00	65	79	61	61
Saturday, November 12, 2022	14:00	66	87	61	61
Saturday, November 12, 2022	15:00	67	91	61	61
Saturday, November 12, 2022	16:00	65	88	60	60
Saturday, November 12, 2022	17:00	64	81	60	60
Saturday, November 12, 2022	18:00	65	77	61	61
Saturday, November 12, 2022	19:00	64	82	60	60
Saturday, November 12, 2022	20:00	64	82	60	60
Saturday, November 12, 2022	21:00	63	78	60	60
Saturday, November 12, 2022	22:00	62	79	58	58
Saturday, November 12, 2022	23:00	61	78	57	57

Statistics	Leq	Lmax	L50	L90
Day Average	65	81	61	61
Night Average	60	75	55	55
Day Low	63	74	60	60
Day High	67	91	62	62
Night Low	55	66	52	52
Night High	63	84	60	60
Ldn	67	Day %		86
CNEL	68	Night %		14





Appendix D: Traffic Noise Calculations

Appendix D-1

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 221010
Description: Tracy TRU by Hilton - Existing
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset 60 dBA	65 dBA	70 dBA	Level, dBA
1	Orchard Way	South of Grant Line Rd	3,550	83	0	17	1.0%	1.0%	45	50	-5	78	36	17	57.9
2	Corral Hollow Rd	South of Grant Line Rd	21,640	83	0	17	1.0%	1.0%	45	90	-5	259	120	56	61.9
3	Grant Line Road	East of Corral Hollow Rd	18,580	83	0	17	1.0%	1.0%	45	90	-5	234	109	50	61.2
4	Grant Line Road	West of Orchard Pkwy	24,000	83	0	17	1.0%	1.0%	45	360	0	278	129	60	58.3
5	Corral Hollow Rd	South of Kavanagh Ave	11,140	83	0	17	1.0%	1.0%	45	95	-5	166	77	36	58.7
6	Corral Hollow Rd	North of Kavanagh Ave	10,270	83	0	17	1.0%	1.0%	45	90	-5	158	73	34	58.7

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Appendix D-2

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 221010
Description: Tracy TRU by Hilton - Existing Plus Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset 60 dBA	65 dBA	70 dBA	Level, dBA
1	Orchard Way	South of Grant Line Rd	3,550	83	0	17	1.0%	1.0%	45	50	-5	78	36	17	57.9
2	Corral Hollow Rd	South of Grant Line Rd	21,760	83	0	17	1.0%	1.0%	45	90	-5	260	121	56	61.9
3	Grant Line Road	East of Corral Hollow Rd	18,680	83	0	17	1.0%	1.0%	45	90	-5	235	109	51	61.2
4	Grant Line Road	West of Orchard Pkwy	24,170	83	0	17	1.0%	1.0%	45	360	0	279	129	60	58.3
5	Corral Hollow Rd	South of Kavanagh Ave	11,150	83	0	17	1.0%	1.0%	45	95	-5	167	77	36	58.7
6	Corral Hollow Rd	North of Kavanagh Ave	10,320	83	0	17	1.0%	1.0%	45	90	-5	158	73	34	58.7

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Appendix D-3

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 221010
Description: Tracy TRU by Hilton - Background
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset 60 dBA	65 dBA	70 dBA	Level, dBA
1	Orchard Way	South of Grant Line Rd	3,550	83	0	17	1.0%	1.0%	45	50	-5	78	36	17	57.9
2	Corral Hollow Rd	South of Grant Line Rd	21,920	83	0	17	1.0%	1.0%	45	90	-5	261	121	56	61.9
3	Grant Line Road	East of Corral Hollow Rd	18,820	83	0	17	1.0%	1.0%	45	90	-5	236	110	51	61.3
4	Grant Line Road	West of Orchard Pkwy	24,330	83	0	17	1.0%	1.0%	45	360	0	280	130	60	58.4
5	Corral Hollow Rd	South of Kavanagh Ave	11,500	83	0	17	1.0%	1.0%	45	95	-5	170	79	37	58.8
6	Corral Hollow Rd	North of Kavanagh Ave	10,380	83	0	17	1.0%	1.0%	45	90	-5	159	74	34	58.7

Appendix D-4

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 221010
Description: Tracy TRU by Hilton - Background Plus Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset 60 dBA	65 dBA	70 dBA	Level, dBA
1	Orchard Way	South of Grant Line Rd	3,550	83	0	17	1.0%	1.0%	45	50	-5	78	36	17	57.9
2	Corral Hollow Rd	South of Grant Line Rd	22,040	83	0	17	1.0%	1.0%	45	90	-5	262	122	57	62.0
3	Grant Line Road	East of Corral Hollow Rd	18,920	83	0	17	1.0%	1.0%	45	90	-5	237	110	51	61.3
4	Grant Line Road	West of Orchard Pkwy	24,500	83	0	17	1.0%	1.0%	45	360	0	281	131	61	58.4
5	Corral Hollow Rd	South of Kavanagh Ave	11,560	83	0	17	1.0%	1.0%	45	95	-5	171	79	37	58.8
6	Corral Hollow Rd	North of Kavanagh Ave	10,440	83	0	17	1.0%	1.0%	45	90	-5	159	74	34	58.7

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APPENDIX D

Water Distribution System Hydraulic Network Analysis

Technical Memorandum

BLACKWATER CONSULTING ENGINEERS

To: Majeed Mohamed, City of Tracy
From: Aja Verburg, P.E.
Ulises Yepez
Bao Cha, E.I.T.

Subject: FINAL Tru by Hilton Project
Water Distribution System Hydraulic Network Analysis
Date: February 3, 2023

INTRODUCTION

This Technical Memorandum (TM) has been prepared for the City of Tracy (City) by Black Water Consulting Engineers, Inc. (Black Water) to present the findings of the water distribution system steady-state hydraulic network analysis using Innovyze InfoWater software for the proposed Tru by Hilton (Project). The City's developer hydraulic network model of the existing potable water system with several development improvements was obtained from the City's Master Plan consultant on November 20, 2020 (2020 Developer Water Model). This TM addresses the inclusion of the Project into the 2020 Developer Water Model and documents the impacts on the water system.

Section 1 provides a general description of the proposed Project, design criteria, and assumptions. Section 2 includes the analyses methodology and analyses results. Section 3 includes a review of system-wide storage to serve the project. Section 4 includes identified system deficiencies and recommended improvements.

Engineering reports and documents reviewed and referenced in this TM include the following:

[1] City of Tracy Citywide Water System Master Plan Update, West Yost Associates, November 2020 (2020 WSMP Update).
[2] City of Tracy General Plan, Design, Community & Environment, February 2011 (2011 General Plan).
[3] Tru by Hilton Plan Set, prepared by Red Inc. Architects, April 22, 2022.
[4] Tru by Hilton Development Application Review, prepared by Anand Kotecha, May 9, 2022.

SECTION 1 – GENERAL DESCRIPTION

Project Description

The proposed Project is located to the west of Corral Hollow Road and to the north of Grant Line Road within the Assessor Parcel No. 214-020-090. Refer to **Figure 1** for the Project location. The proposed utility plan for the Project is included in **Appendix A**. The Project site area totals approximately 1.67 gross acres

and consists of a one (1) 4-story building. The 2011 General Plan designates the Project area as office; however, the proposed development land use is classified as commercial.
Water infrastructure to serve the Project includes an existing 12-inch diameter water distribution main in Corral Hollow Road for domestic use and an existing 12-inch diameter water distribution main in Grant Line Road for fire service.

Figure 1 – Project Site Location

Existing Potable Water System and Water Model

Design criteria summarized in this section applies to new development, as existing transmission mains are evaluated on a case-by-case basis. The 2020 Developer Water Model includes demands from the proposed development projects:

- Valpico and MacDonald Apartments
- Sierra Hills (Aspire I) Apartments
- I-205 Parcels M1 and M2 and Infill Parcels 7 and 13
- Grant Line Road Apartments
- Rocking Horse
- Aspire II Development
- Ellis Specific Plan Phases 1, 2, and 3
- Marriott TownePlace Suites
- Larch Clover Interim Annexation
- 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
- Tracy Hills Phases 1A, 1B, and 1C
- IPC Building 19A
- Costco Depot
- West Parkway Village
- KT Project
- IPC Prologis Sales Office Building
- IPC Building 2
- Tracy Alliance
- Barcelona Infill
- Berg Road Properties
- Harvest Apartments
- 321 E. Grant Line Apartments
- Project Hawk/IPC
- Home 2 Suites
- IPT Pescadero Buildings 2 and 3
- IPT Pescadero Building 4
- Byron Apartments
- Assisted Living and Memory Care
- La Quinta Inn & Suites
- Seefried Industrial Campus
- California Highway Patrol – E. Pescadero Ave.
- Triad Medical Office Building
- SANSUB Apartments
- Big Bird
- RNG Fueling Station and Truck Parking Lot
- 82 – Lot Subdivision

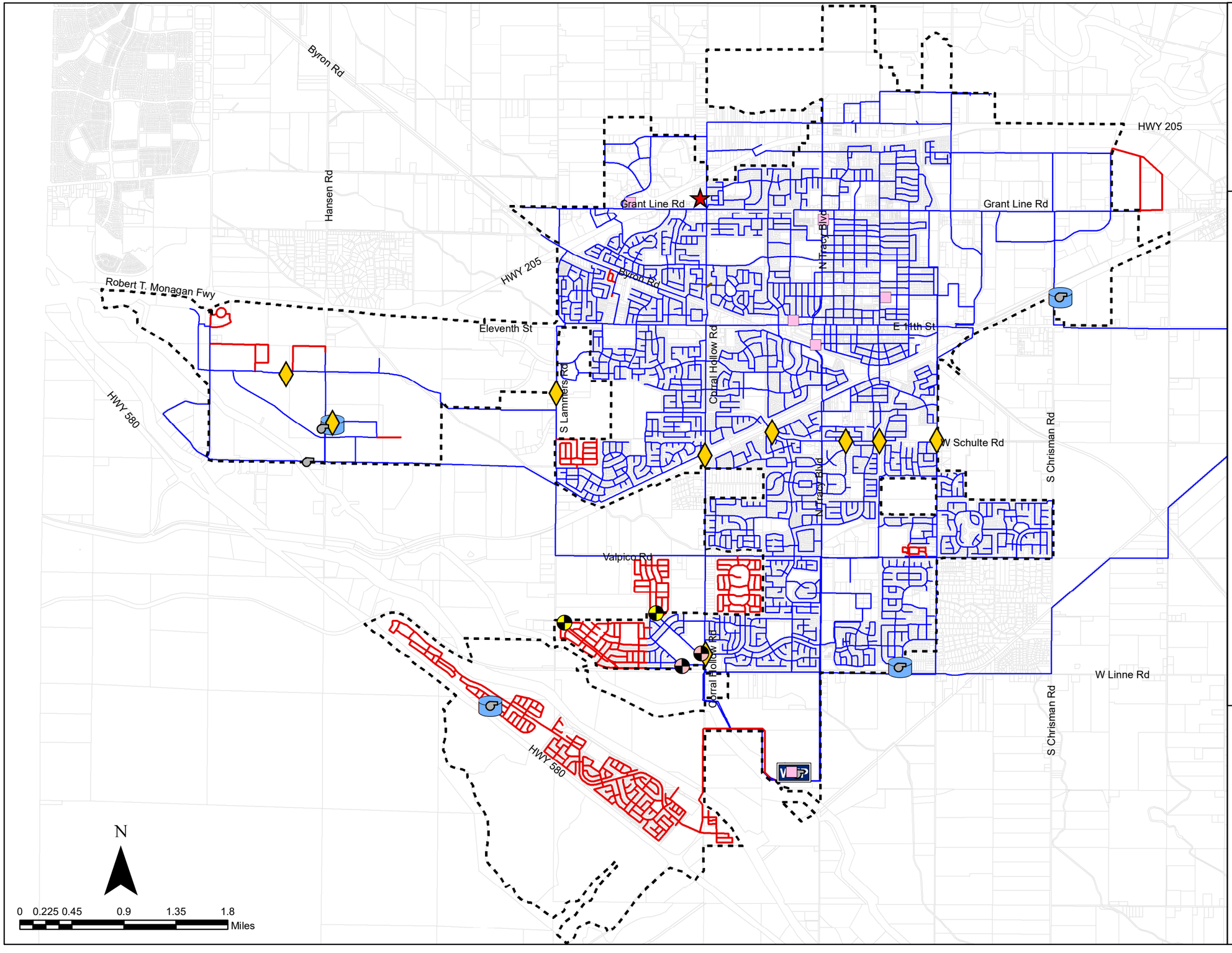
The total water demand in the 2020 Developer Water Model is within the buildout development time frame. Refer to **Table 1** for a comparison of the water demands in the 2020 WSMP Update and the 2020 Developer Water Model.

Table 1 – Comparison of Water Demands

Water Demand	Average Day Demand		Maximum Day Demand		Peak Hour Demand	
	gpm	mgd	gpm	mgd	gpm	mgd
Existing [a]	11,417	16.4	19,408	27.9	33,108	47.7
2025 [b]	13,264	19.1	22,550	32.5	38,467	55.4
Buildout [c]	21,605	31.1	36,729	52.9	62,656	90.2
2020 Developer Water Model [d]	-	-	25,501	36.7	43,500	62.6

[a] Refer to Table 7-7 of the 2020 WSMP Update.
[b] Refer to Table 8-2 of the 2020 WSMP Update.
[c] Refer to Table 8-3 of the 2020 WSMP Update.
[d] Include Project demands. Project demands are shown in Table 3 of this TM.

The 2020 Developer Water Model shows several 2025 and buildout improvements made to the existing water system based on the proposed development projects listed above. Refer to **Figure 2** for a layout of the current 2020 Developer Water Model.



TRACY

LEGEND

- Tracy City Limits
- Proposed System Pipeline
- Existing System Pipeline
- Existing Pressure Regulating Station
- Buildout Pressure Reducingn Valve
- Existing Pressure Reducing Valve
- Existing Storage Tank
- Existing Groundwater Well
- Existing Booster Pump Station
- WTP John Jones Water Treatment Plant
- Tru by Hilton Project

Figure 2

WATER DEMAND ANALYSIS

2020 Developer Water Model

BLACKWATER CONSULTING ENGINEERS

Estimated Project Water Demands

Water demands for the Project were estimated based on the unit water demand factors adopted in the 2020 WSMP Update. The total annual potable water demand for the project is approximately 3.68 acre-ft per year (af/yr) based on a unit water demand factor of 2.0 af/ac/yr for commercial land use and a unit water demand factor of 1.9 af/ac/yr for non-residential irrigation land use. Maximum day demands are estimated to be 170 percent of average day demands, and peak hour demands are estimated to be 290 percent of average day demands [1]. **Table 2** summarizes the estimated water demands for the Project.

Table 2 – Estimated Project Water Demands

Land Use Designation	Acreage, acres	Unit Potable Water Demand Factor [b], af/ac/yr	Annual Potable Water Demand, af/yr
Site [a]	1.67	-	-
Commercial [b]	1.42	2.00	2.85
Landscape Irrigation [b]	0.25	1.90	0.48
UAFW [c]	-	-	0.35
Total	-	-	3.68

[a] Based on Tru by Hilton Plan Set.
[b] Consistent with assumptions in the 2020 WSMP Update - Unit water demand factor to be applied to 85 percent of the total gross acres only, assuming 15 percent of the gross acreage is assumed to be landscape.
[c] Unaccounted-for water (UAFW) is equal to 9.6 percent of total water demand.

Table 3 summarizes the estimated average day demands, maximum day demands, and peak hour demands input into the water model.

Table 3 – Summary of Average Day Demands, Maximum Day Demands, and Peak Hour Demands

Average Day Demand		Maximum Day Demand [a]		Peak Hour Demand [b]	
gpm	mgd	gpm	mgd	gpm	mgd
2.28	0.0033	3.88	0.0056	6.61	0.0095

[a] Maximum day demand is 1.7 times the average day demand [1].
[b] Peak hour demand is 2.9 times the average day demand [1].

Design Criteria

Water system performance design criteria and analyses requirements for new development are summarized in **Table 4**.

Table 4 – Design Criteria and Requirements [1]

Component	Criteria
Fire Flow Requirements: Commercial	3,500 gpm
Water Distribution Line Sizing (Pipes Less than 18-inches in Diameter):	
Peak Hour Demand Conditions	
Minimum Pressure/ Maximum Pressure	40 psi/ 80 psi
Maximum Head loss	7 ft/kft
Maximum Velocity	8 fps
Maximum Day with Fire Flow Demand Condition	
Minimum Pressure/ Maximum Pressure	20 psi/ 80 psi
Maximum Head loss	10 ft/kft
Maximum Velocity	12 fps
Minimum Pipe Diameter	8 inches
Hazen-Williams "C" Factor	130
Pipeline Material	Ductile Iron

SECTION 2 – HYDRAULIC ANALYSES EVALUATION AND RESULTS

The results of the existing potable water system hydraulic steady-state analysis are provided for the following potable water demand scenarios:

- Maximum Day Demand plus Fire Flow – To evaluate the potable water system during the maximum day demand with fire flow scenario for the Project, individual fire flow demands were simulated at locations along the Project where fire service connections are proposed. The maximum day demand scenario is evaluated during the simulated fire flow event at the specified model junction to evaluate that the required minimum pressures are met, and maximum velocity requirements are not exceeded. Maximum day plus fire flow demands are met by the combined supply from treated surface water, storage tanks, and groundwater.

- Peak Hour Demand – A peak hour flow condition was simulated for the water distribution facilities to evaluate the system's capability to meet the peak hour demand scenario for the Project. Peak hour demands are met by the combined supply from treated surface water, storage tanks, and groundwater.

Modeling Results

The developer hydraulic modeling analysis evaluates the ability of the existing system to meet minimum system pressures as a primary criterion and maximum velocity and headloss as a secondary criterion, consistent with the criteria in **Table 4**, for each demand scenario with the addition of the Project demands to the 2020 Development Water Model. **Appendix B** includes figures showing the proposed Project connections to the existing water system and pressures for each modeling scenario and corresponding

data. The maximum day demand with fire flow scenario is evaluated first, as this is the highest demand scenario.

Maximum Day with Fire Flow Demand Scenario

The system pressure at the Project area ranged from 44 pounds per square inch (psi) to 48 psi with a maximum velocity of less than 5 feet per second (fps) for the maximum day demand with an applied fire flow demand of 3,500 gpm simulated at model node J-1- 5136 at the proposed point of connection to the existing 12-inch water distribution main in Grant Line Road. The Project meets the minimum pressure criterion of 20 psi, maximum velocity criterion of 12 fps, and maximum headloss criterion of 10 ft/kft at the Project site.

Model output data shows that the maximum headloss criterion is not met at the pipelines near the intersection of Tracy Boulevard and W 6th Street. As noted in the 2020 WSMP Update, it is recommended that the existing pipeline located between 6th Street and Tracy Boulevard be replaced with a new pipeline to accommodate future demands. Model output also shows that the existing water system does not meet the maximum pressure criterion of 80 psi at several locations throughout the existing system. The 2020 WSMP Update indicated that services that experience pressure exceeding 80 psi are required to be fitted with a pressure reducing valve. The Project does not significantly impact these existing deficiencies. **Appendix B**, Figure 1 presents the water distribution system modeling layout and system pressures for this demand scenario. **Appendix B** includes model output data for the modeling analyses.

Peak Hour Demand Scenario

The system pressure at the service connections to the Project area ranged from 57 psi to 60 psi with a maximum velocity of less than 1 fps in existing water distribution mains serving the Project for the peak hour demand scenario. The Project meets the minimum pressure criterion of 40 psi, maximum velocity criterion of 8 fps, and maximum headloss of 7 ft/kft at the Project site.

Model output data shows that the maximum velocity criterion and maximum headloss criterion is not met at the pipelines near the intersection of Tracy Boulevard and W 6th Street. As noted in the 2020 WSMP Update, it is recommended that the existing pipeline located between 6th Street and Tracy Boulevard be replaced with a new pipeline to accommodate future demands. Model output also shows that the existing water system does not meet the maximum pressure criterion of 80 psi at several locations throughout the existing system. The 2020 WSMP Update indicated that services that experience pressure exceeding 80 psi are required to be fitted with a pressure reducing valve. The Project does not significantly impact these existing deficiencies. **Appendix B**, Figure 2 presents the water distribution system modeling layout and system pressures for this demand scenario. **Appendix B** includes model output data for the modeling analyses.

SECTION 3 – STORAGE EVALUATION

The storage requirement for the City's potable water system consists of operation storage equal to 30 percent of the maximum day demand, emergency storage equal to 1.5 times the average day demand, and fire flow demand. Fire flow storage is based on storage required for two concurrent fire flow events:

a Single Family Residential fire flow and Industrial fire flow. The Project is within the system's Pressure Zone 1 which has a total fire flow storage of 1.14 million-gallon (MG).

The required fire flow storage component for this Project would be shared with other existing and proposed developments served by Zones 1 and 2. However, the Project's required operational and emergency storage capacity would be in addition to the requirements from existing buildings and proposed developments in Pressure Zone 1 and Pressure Zone 2. Based on the City's storage capacity criteria, the required operational and emergency storage components for the Project are 0.002 MG and 0.005 MG, respectively. Based on the City's available storage capacity and emergency storage credit in Zones 1 and 2, there is a storage capacity surplus of approximately 2.3 MG after accounting for the Project's storage requirements.

SECTION 4 – SYSTEM DEFICIENCIES AND RECOMMENDED IMPROVEMENTS

Existing system deficiencies identified include high velocity and high pressures at several locations within the City's water distribution system during maximum day demand with fire flow and peak hour demand. Refer to **Appendix C**, Figure 7-4 of the 2020 WSMP Update for the areas where the water distribution system exceeded the maximum pressure criterion, and Figure 8-5 of the 2020 WSMP Update for the areas where the water distribution system exceeded the maximum velocity criterion. As noted in the 2020 WSMP Update, it is recommended that the existing pipeline located between 6th Street and Tracy Boulevard be replaced with a new pipeline to accommodate future demands. The 2020 WSMP Update has indicated that services that experience pressure exceeding 80 psi are required to be fitted with a pressure reducing valve.

Several existing pipeline improvements are recommended to mitigate existing fire flow deficiencies. As noted in the 2020 WSMP Update, these fire flow deficiencies are not triggered by projected water demands from new developments. Refer to **Appendix C**, Figure 7-8 of the 2020 WSMP Update for the existing system pipeline recommended improvements.

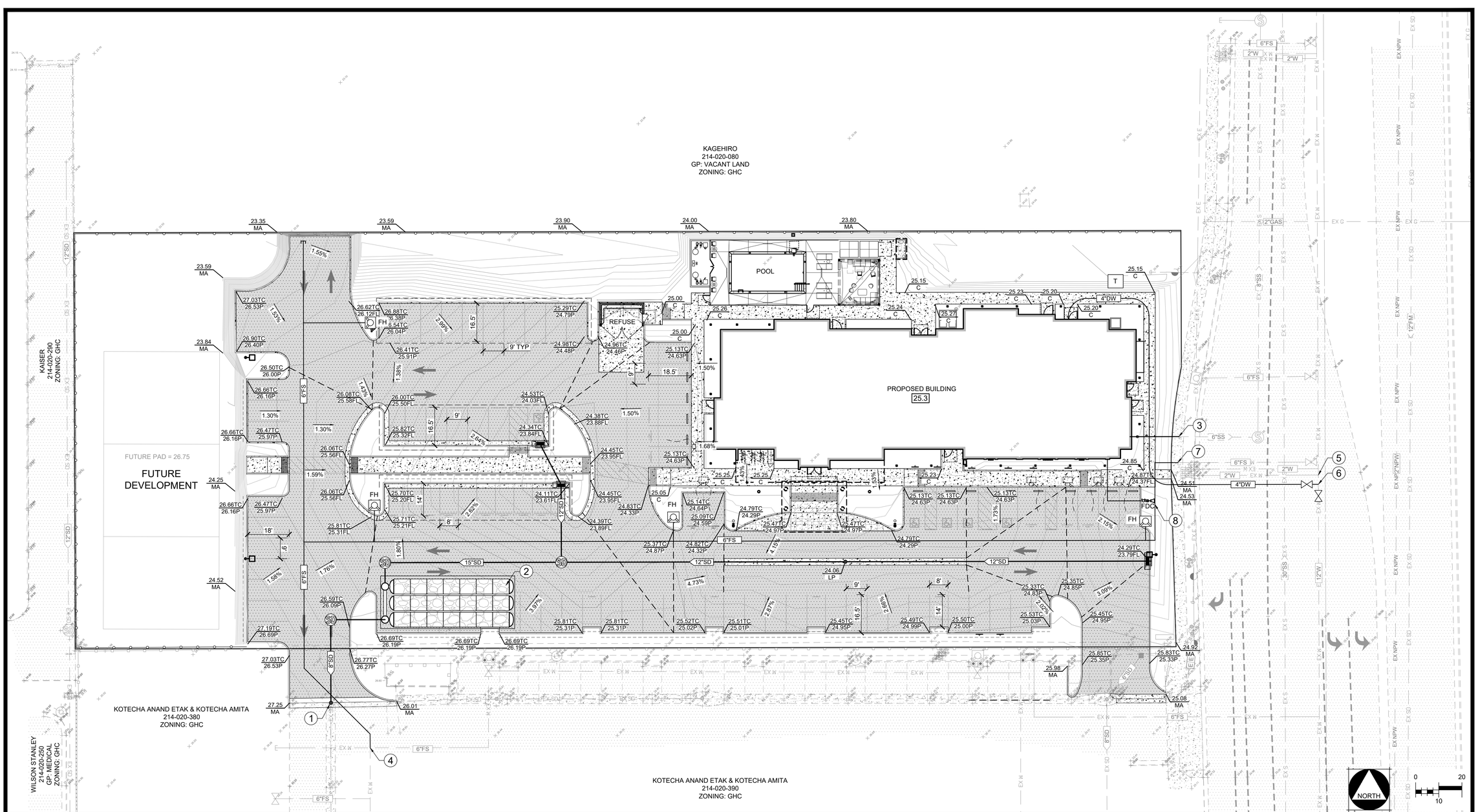
These existing deficiencies have been observed as part of this analysis to document that the Project does not significantly impact these deficiencies. The system-wide storage capacity is not exceeded or significantly impacted by the Project. Any changes or modifications to the proposed Project, water system layout, or development of the Project inconsistent with assumptions made in this analysis will require additional hydraulic evaluation.

SUMMARY

Based on the modeling results, the Project does not significantly impact the existing system deficiencies. There is sufficient storage capacity to serve the Project. No off-site improvements are required to serve the Project.

APPENDIX A

PRELIMINARY PROPOSED UTILITY PLAN



GENERAL INFORMATION

1. OWNER: RAAD HOSPITALITY GROUP, 2025 W GRANT LINE ROAD, TRACY, CA 95377
2. APPLICANT: ANAND KOTECHA, RAAD HOSPITALITY GROUP, 103 E LOUISE AVE, LATHROP CA 95330
3. ENGINEER: MCR ENGINEERING, 1242 DUPONT COURT, MANTECA, CA 95336
4. EXISTING GENERAL PLAN: OFFICE
5. EXISTING ZONING: GHC (GENERAL HIGHWAY COMMERCIAL)
6. PROPOSED GENERAL PLAN: OFFICE
7. PROPOSED ZONING: GHC (GENERAL HIGHWAY COMMERCIAL)
8. UTILITIES: WATER: CITY OF TRACY; SEWER: CITY OF TRACY; STORM: CITY OF TRACY
9. APN: 214-020-090
10. 4 STORY HOTEL ON 1.97 ±ACRES
11. THE PROPERTY HAS GENTLE SLOPE WITH ELEVATIONS RANGING FROM 24'-27'
12. BOUNDARY LINES ARE BASED ON RECORD INFORMATION AND TOPOGRAPHIC SURVEY.
13. ANY EXISTING WELLS AND/OR SEPTIC SYSTEMS ON SITE SHALL BE ABANDONED PER SAN JOAQUIN COUNTY STANDARD
14. 10' PUBLIC UTILITY EASEMENTS SHALL BE DEDICATED ALONG ALL STREET FRONTAGE.
15. UTILITIES TO LOCATED WITHIN PUBLIC UTILITY EASEMENTS AND SHALL BE MAINTAINED BY GOVERNING AGENCIES.
16. ALL ADJACENT OVERHEAD POWER LINES AND/OR UTILITY LINES SHALL BE UNDERGROUND.

LEGEND

1. DRAINAGE DIRECTION
2. PROPOSED STORM DRAIN — SD
3. PROPOSED STORM DRAIN MAINTENANCE HOLE — SMH
4. PROPOSED STORM DRAIN INLET
5. DRAINAGE MANAGEMENT AREA
6. PROPOSED SEWER — SS
7. PROPOSED WATER — W

UTILITY KEY NOTES:

1. CONNECT TO EX. 8" HDPE @ 22.48 INV.
2. PROPOSED ADS UNDERGROUND CHAMBER
3. CONNECT TO EX. 6" SS
4. CONNECT TO EX. 6" FIRE SERVICE
5. ABANDONED EX. 2" DOMESTIC WATER SERVICE
6. INSTALL 4" DOMESTIC WATER SERVICE WITH METER
7. CONNECT TO EX. 6" FIRE SERVICE AND INSTALL BACKFLOW PREVENTION DEVICE
8. INSTALL PIV & FDC

MCR ENGINEERING
www.mcreng.com
1242 DUPONT COURT
MANTECA, CA 95336
TEL : (209) 239 - 6229
FAX : (209) 239 - 8839

REGISTERED PROFESSIONAL ENGINEER — RAY EAVENSON — No. C54088 EXP. 12-31-23 — CIVIL — STATE OF CALIFORNIA

FOR PRELIMINARY REVIEW ONLY — NOT FOR CONSTRUCTION

APPROVED:

PLAN REVISIONS

NO.	DESCRIPTIONS	DATE
1		
2		
3		
4		
5		
6		
7		

PRELIMINARY GRADING, DRAINAGE AND UTILITY PLAN FOR:

TRU BY HILTON

D22-0018

22393 CORRAL HOLLOW ROAD

TRACY, CALIFORNIA

811 Know what's below. Call before you dig. 811 / 800-227-2600

JOB NO.:	21-119
DATE:	JULY, 2022
SCALE:	AS SHOWN
DR. BY:	RBP
CK. BY:	SLS

SHEET NO.

C1

OF 1 SHEET

APPENDIX B

MODELING ANALYSES FIGURES AND DATA OUTPUT

Figure 1 – Maximum Day Demand with Fire Flow Scenario

Maximum Day Demand with Fire Flow Output Data

Fire Flow Report

ID	Static Demand (gpm)	Static Pressure (psi)	Static Head (ft)	Fire-Flow Demand (gpm)	Residual Pressure (psi)	Hydrant Available Flow (gpm)	Hydrant Pressure at Available Flow (psi)
J-1-5134	1.5	59.91	162.05	3,500.00	45.65	7,537.49	20
J-1-5136	1.93	59.11	162.03	3,500.00	44.25	7,131.56	20

Junction Report

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J-1-32	6.17	25	133.7	47.1
J-1-496	7.27	26	133.84	46.73
J-1-706	5.25	27	133.55	46.17
J-1-728	11.25	22	134.16	48.6
J-1-1394	4.84	27	133.73	46.25
J-1-1402	4.79	27	133.71	46.24
J-1-2636	3.8	24	133.83	47.59
J-1-726	20.64	25	133.7	47.1
J-1-5134	1.5	23.79	133.89	47.71
J-1-5136	3,501.93	25.61	127.73	44.25

Pipe Report

ID	From Node	To Node	Length (ft)	Diameter (in)	Rough-ness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k-ft)
P-1-662	J-1-728	J-1-730	752	12	130	-194	0.55	0.09	0.12
P-1-1048	J-1-34	J-1-496	660	12	125	146	0.41	0.05	0.08
P-1-1050	J-1-496	J-1-5116	427	18	130	-1,196	1.51	0.21	0.49
P-1-1070	J-1-496	J-1-2934	675	16	130	-788	1.26	0.27	0.4
P-1-1882	J-1-476	J-1-728	916	12	125	202	0.57	0.13	0.14
P-1-2394	J-1-496	J-1-1402	935	16	130	446	0.71	0.13	0.14
P-1-2398	J-1-30	J-1-5136	1178	12	125	1,315	3.73	5.33	4.53
P-1-2400	J-1-496	J-1-32	22	12	130	1,677	4.76	0.15	6.6
P-1-2404	J-1-726	J-1-5134	396	12	125	-384	1.09	0.18	0.46
P-1-2408	J-1-1402	J-1-706	221	16	130	1,081	1.72	0.16	0.72
P-1-2410	J-1-706	J-1-490	536	16	130	1,076	1.72	0.38	0.71
P-1-2414	J-1-1402	J-1-1394	39	14	130	-640	1.33	0.02	0.52
P-1-3188	J-1-746	J-1-2636	453	8	130	157	1	0.27	0.59
P-1-2402	J-1-32	J-1-726	6	12	125	-516	1.46	0	0.8
P-1-2406	J-1-2636	J-1-726	223	8	130	153	0.98	0.13	0.56
P-3-2562	J-1-5128	J-1-1394	349	14	130	644	1.34	0.19	0.53
P-3-2568	J-1-5134	J-1-728	585	12	125	-385	1.09	0.27	0.47
P-3-2570	J-1-5136	J-1-32	514	12	125	-2,187	6.2	5.96	11.61

Figure 2 – Peak Hour Demand Scenario

Peak Hour Demand Output Data

Junction Report

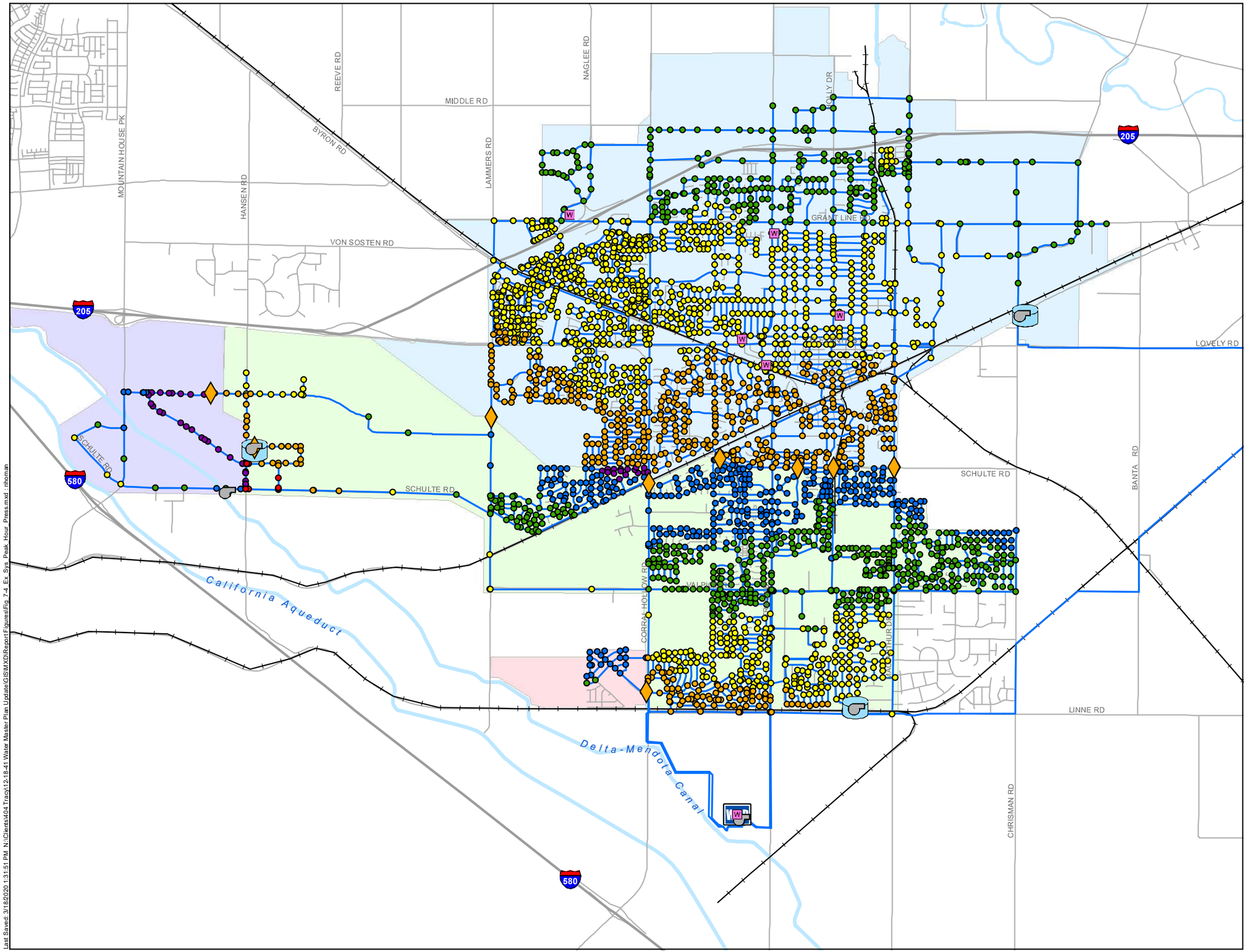
ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J-1-32	10.53	25	159.09	58.1
J-1-496	12.39	26	159.09	57.67
J-1-706	8.96	27	159.09	57.23
J-1-728	19.19	22	159.11	59.41
J-1-1402	8.17	27	159.08	57.23
J-1-726	35.21	25	159.09	58.1
J-1-5134	3.3	23.79	159.1	58.63
J-1-5136	3.3	25.61	159.1	57.84
J-1-1394	8.25	27	159.08	57.23
J-1-2636	6.48	24	159.09	58.54

Pipe Report

ID	From Node	To Node	Length (ft)	Diameter (in)	Rough -ness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k-ft)
P-1-662	J-1-728	J-1-730	751.98	12	130	19.72	0.06	0	0
P-1-1048	J-1-34	J-1-496	660.47	12	125	-44.87	0.13	0.01	0.01
P-1-1050	J-1-496	J-1-5116	426.65	18	130	153.18	0.19	0	0.01
P-1-1070	J-1-496	J-1-2934	675.17	16	130	-299.46	0.48	0.05	0.07
P-1-1882	J-1-476	J-1-728	915.78	12	125	91.65	0.26	0.03	0.03
P-1-2394	J-1-496	J-1-1402	934.59	16	130	109.77	0.18	0.01	0.01
P-1-2398	J-1-30	J-1-5136	1,177.79	12	125	34.14	0.1	0.01	0.01
P-1-2400	J-1-496	J-1-32	22	12	130	-20.76	0.06	0	0
P-1-2404	J-1-726	J-1-5134	396.19	12	125	-49.44	0.14	0	0.01
P-1-2408	J-1-1402	J-1-706	220.77	16	130	-169.21	0.27	0.01	0.02
P-1-2410	J-1-706	J-1-490	536.22	16	130	-178.17	0.28	0.01	0.03
P-1-2414	J-1-1402	J-1-1394	39.46	14	130	270.81	0.56	0	0.11
P-1-2402	J-1-32	J-1-726	5.88	12	125	-0.45	0	0	0
P-1-2406	J-1-2636	J-1-726	223.07	8	130	-13.79	0.09	0	0.01
P-3-2568	J-1-5134	J-1-728	585.47	12	125	-52.74	0.15	0.01	0.01
P-3-2570	J-1-5136	J-1-32	513.9	12	125	30.84	0.09	0	0
P-1-3188	J-1-746	J-1-2636	453.11	8	130	-7.31	0.05	0	0
P-3-2562	J-1-5128	J-1-1394	349.12	14	130	-262.55	0.55	0.04	0.1

APPENDIX C

CITY OF TRACY 2020 WATER SYSTEM MASTER PLAN
FIGURE 7-4 EXISTING SYSTEM PRESSURES PEAK HOUR DEMAND
FIGURE 7-8 EXISTING SYSTEM RECOMMENDED IMPROVEMENTS
FIGURE 8-5 2025 PIPELINE VELOCITY PEAK HOUR DEMAND



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
- 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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TRACY

WEST YOST ASSOCIATES

Figure 7-4

Existing System Pressures Peak Hour Demand

City of Tracy
Water System Master Plan Update

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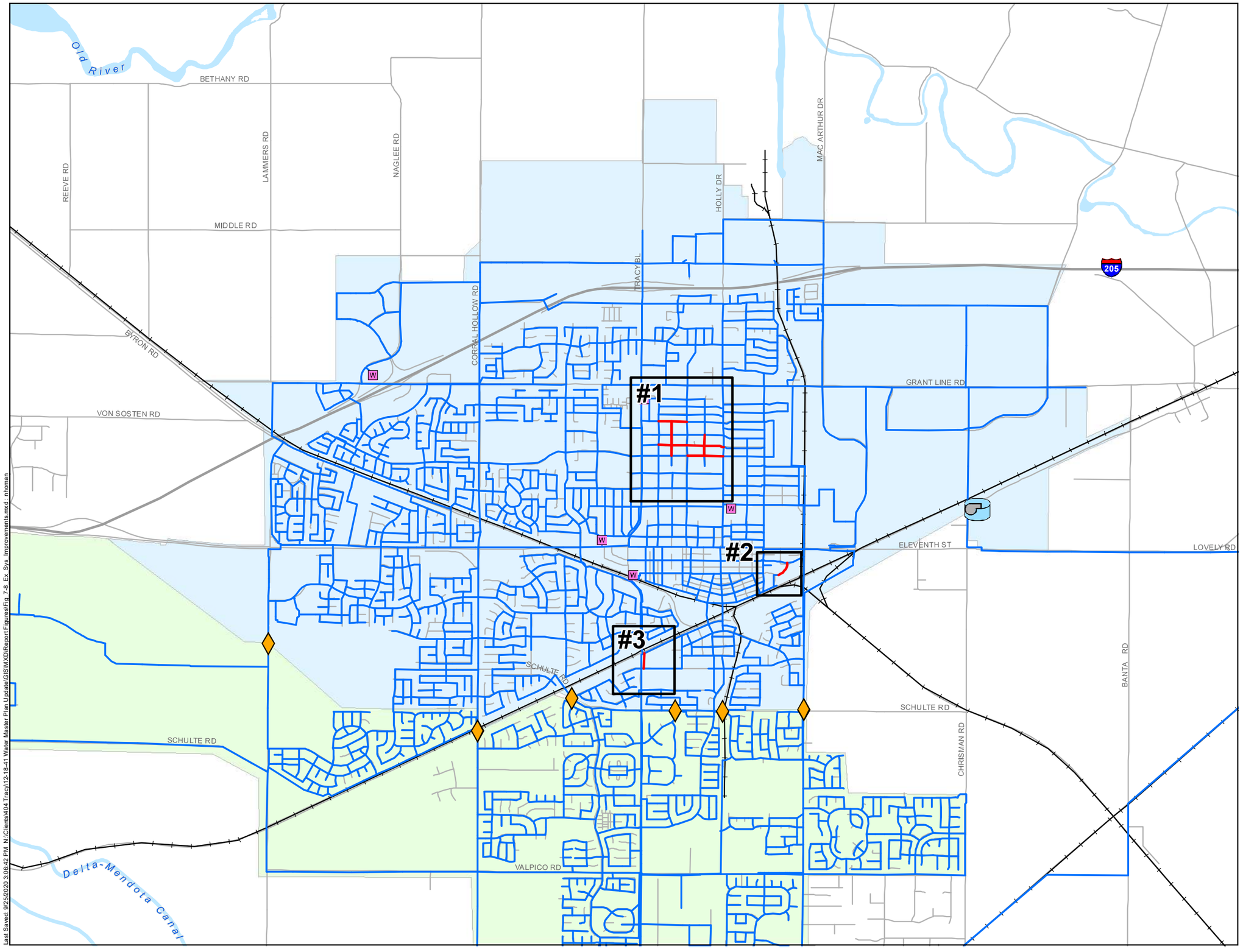

N

0 1,500 3,000

Scale in Feet

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).

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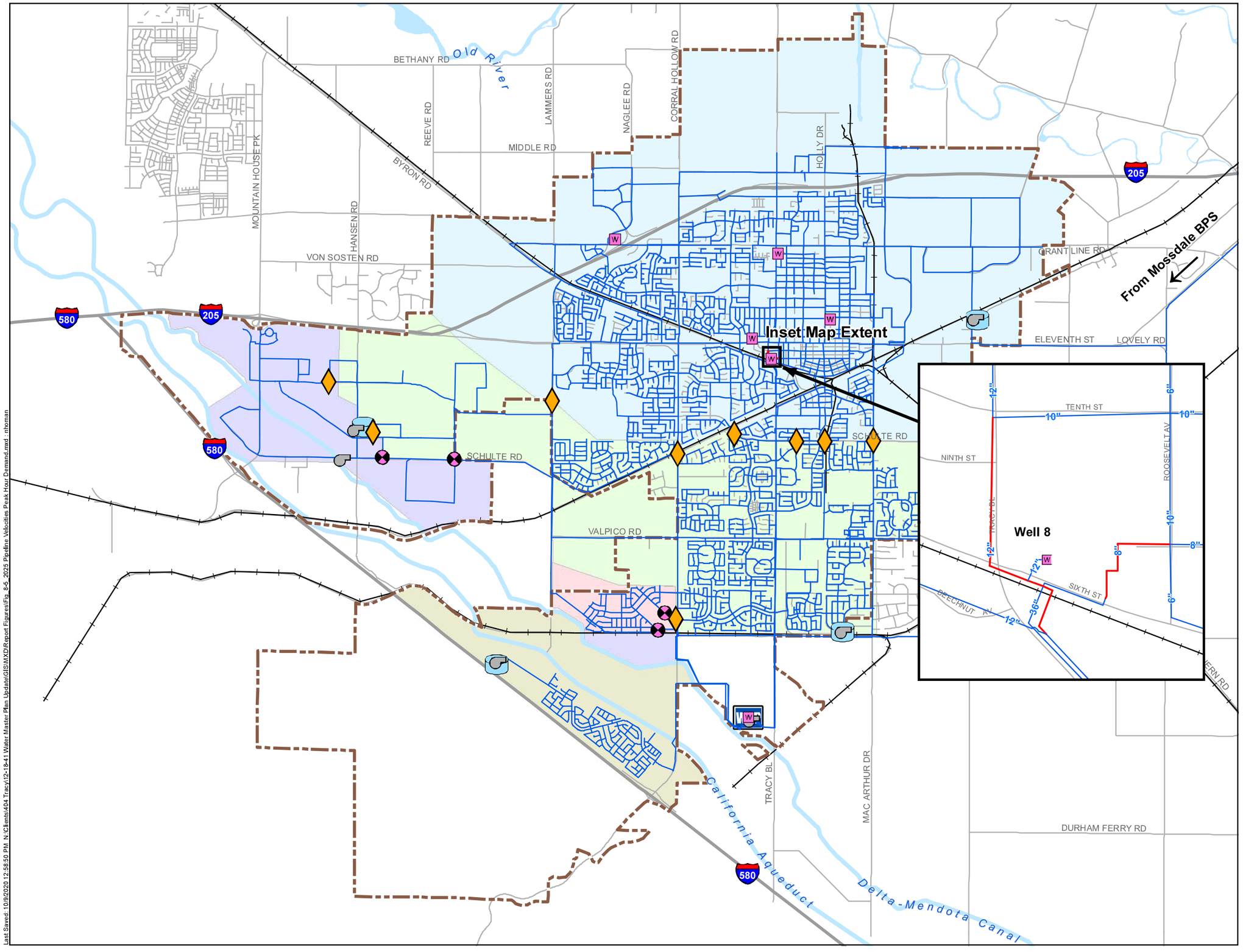
Figure 7-8

Existing System Recommended Improvements

City of Tracy
Water System Master Plan Update



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

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APPENDIX E

Sewer Collection System Hydraulic Capacity Analysis

Technical Memorandum

BLACKWATER CONSULTING ENGINEERS

(SENT VIA: EMAIL)

To: Majeed Mohamed, City of Tracy
Al Gali, City of Tracy

From: Aja Verburg, P.E.
Bao Cha, E.I.T.

Subject: FINAL Tru by Hilton Project
Sewer Collection System Hydraulic Capacity Analysis

Date: February 3, 2023

EXECUTIVE SUMMARY

The purpose of this Technical Memorandum (TM) is to provide an evaluation of the existing City of Tracy (City) sewer system to serve the Tru by Hilton Project (Project). Design criteria from the City's 2012 Wastewater Master Plan (2012 WWMP) was used to determine the sewer flows from the Project based on the proposed land use. This analysis assumes an allowable surcharge in the Corral Hollow of the hydraulic grade line (HGL) of no more than 2 feet above the crown of the pipe and within 2 feet of the lowest manhole rim elevation.

Previous studies show that the Corral Hollow Sewer System does not have the capacity to serve new developments and recommend the following improvement:

- Installation of a new parallel sewer pipeline (Phase 2) along Corral Hollow Road from Fieldview Drive to Parkside Drive to increase the capacity in the Corral Hollow Sewer System

This analysis evaluated the Project's impacts on the City system based on sewer flows generated by planned development for estimated dwelling units to be developed from 2023 to 2025. The analysis results show that there is sufficient existing capacity to accommodate sewer flows from the Project.

INTRODUCTION

This TM has been prepared by Black Water Consulting Engineers, Inc. (Black Water) to present the findings of the sewer collection system hydraulic capacity analysis for the Project. This TM evaluates the capacity of the existing and proposed sewer collection system to serve the Project and identifies impacts to the sewer system and required improvements.

Section 1 provides a general description of the Project, design criteria, and assumptions. Section 2 includes the analyses methodology and analyses results. Section 3 includes identified system deficiencies and recommended improvements.

Engineering reports and documents reviewed and referenced in this TM include the following:

[1] City of Tracy General Plan, Design, Community & Environment, February 2011. (2011 General Plan)
[2] City of Tracy Wastewater Master Plan, prepared by CH2M Hill, December 2012. (2012 WWMP)
[3] City of Tracy Engineering Design & Construction Standards, February 18, 2020.
[4] City of Tracy Wastewater System Analysis for Corral Hollow Road & Lammers Road, prepared by CH2M Hill, updated January 2018. (2018 Wastewater System Analysis Report)
[5] Wastewater Technology Fact Sheet Sewers, Force Main, prepared by US EPA, September 2000.
[6] Tru by Hilton 22393 Corral Hollow Road, prepared by Red Inc. Architects, April 22, 2022.
[7] Tru by Hilton Development Application Review, prepared by Andy Kotecha, May 9, 2022.

SECTION 1 – GENERAL DESCRIPTION

Project Description

The Project is located in Tracy, California, west of Corral Hollow Road and north of Grant Line Road within Assessor Parcel No. 214-020-090. Refer to **Figure 1** for the Project site location. The utility plan for the Project is included in **Appendix A**. The Project site area totals approximately 1.67 gross acres and consists of one (1) 4-story building. The 2011 General Plan designates the Project area as office; however, the proposed development land use is classified as commercial. The Project proposed one (1) connection to the existing 30-inch sewer pipeline in Corral Hollow Road.

Sewer generated from the Project is proposed to flow into the existing sewer trunkline in Corral Hollow Road. The Corral Hollow Sewer System consists of gravity sewer pipelines in Corral Hollow Road. A majority of the sewer from the Corral Hollow Sewer System flows into the Larch Pump Station where sewer flows are pumped to the WWTP.

Figure 1 – Project Location

Background

Planned improvements to the Corral Hollow Sewer System include a new parallel sewer pipeline (Phase 2) along Corral Hollow Road from Fieldview Drive and Parkside Drive based on the Wastewater System Analysis for Corral Hollow Road and Lammers Road TM prepared by CH2M in September 2017. This planned improvement will increase the capacity in the Corral Hollow Sewer System to delay the construction of the new Lammers Sewer System. The City is currently in the design phase for the Phase 2 project and it is not anticipated that the project will be constructed until the end the year 2025.

The City's staff has requested additional sewer analyses to determine if smaller projects can connect to the Corral Hollow Sewer System at an earlier date without impacting the existing sewer system. Since a majority of larger projects plan to construct homes within the next few years, this will delay the improvements that are needed for the Corral Hollow Sewer System. The analysis evaluated the system capacity based on the number of dwelling units estimated to be constructed from 2023 to 2025 without the Phase 2 parallel pipeline.

Estimated Project Sewer Flows

The ADWF for the Project was calculated based on the wastewater generation factors adopted in the 2012 WWMP. The total ADWF for the Project is approximately 1,904 gallons per day (gpd) based on a wastewater generation factor of 1,140 gpd/gross acre for the commercial land use designation. **Table 1** presents the estimated Project ADWF.

Table 1 - Estimated Project ADWF

Land Use Designation	Assessor Parcel Number	Gross Acreage, Acres	Generation Factor, gpd/gross acre	ADWF, gpd
Commercial	214-020-090	1.67	1,140	1,904

PWWF includes the peak dry weather flow (PDWF) and the rainfall induced inflow/infiltration. The total estimated PWWF is 6,494 gpd. **Table 2** provides the values for parameters used to estimate the PWWF.

Table 2 - Estimated Project PWWF

Parameter	Value
Peaking Factor	3.00
Gross Acreage, acres	1.67
PDWF[1], gpd	5,711
Infiltration[2], gpd	114
Inflow[3], gpd	668
PWWF[4], gpd	6,494

[1]PDWF is equal to ADWF multiply by the Peaking Factor
[2]Infiltration is equal to six (6) percent of the ADWF
[3]Inflow is equal to the gross acreage multiply by 400 gal/ac-day
[4]PWWF is equal to the summation of the PDWF, infiltration, and inflow

Existing Peak Flows

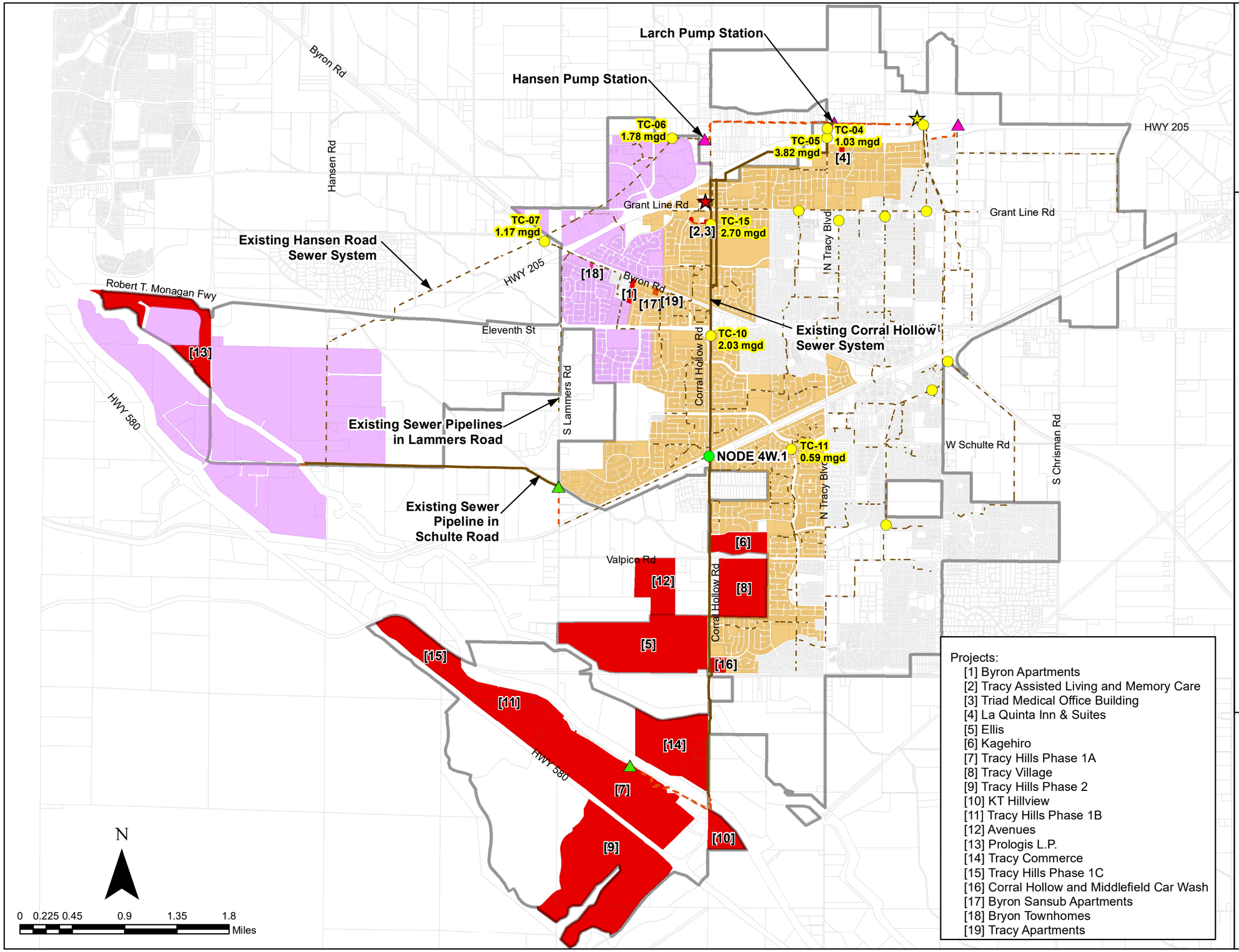
Existing peak flows contributing to the collection system and used in the hydraulic model evaluation are based on data collected in July 2020 from the City's flow monitoring program. **Table 3** summarizes the measured average dry weather flows (ADWFs) and the peak flows in the existing sewer collection system serving the Project. **Figure 2** shows the temporary flow monitoring locations along the Corral Hollow Sewer System and the Hansen Road Sewer System.

Table 3 - Flow Monitoring Data along Corral Hollow Sewer System and Hansen Road Sewer System

Site ID	Location	Pipeline Diameter (inch)	Measured ADWF[1] (mgd)	Measured Peak Flow[1] (mgd)
TC-04	Located at the intersection of N. Tracy Blvd & Interstate 205	15	0.60	1.03
TC-05	Located at the intersection of N Tracy Blvd & Interstate 205	24	2.36	3.82
TC-06	Located near West Valley Mall north of Auto Plaza Dr	30	1.32	1.78
TC-07	Located at the intersection of Byron Rd & Von Sosten Rd	21	0.28	1.17
TC-10	Located in Corral Hollow Rd between Eleventh St and Krohn Rd	24	1.14	2.03
TC-11	Located at the intersection of Sienna Park Dr & Sycamore Pkwy	15	0.34	0.59
TC-15	Located at the intersection of N Corral Hollow Rd & Alegre Dr	21	1.55	2.70

[1]City of Tracy Sewer Flow Monitoring Study, prepared by V&A Consulting Engineers, July 2020

This analysis includes existing peak wet weather flow (PWWF) based on the sewer flow monitoring study data. and calculated PWWF from planned development projects. Refer to **Figure 2** for the locations of the listed developments. Per the City's policy, evaluation of the existing sewer infrastructure to serve projects and allocation of capacity is based on the approval date of the project. Once a project is approved, the capacity is allocated to that project. Approved projects included in this sewer capacity analysis and the order capacity are allocated based on approved tentative map dates provided by the City. For the purposes of CEQA/engineering evaluation, the order of the analysis defaults to the City's planning application submission date.



Projects:
- [1] Byron Apartments
- [2] Tracy Assisted Living and Memory Care
- [3] Triad Medical Office Building
- [4] La Quinta Inn & Suites
- [5] Ellis
- [6] Kagehiro
- [7] Tracy Hills Phase 1A
- [8] Tracy Village
- [9] Tracy Hills Phase 2
- [10] KT Hillview
- [11] Tracy Hills Phase 1B
- [12] Avenues
- [13] Prologis L.P.
- [14] Tracy Commerce
- [15] Tracy Hills Phase 1C
- [16] Corral Hollow and Middlefield Car Wash
- [17] Byron Sansub Apartments
- [18] Bryon Townhomes
- [19] Tracy Apartments

TRACY

LEGEND

- Tracy City Limits
- Wastewater Treatment Plant
- City's Pump Station
- Private Pump Station
- Gravity Sewer Pipeline Serving 82-Lot Subdivision Project
- Existing Sewer Force Main
- Existing Sewer Pipeline
- Existing Contributing Area of Sewer Flow to Corral Hollow Sewer System
- Existing Contributing Area of Sewer Flow to Hansen Sewer System
- Proposed Sewer going into the Larch Pump Station
- 2012 WWMP Node #
- Flow Meter
- TC-# Flow Meter ID
- mgd Estimated PWWF, mgd
- Tru by Hilton (Project)

Figure 2

SEWER CAPACITY ANALYSIS

Projects included in Analysis

BLACKWATER CONSULTING ENGINEERS

Estimated PWWFs from 2023 to 2025

Per direction from the City's staff, the sewer analysis was evaluated based on the number of dwelling units estimated to be constructed from 2023 to 2025 without the Phase 2 parallel pipeline. This will allow smaller projects to connect to the City's sewer system at an earlier date prior to construction completion of the Phase 2 project. **Table 4** shows the number of dwelling units estimated to be constructed for approved development projects. **Table 5** shows the PWWF for each development from 2023 to 2025.

Table 4 – Estimated Number of Dwelling Units from 2023 to 2025

Parameter	Number of Dwelling Units[c]				
	2023	2024	2025	Future	Total
Corral Hollow Sewer System					
Existing Flows	-	-	-	-	-
Projects					
Byron Apartments[a]	30	0	0	0	30
Tracy Assisted Living and Memory Care	143	0	0	0	143
Triad Medical Office Building	-	-	-	-	-
Building Permits					
Ellis	991	0	0	0	991
Kagehiro	126	0	0	0	126
Tracy Hills Phase 1A	1,206	0	0	0	1,206
Others	168	0	0	0	168
Tracy Village	44	99	192	255	590
Tracy Hills Phase 2	0	164	175	1,178	1,517
KT Hillview	40	37	39	98	214
Tracy Hills Phase 1B	174	206	216	0	596
Avenues	0	0	160	320	480
Tracy Commerce	-	-	-	-	-
Tracy Hills Phase 1C	0	0	0	351	351
Corral Hollow and Middlefield Car Wash	-	-	-	-	-
Tru by Hilton	-	-	-	-	-
Subtotal	2,922	506	782	2,202	6,412
Hansen Road and Lammers Sewer Systems					
Existing Flows	-	-	-	-	-
Projects					
Reserved Capacity					
Prologis L.P. [b]	-	-	-	-	-
Byron Apartments[a]	30	0	0	0	30
Byron Sansub Apartments	9	0	0	0	9
Byron Townhomes	6	0	0	0	6
Tracy Apartments	12	0	0	0	12
Subtotal	57	0	0	0	57
Tracy Boulevard Sewer Pipeline					
Existing Flows	-	-	-	-	-
Projects					
La Quinta Inn & Suites	-	-	-	-	-
Subtotal	0	0	0	0	0
Total	2,979	506	782	2,202	6,469

[a]The Byron Apartments utility plan prepared by Schack & Company, Inc. received on April 3, 2019, shows one connection to the existing 8-inch sewer pipeline in Byron Road that flows west to the Hansen Sewer System and one connection to the existing 8-inch sewer pipeline in Remy Javier Street that flows east to the Corral Hollow Sewer System.

[b]The Agreement between the City and the Prologis L.P. has permitted Prologis to use the Hansen Road Sewer System and the Hansen Pump Station to accommodate up to 0.145 mgd based on the ADWF. Based on the ADWF, a peak flow of 0.495 mgd was estimated for the Prologis L.P. development project.

[c]Dwelling units based on vesting tentative maps, utility plans, and technical memorandums.

Table 5 – Estimated PWWF of the Projects from 2023 to 2025

Parameter	Estimated PWWF[c]					
	Current	2023	2024	2025	Future	Total
Corral Hollow Sewer System						
Existing Flows	3.816	-	-	-	-	3.816
Projects						
Byron Apartments[a]	-	0.021	-	-	-	0.021
Tracy Assisted Living and Memory Care	-	0.074	-	-	-	0.074
Triad Medical Office Building	-	0.001	-	-	-	0.001
Building Permits						
Ellis	-	0.896	-	-	-	0.896
Kagehiro	-	0.118	-	-	-	0.118
Tracy Hills Phase 1A	-	0.942	-	-	-	0.942
Others	-	0.155	-	-	-	0.155
Tracy Village	-	0.027	0.061	0.118	0.157	0.364
Tracy Hills Phase 2	-	-	0.118	0.126	0.846	1.090
KT Hillview	-	0.031	0.029	0.030	0.076	0.166
Tracy Hills Phase 1B	-	0.120	0.142	0.149	-	0.410
Avenues	-	-	-	0.116	0.231	0.347
Tracy Commerce	-	-	-	-	0.509	0.509
Tracy Hills Phase 1C	-	-	-	-	0.220	0.220
Corral Hollow and Middlefield Car Wash	-	0.005	-	-	-	0.005
Tru by Hilton	-	0.006	-	-	-	0.006
Subtotal	3.816	2.396	0.349	0.539	2.040	9.140
Hansen Road and Lammers Sewer Systems						
Existing Flows	1.777	-	-	-	-	1.777
Projects						
Reserved Capacity						
Prologis L.P. [b]	-	0.495	-	-	-	0.495
Byron Apartments[a]	-	0.021	-	-	-	0.021
Byron Sansub Apartments	-	0.007	-	-	-	0.007
Byron Townhomes	-	0.006	-	-	-	0.006
Tracy Apartments	-	0.008	-	-	-	0.008
Subtotal	1.777	0.536	0.000	0.000	0.000	2.313
Tracy Boulevard Sewer Pipeline						
Existing Flows	1.029	-	-	-	-	1.029
Projects						
La Quinta Inn & Suites	-	0.007	-	-	-	0.007
Subtotal	1.029	0.007	0.000	0.000	0.000	1.036
Total	6.622	2.940	0.349	0.539	2.040	12.490

[a]The Byron Apartments utility plan prepared by Schack & Company, Inc. received on April 3, 2019, shows one connection to the existing 8-inch sewer pipeline in Byron Road that flows west to the Hansen Sewer System and one connection to the existing 8-inch sewer pipeline in Remy Javier Street that flows east to the Corral Hollow Sewer System.

[b]The Agreement between the City and the Prologis L.P. has permitted Prologis to use the Hansen Road Sewer System and the Hansen Pump Station to accommodate up to 0.145 mgd based on the ADWF. Based on the ADWF, a peak flow of 0.495 mgd was estimated for the Prologis L.P. development project.

[c]Estimated PWWF is based on the number of dwelling units the developer plans to construct per year.

Design Criteria

Sewer system performance design criteria and analysis requirements for new development are summarized in **Table 6**.

Table 6 - Design Criteria and Requirements [3]

Component	Criteria
Friction Factor "n"	0.013
Sewer Pipeline	
Maximum Velocity	10.0 fps
Maximum Surcharge d/D Ratio[1]	Assumes an allowable surcharge in the Corral Hollow Sewer System of the HGL of no more than 2 feet above the crown of the pipe and within 2 feet of the lowest manhole rim elevation.
Minimum Diameter	8-inch
Available Slope	Obtain the minimum velocity of 2 fps
Material	Vitrified Clay Pipe (VCP) and Ductile Iron Pipe (DIP)
Service Lateral Sizing	
Single-Family Residences	4-inch
Commercial	6-inch
Duplex and Multi-Family Lots	6-inch
Minimum Slope	2%
Sewer Manhole Maximum Spacing	
Diameter 12-inch and under	400 feet
Diameter 15-inch and over	600 feet
Existing Force Main[2]	
Minimum Velocity	2 fps
Maximum Velocity	8 fps

[1]Per discussion with City' staff, the City allows surcharge in the sewer system.
[2]Force mains from lift station are typically designed for velocities between 2 to 8 fps [5].

SECTION 2 –HYDRAULIC CAPACITY ANALYSIS EVALUATION AND RESULTS

The sewer system serving the proposed Project was modeled using GIS integrated Innovyze InfoSWMM software. Although most of the collection system within the City is included in the GIS database, the modeling focused on the major trunk sewers within the system serving the Project. The software uses St. Venant Equations to determine the pipe flow in a gravity main.

The modeling software uses the upstream and downstream invert elevation, pipe diameter, and sewer flow data to calculate slope, d/D, and the velocity in the pipes. The software also uses rim elevation, invert elevation, manhole diameter, and sewer flow data to calculate the liquid level in a manhole.

Modeling Results

Existing Corral Hollow Sewer System Analysis

The model results indicate that the existing Corral Hollow Sewer System has capacity to serve the Project based on the estimated PWWFs in 2023 and 2024.

Figures 3, 4, and **5** present the hydraulic capacity analysis results of the existing Corral Hollow Sewer System for 2023, 2024, and 2025, respectively. **Appendix B** includes the model output data for the modeling analysis of the existing Corral Hollow Sewer System.

Existing Corral Hollow Sewer System with Planned Improvements Analysis

The model results indicate that the existing Corral Hollow Sewer System has capacity to serve the Project with the Phase 2 parallel pipeline improvement. **Figure 6** presents the hydraulic capacity analysis results of the Corral Hollow Sewer System with planned improvements. **Appendix B** includes the model output data for the modeling analysis of the Corral Hollow Sewer System with planned improvements.

Existing Force Mains Analysis

Sewer from the Larch Pump Station is pumped to the WWTP through an existing parallel 18-inch and 24-inch force mains. It is assumed that the 24-inch force main is in use. Refer to **Table 7** for a summary of the velocity estimated for the 24-inch force main.

Table 7 - Estimated Force Main Velocity from Larch Pump Station to the WWTP

Force Main Size (inch)	Total PWWF (mgd)	Total PWWF (cfs)	Area (ft^2)	Velocity[1] (fps)
18	0.00	0.00	1.77	0.00
24	12.49	19.33	3.14	6.15

[1]Velocity is equal to the PWWF divided by the area.

Force mains with a velocity greater than 8 fps were identified as deficient. The existing 24-inch force main from the Larch Pump Station to the WWTP has capacity to serve the Project.

Figure 3 – HGL Profile of the Existing Corral Hollow Sewer System Results for 2023

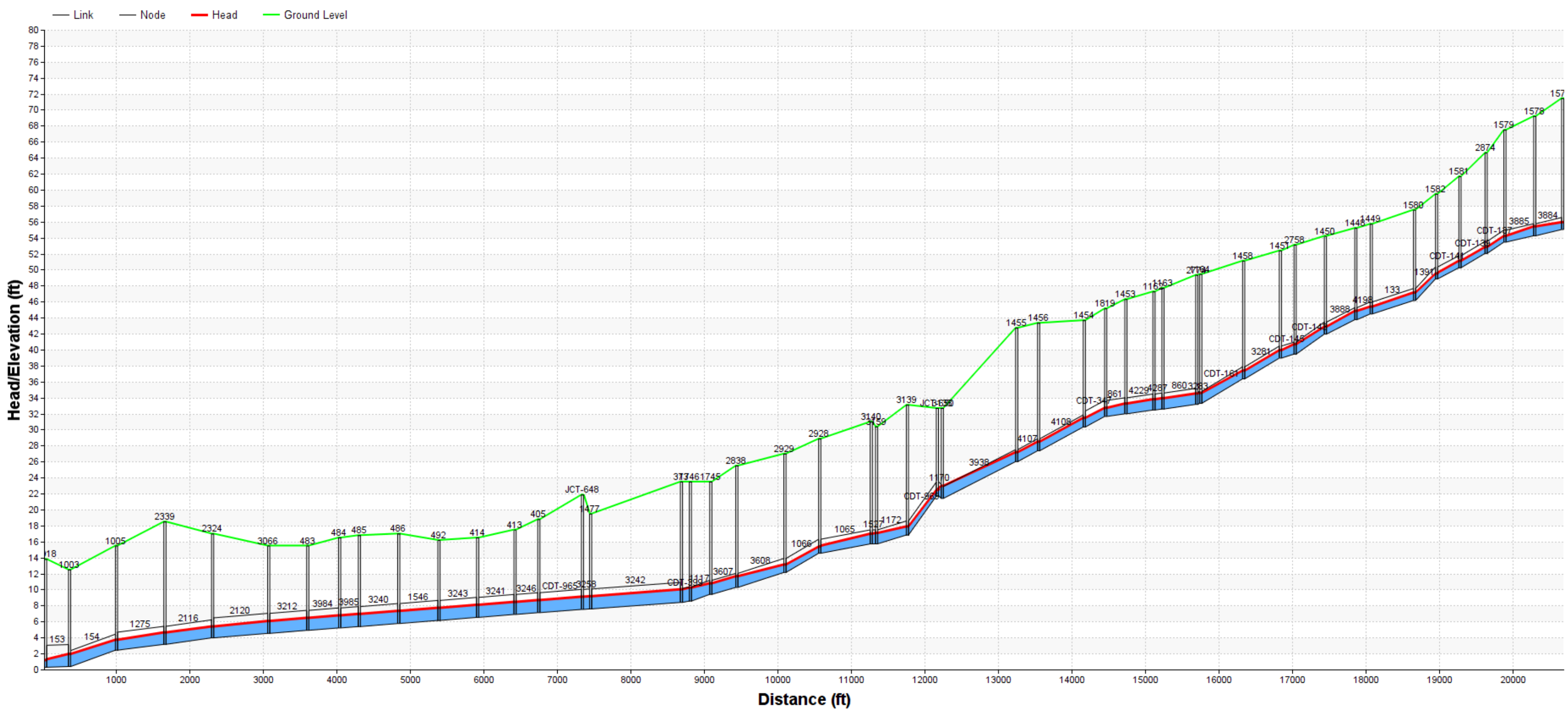


Figure 4 – HGL Profile of the Existing Corral Hollow Sewer System Results for 2024

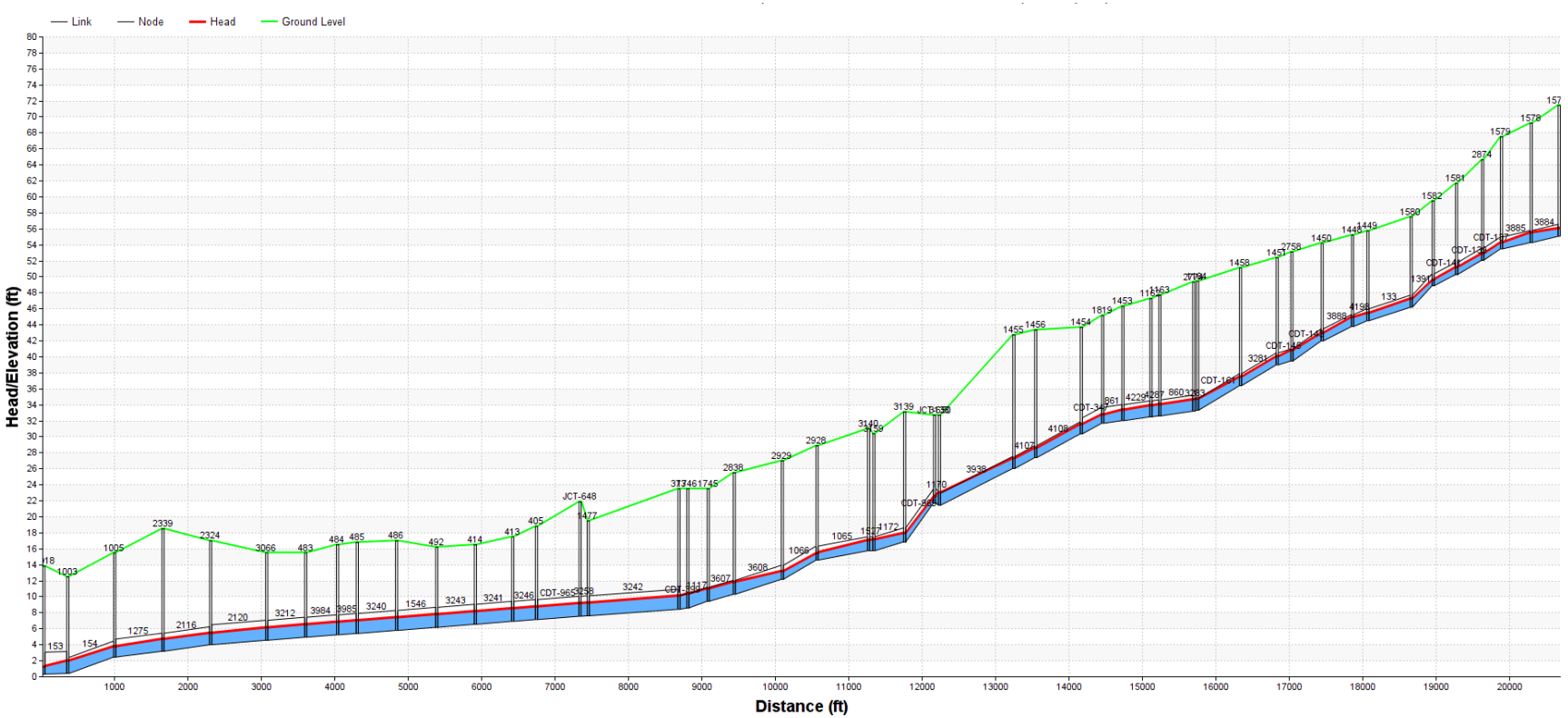


Figure 5 – HGL Profile of the Existing Corral Hollow Sewer System Results for 2025

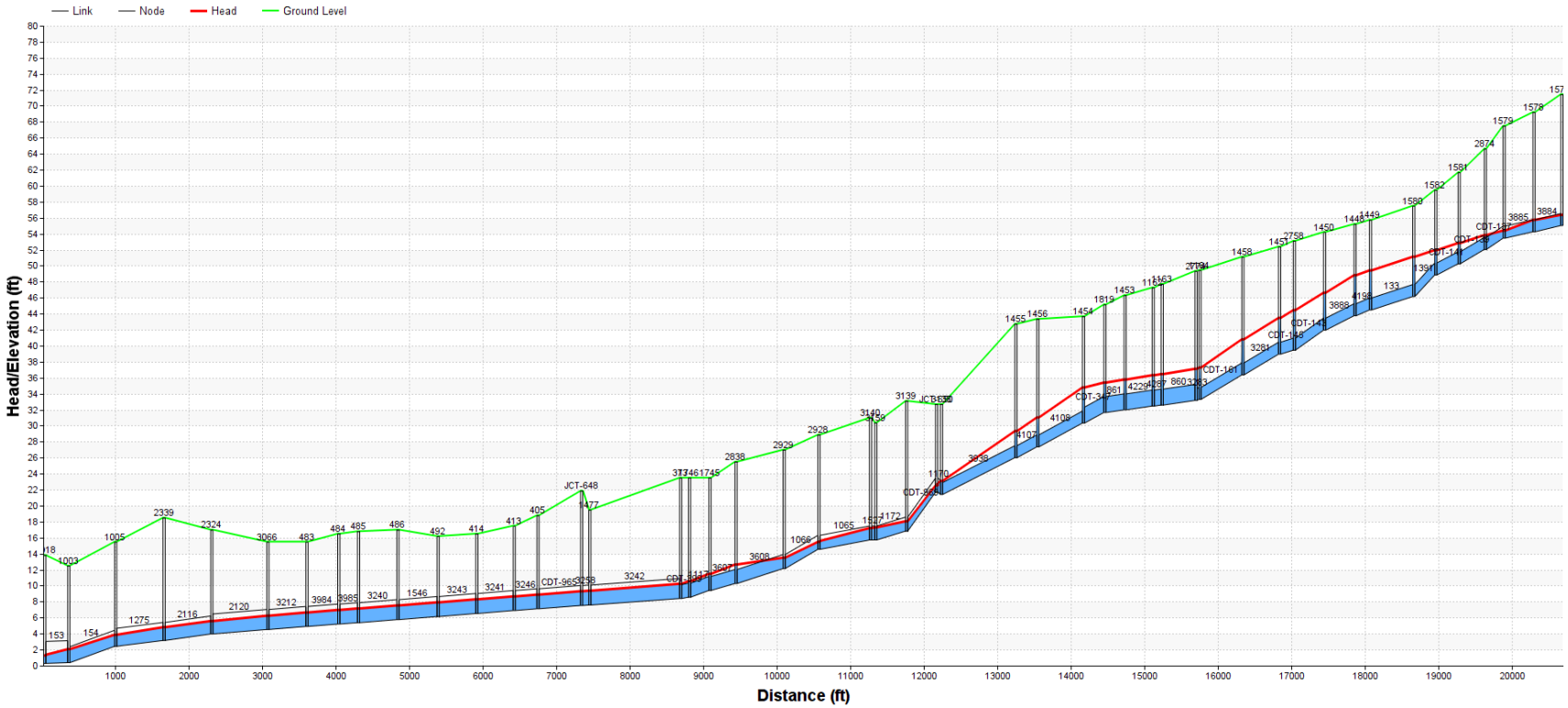
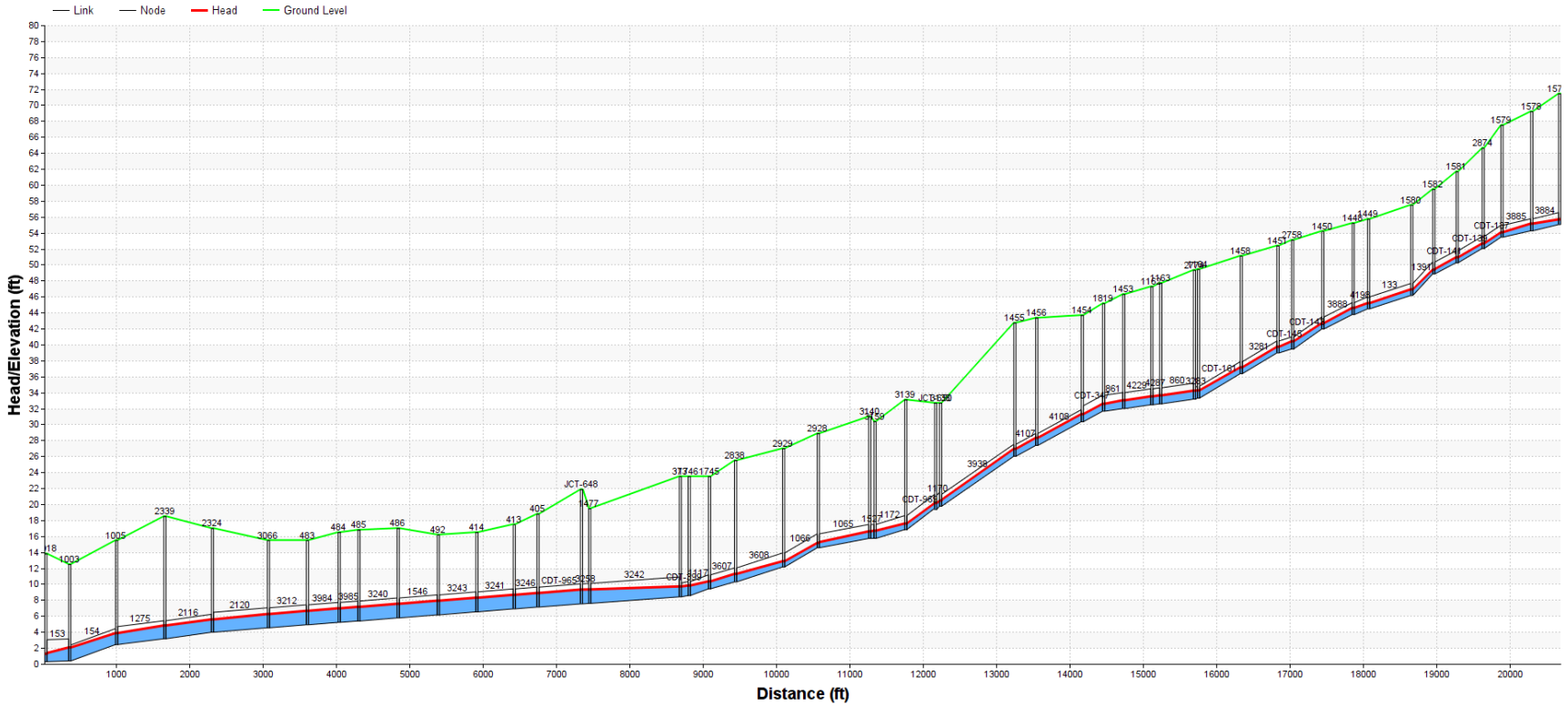


Figure 6 – HGL Profile of the Existing Corral Hollow Sewer System with the Phase 2 Parallel Pipeline Improvement



SECTION 3 – SYSTEM DEFICIENCIES AND RECOMMENDED IMPROVEMENTS

Based on the evaluation, the existing Corral Hollow Sewer System and the Larch Pump Station have the capacity to serve the Project. No additional off-site improvements are required to serve the Project.

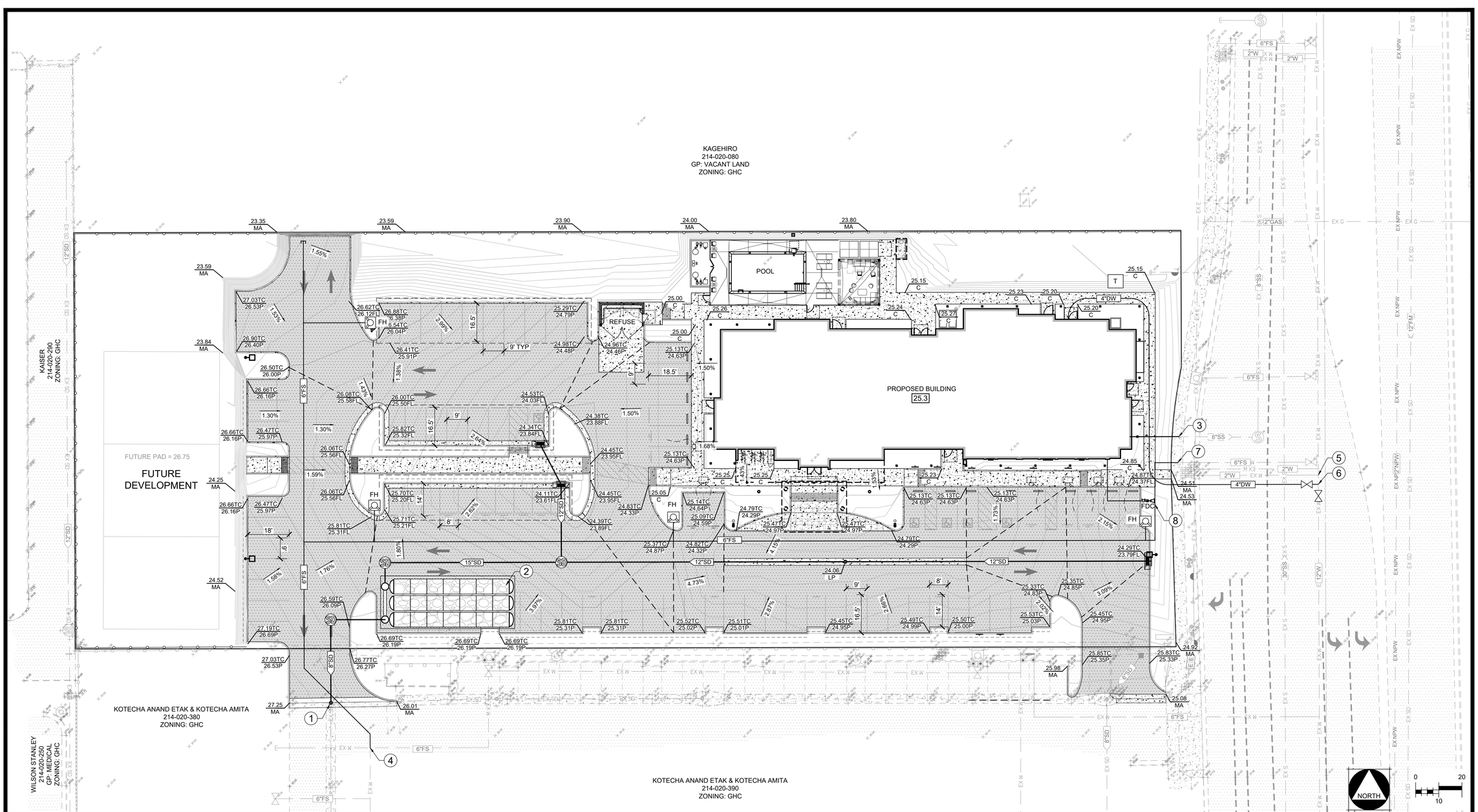
Black Water has reviewed the utility plan and sewer documents for the Project. Preliminary review indicates the utility plan meets City requirements for on-site sewer improvements.

Evaluation of the City's existing WWTP capacity to serve the Project is not included in the scope of the TM. The Project proponent should consult with the City Utilities Department for evaluation of the WWTP's capacity to serve the Project.

Any changes or modifications to the Project, sewer system layout, or development of the Project inconsistent with assumptions made in this analysis will require additional evaluation.

APPENDIX A

UTILITY PLAN
FOR TRU BY HILTON



GENERAL INFORMATION

1. OWNER: RAAD HOSPITALITY GROUP, 2025 W GRANT LINE ROAD, TRACY, CA 95377
2. APPLICANT: ANAND KOTECHA, RAAD HOSPITALITY GROUP, 103 E LOUISE AVE, LATHROP CA 95330
3. ENGINEER: MCR ENGINEERING, 1242 DUPONT COURT, MANTECA, CA 95336
4. EXISTING GENERAL PLAN: OFFICE
5. EXISTING ZONING: GHC (GENERAL HIGHWAY COMMERCIAL)
6. PROPOSED GENERAL PLAN: OFFICE
7. PROPOSED ZONING: GHC (GENERAL HIGHWAY COMMERCIAL)
8. UTILITIES: WATER: CITY OF TRACY; SEWER: CITY OF TRACY; STORM: CITY OF TRACY
9. APN: 214-020-090
10. 4 STORY HOTEL ON 1.97 ±ACRES
11. THE PROPERTY HAS GENTLE SLOPE WITH ELEVATIONS RANGING FROM 24'-27'
12. BOUNDARY LINES ARE BASED ON RECORD INFORMATION AND TOPOGRAPHIC SURVEY.
13. ANY EXISTING WELLS AND/OR SEPTIC SYSTEMS ON SITE SHALL BE ABANDONED PER SAN JOAQUIN COUNTY STANDARD
14. 10' PUBLIC UTILITY EASEMENTS SHALL BE DEDICATED ALONG ALL STREET FRONTAGE.
15. UTILITIES TO LOCATED WITHIN PUBLIC UTILITY EASEMENTS AND SHALL BE MAINTAINED BY GOVERNING AGENCIES.
16. ALL ADJACENT OVERHEAD POWER LINES AND/OR UTILITY LINES SHALL BE UNDERGROUND.

LEGEND

1. DRAINAGE DIRECTION
2. PROPOSED STORM DRAIN — SD
3. PROPOSED STORM DRAIN MAINTENANCE HOLE — SMH
4. PROPOSED STORM DRAIN INLET
5. DRAINAGE MANAGEMENT AREA
6. PROPOSED SEWER — SS
7. PROPOSED WATER — W

UTILITY KEY NOTES:

1. CONNECT TO EX. 8" HDPE @ 22.48 INV.
2. PROPOSED ADS UNDERGROUND CHAMBER
3. CONNECT TO EX. 6" SS
4. CONNECT TO EX. 6" FIRE SERVICE
5. ABANDONED EX. 2" DOMESTIC WATER SERVICE
6. INSTALL 4" DOMESTIC WATER SERVICE WITH METER
7. CONNECT TO EX. 6" FIRE SERVICE AND INSTALL BACKFLOW PREVENTION DEVICE
8. INSTALL PIV & FDC

MCR ENGINEERING
www.mcreng.com
1242 DUPONT COURT
MANTECA, CA 95336
TEL : (209) 239 - 6229
FAX : (209) 239 - 8839

REGISTERED PROFESSIONAL ENGINEER — RAY EAVENSON — No. C54088 EXP. 12-31-23 — CIVIL — STATE OF CALIFORNIA

FOR PRELIMINARY REVIEW ONLY — NOT FOR CONSTRUCTION

APPROVED:

PLAN REVISIONS

NO.	DESCRIPTIONS	DATE
1		
2		
3		
4		
5		
6		
7		

PRELIMINARY GRADING, DRAINAGE AND UTILITY PLAN FOR:

TRU BY HILTON

D22-0018

22393 CORRAL HOLLOW ROAD

TRACY, CALIFORNIA

811 Know what's below. Call before you dig. 811 / 800-227-2600

JOB NO.:	21-119
DATE:	JULY, 2022
SCALE:	AS SHOWN
DR. BY:	RBP
CK. BY:	SLS

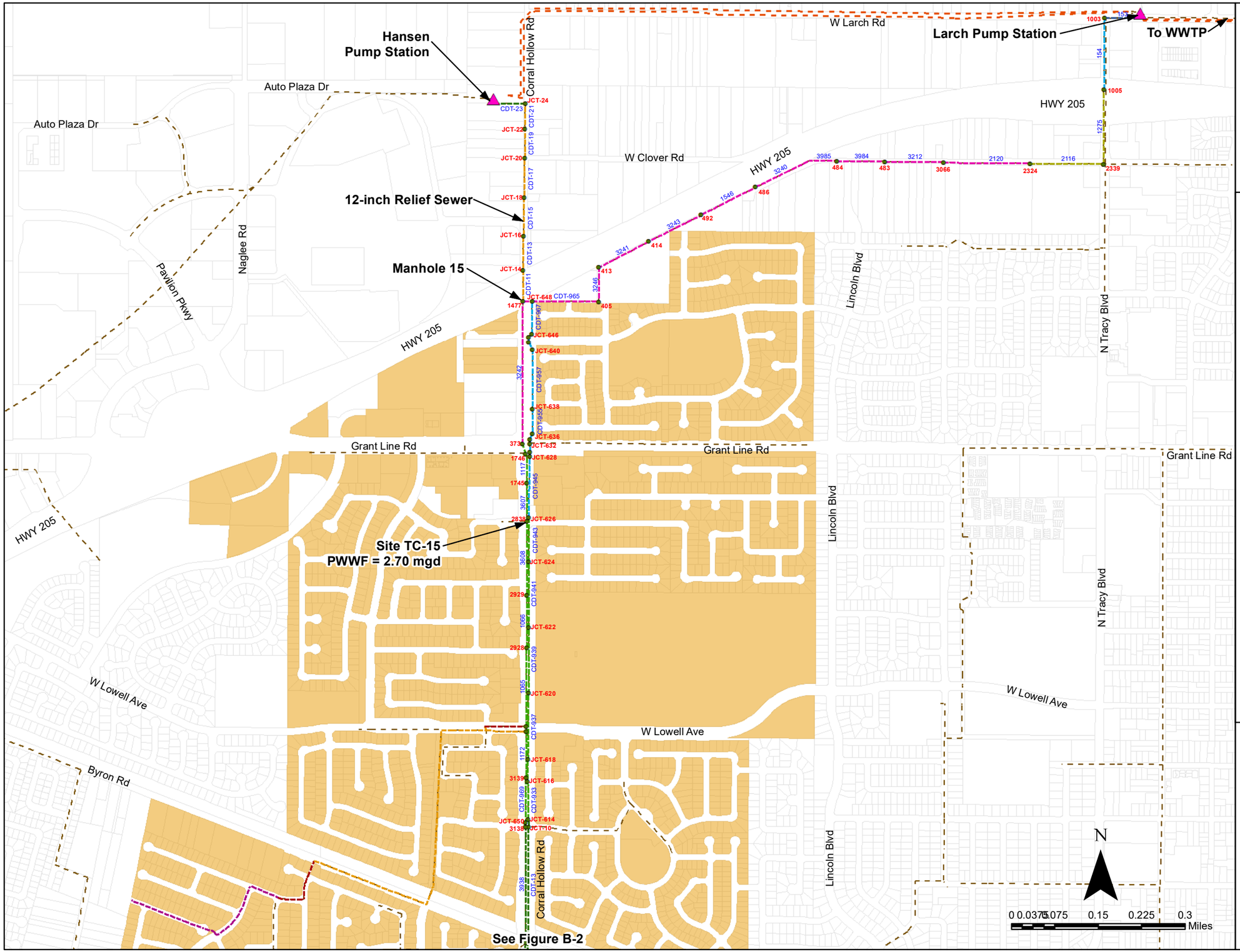
SHEET NO.

C1

OF 1 SHEET

APPENDIX B

DATA OUTPUT
FLOW DATA



TRACY

LEGEND

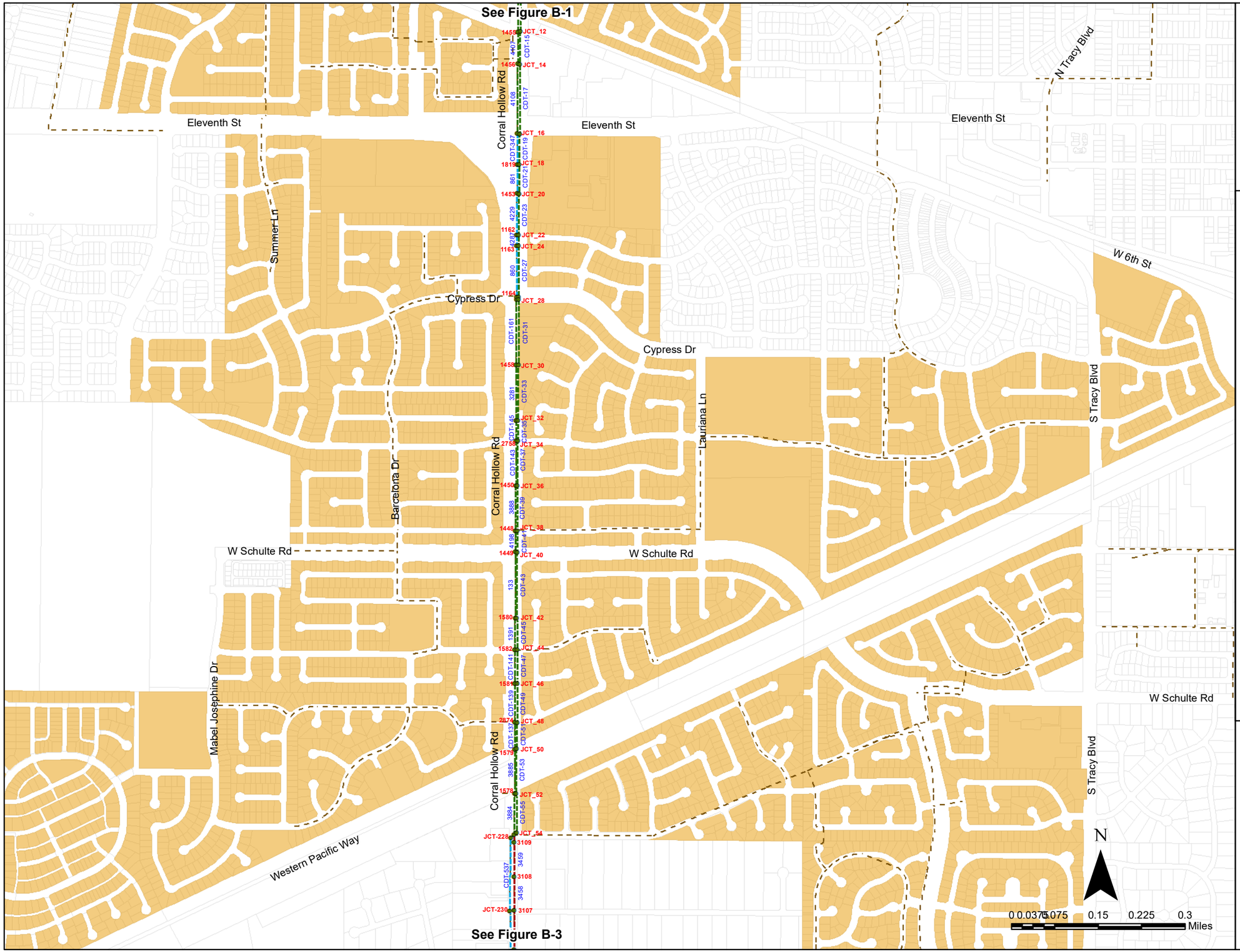
- Pump Station
- Sewer Manhole
- 8 - inch Sewer Pipeline
- 10 - inch Sewer Pipeline
- 12 - inch Sewer Pipeline
- 18 - inch Sewer Pipeline
- 21 - inch Sewer Pipeline
- 24 - inch Sewer Pipeline
- 27 - inch Sewer Pipeline
- 30 - inch Sewer Pipeline
- 33 - inch Sewer Pipeline
- Existing Sewer Force Main
- Existing Sewer Pipeline
- Existing Contributing Area of Sewer Flows to Larch Pump Station
- # Junction ID
- # Pipe ID

Figure B-1

SEWER CAPACITY ANALYSIS RESULTS

Corral Hollow Sewer System

BLACKWATER CONSULTING ENGINEERS



TRACY

LEGEND

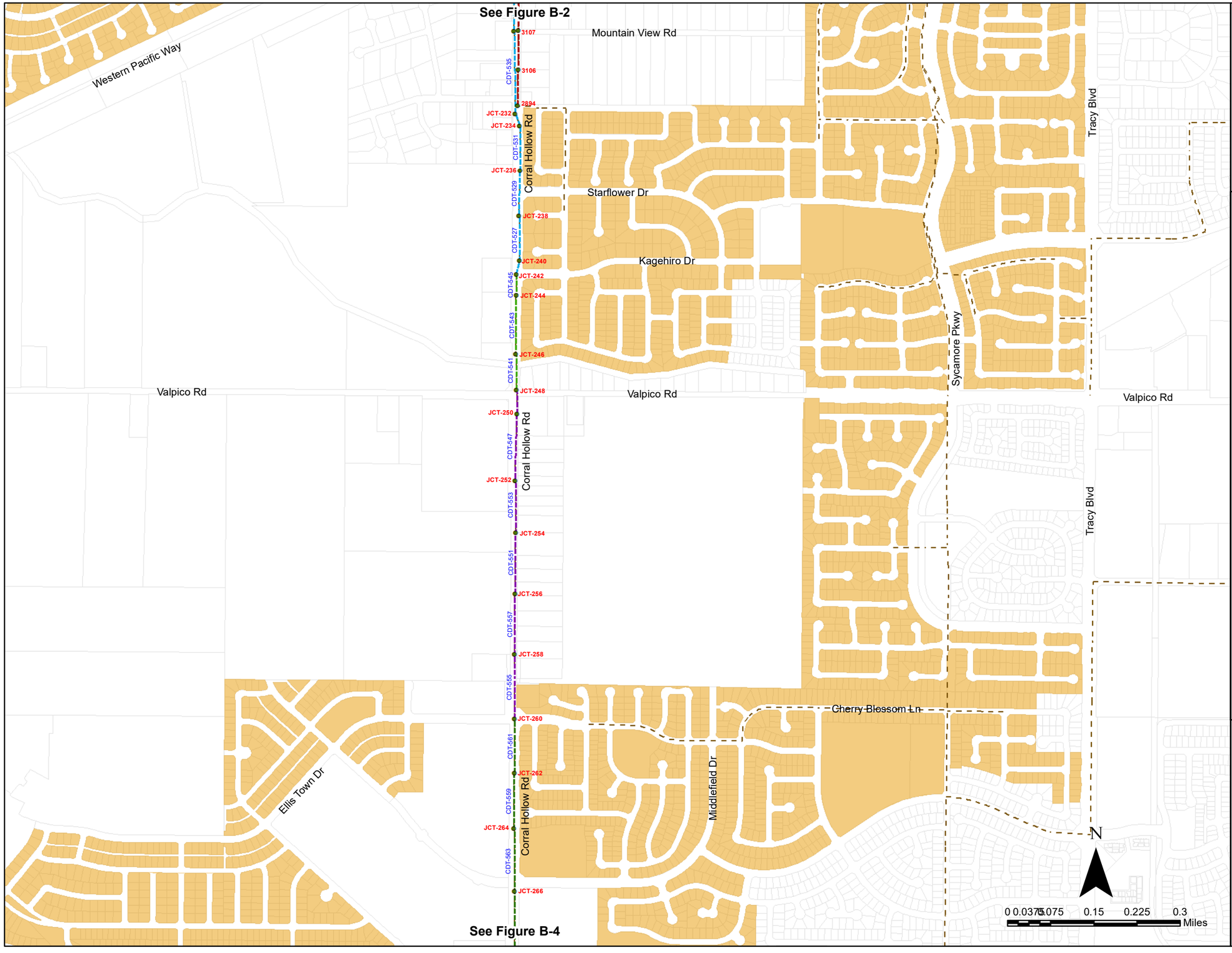
- Sewer Manhole
- 10 - inch Sewer Pipeline
- 18 - inch Sewer Pipeline
- 24 - inch Sewer Pipeline
- Existing Sewer Pipeline
- Existing Contributing Area of Sewer Flows to Larch Pump Station
- # Junction ID
- # Pipe ID

Figure B-2

SEWER CAPACITY ANALYSIS RESULTS

Corral Hollow Sewer System

BLACKWATER CONSULTING ENGINEERS



TRACY

LEGEND

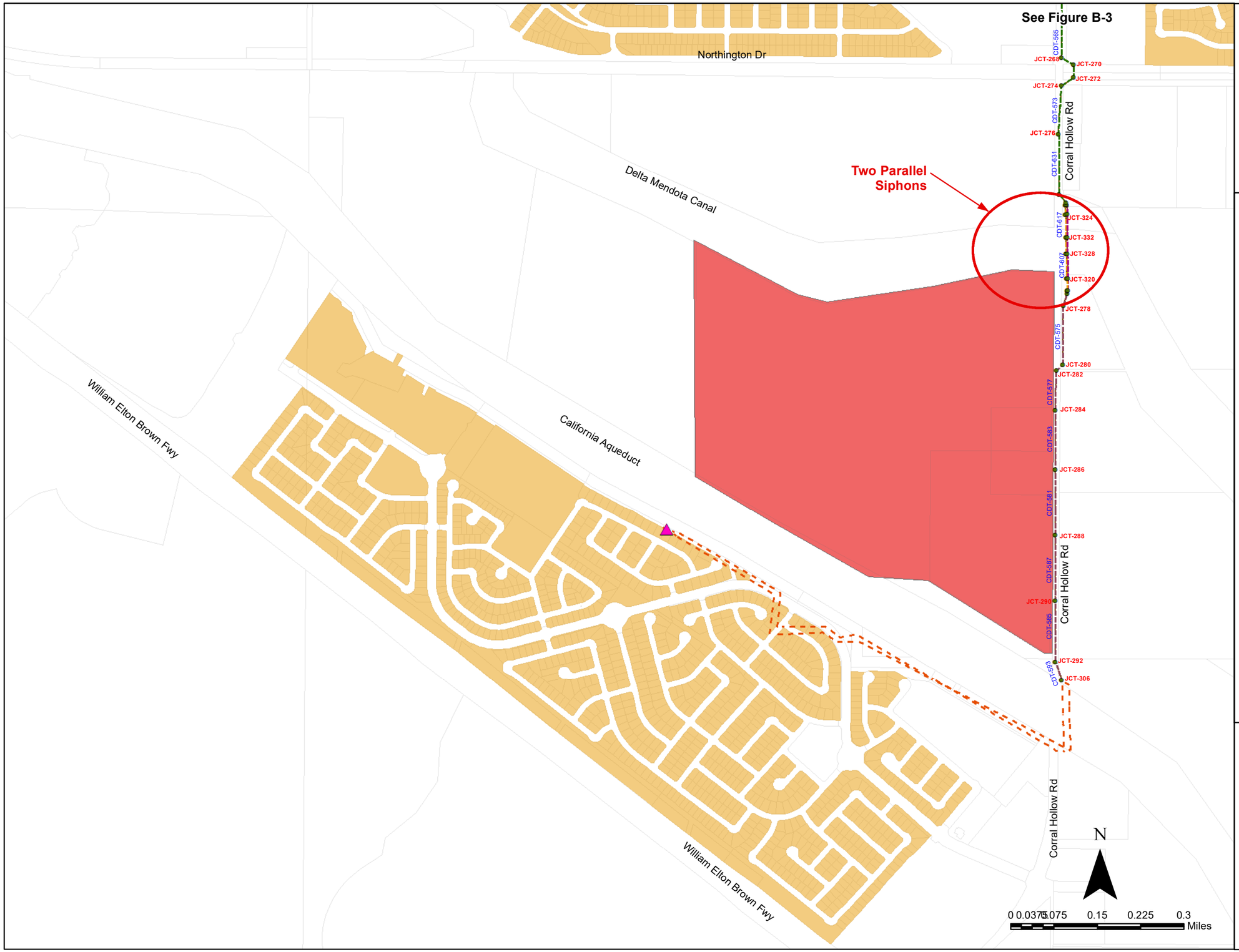
- Sewer Manhole
- 10 - inch Sewer Pipeline
- 18 - inch Sewer Pipeline
- 20 - inch Sewer Pipeline
- 21 - inch Sewer Pipeline
- 24 - inch Sewer Pipeline
- Existing Sewer Pipeline
- Existing Contributing Area of Sewer Flows to Larch Pump Station
- # Junction ID
- # Pipe ID

Figure B-3

SEWER CAPACITY ANALYSIS RESULTS

Corral Hollow Sewer System

BLACKWATER CONSULTING ENGINEERS



LEGEND

- Pump Station
- Sewer Manhole
- 8 - inch Sewer Pipeline
- 12 - inch Sewer Pipeline
- 15 - inch Sewer Pipeline
- 18 - inch Sewer Pipeline
- Existing Sewer Force Main
- Existing Sewer Pipeline
- Tracy Hills Commerce (Proposed Project)
- Existing Contributing Area of Sewer Flows to Larch Pump Station
- # Junction ID
- # Pipe ID

Figure B-4

SEWER CAPACITY ANALYSIS RESULTS

Corral Hollow Sewer System

BLACKWATER CONSULTING ENGINEERS

Corral Hollow Sewer System - Manhole Report (2023)

ID	Invert Elevation (ft)	Rim Elevation (ft)	Depth (ft)	Head (ft)	Head Class	Pressure (psi)	Volume (ft3)	Lateral Inflow (mgd)	Total Inflow (mgd)	Flooding (mgd)
1003	0.42	12.5	1.581	2.001	Below Link Crown	0.685	0	0	6.212	0
1005	2.47	15.5	1.304	3.774	Below Link Crown	0.565	0	1.114	6.212	0
1162	32.505	47.28	1.351	33.856	Below Link Crown	0.585	0	0	2.888	0
1163	32.63	47.73	1.356	33.986	Below Link Crown	0.588	0	0	2.888	0
1164	33.343	49.461	1.309	34.652	Below Link Crown	0.567	0	0	2.888	0
1448	43.8	55.225	1.105	44.905	Below Link Crown	0.479	0	0	2.887	0
1449	44.52	55.741	0.923	45.443	Below Link Crown	0.4	0	0.155	2.886	0
1450	42	54.232	0.937	42.937	Below Link Crown	0.406	0	0	2.887	0
1451	39	52.401	0.994	39.994	Below Link Crown	0.431	0	0	2.888	0
1453	32.031	46.322	1.291	33.322	Below Link Crown	0.559	0	0	2.887	0
1454	30.383	43.686	1.146	31.529	Below Link Crown	0.497	0	0	4.323	0
1455	26.053	42.735	1.185	27.238	Below Link Crown	0.513	0	0	4.323	0
1456	27.406	43.357	1.146	28.552	Below Link Crown	0.497	0	0	4.323	0
1458	36.402	51.127	1.036	37.438	Below Link Crown	0.449	0	0	2.888	0
1477	7.63	19.5	1.592	9.222	Below Link Crown	0.69	0	0	5.098	0
1575	55.08	71.455	0.918	55.998	Below Link Crown	0.398	0	0	2.138	0
1578	54.3	69.221	1.179	55.479	Below Link Crown	0.511	0	0.594	2.732	0
1579	53.5	67.5	0.776	54.276	Below Link Crown	0.336	0	0	2.731	0
1580	46.2	57.509	1.002	47.202	Below Link Crown	0.434	0	0	2.731	0
1581	50.3	61.687	0.874	51.174	Below Link Crown	0.379	0	0	2.731	0
1582	48.9	59.49	0.676	49.576	Below Link Crown	0.293	0	0	2.731	0
1745	9.45	23.5	1.385	10.835	Below Link Crown	0.6	0	0.075	5.091	0
1746	8.61	23.5	1.687	10.297	Below Link Crown	0.731	0	0	5.091	0
1819	31.7	45.166	1.077	32.777	Below Link Crown	0.467	0	1.436	4.323	0
1918	0.33	13.82	0.899	1.229	Below Link Crown	0.39	0	0	6.212	0
2324	4.01	17	1.429	5.439	Below Link Crown	0.619	0	0	5.098	0
2339	3.2	18.5	1.494	4.694	Below Link Crown	0.647	0	0	5.098	0
2758	39.5	53.124	1.249	40.749	Below Link Crown	0.541	0	0	2.887	0
2774	33.21	49.355	1.369	34.579	Below Link Crown	0.593	0	0	2.888	0
2838	10.32	25.5	1.404	11.724	Below Link Crown	0.608	0	0.672	5.016	0
2874	52.09	64.634	0.806	52.896	Below Link Crown	0.349	0	0	2.731	0
2894	60.53	78.8	0	60.53	Below Link Invert	0	0	0	0	0
2928	14.591	28.878	0.834	15.425	Below Link Crown	0.361	0	0	4.344	0
2929	12.19	27	0.996	13.186	Below Link Crown	0.432	0	0	4.344	0
3066	4.57	15.5	1.551	6.121	Below Link Crown	0.672	0	0	5.098	0
3106	59.37	76.8	0	59.37	Below Link Invert	0	0	0	0	0
3107	58.13	74.4	0	58.13	Below Link Invert	0	0	0	0	0
3108	57.06	72.1	0	57.06	Below Link Invert	0	0	0	0	0
3109	55.96	69.9	0.038	55.998	Below Link Crown	0.016	0	0	0	0
3138	21.45	32.7	1.572	23.022	Below Link Crown	0.681	0	0	4.322	0
3139	16.87	33.1	1.077	17.947	Below Link Crown	0.467	0	0	4.322	0
3140	15.76	31	1.28	17.04	Below Link Crown	0.554	0	0	4.344	0
3159	15.77	30.4	1.363	17.133	Below Link Crown	0.591	0	0.021	4.344	0
373	8.44	23.5	1.641	10.081	Below Link Crown	0.711	0	0.006	5.098	0
405	7.16	18.8	1.577	8.737	Below Link Crown	0.683	0	0	5.098	0
413	6.94	17.5	1.573	8.513	Below Link Crown	0.682	0	0	5.098	0
414	6.57	16.5	1.578	8.148	Below Link Crown	0.684	0	0	5.098	0
483	4.95	15.5	1.567	6.517	Below Link Crown	0.679	0	0	5.098	0
484	5.25	16.5	1.578	6.828	Below Link Crown	0.684	0	0	5.098	0
485	5.42	16.8	1.59	7.01	Below Link Crown	0.689	0	0	5.098	0
486	5.8	17	1.586	7.386	Below Link Crown	0.687	0	0	5.098	0
492	6.19	16.2	1.583	7.773	Below Link Crown	0.686	0	0	5.098	0
JCT-14	9.69	18.93	0	9.69	Below Link Invert	0	0	0	0	0
JCT-16	9.09	17.98	0	9.09	Below Link Invert	0	0	0	0	0
JCT-18	8.39	16.59	0	8.39	Below Link Invert	0	0	0	0	0
JCT-20	-5.93	15.56	0	-5.93	Below Link Invert	0	0	0	0	0
JCT-22	-6.47	14.68	0	-6.47	Below Link Invert	0	0	0	0	0
JCT-228	58.18	72.5	0.282	58.462	Below Link Crown	0.122	0	0	2.138	0
JCT-230	64.78	78	0.591	65.371	Below Link Crown	0.256	0	0	2.138	0
JCT-232	70.41	83	0.557	70.967	Below Link Crown	0.242	0	0	2.138	0
JCT-234	71.18	82.7	0.578	71.758	Below Link Crown	0.25	0	0	2.138	0
JCT-236	74.17	85.08	0.56	74.73	Below Link Crown	0.243	0	0	2.138	0
JCT-238	77.31	90	0.554	77.864	Below Link Crown	0.24	0	0	2.139	0
JCT-24	-7.51	13.7	0	-7.51	Below Link Invert	0	0	0	0	0
JCT-240	80.52	96	0.551	81.071	Below Link Crown	0.239	0	0	2.139	0
JCT-242	81.45	98.8	0.567	82.017	Below Link Crown	0.246	0	0.118	2.139	0

JCT-244	83.81	101.2	0.495	84.305	Below Link Crown	0.215	0	0	2.021	0
JCT-246	90.35	105.5	0.504	90.854	Below Link Crown	0.218	0	0	2.02	0
JCT-248	94.33	109.7	0.504	94.834	Below Link Crown	0.218	0	0.027	2.02	0
JCT-250	96.95	113	0.509	97.459	Below Link Crown	0.221	0	0	1.993	0
JCT-252	104.15	119	0.511	104.661	Below Link Crown	0.222	0	0	1.992	0
JCT-254	110.5	124	0.495	110.995	Below Link Crown	0.214	0	0	1.991	0
JCT-256	116.75	131	0.524	117.274	Below Link Crown	0.227	0	0	1.991	0
JCT-258	123.35	139	0.51	123.86	Below Link Crown	0.221	0	0	1.992	0
JCT-260	130.25	146	0.513	130.763	Below Link Crown	0.222	0	0.896	1.994	0
JCT-262	136.56	151.5	0.384	136.944	Below Link Crown	0.166	0	0	1.102	0
JCT-264	142.8	157.2	0.389	143.189	Below Link Crown	0.168	0	0	1.109	0
JCT-266	149.55	163.8	0.395	149.945	Below Link Crown	0.171	0	0.005	1.111	0
JCT-268	156.33	171.7	0.39	156.72	Below Link Crown	0.169	0	0	1.097	0
JCT-270	157.98	169	0.376	158.356	Below Link Crown	0.163	0	0	1.093	0
JCT-272	159.67	172	0.37	160.04	Below Link Crown	0.161	0	0	1.09	0
JCT-274	162.24	175	0.345	162.585	Below Link Crown	0.15	0	0	1.086	0
JCT-276	166.75	181	0.42	167.17	Below Link Crown	0.182	0	0	1.077	0
JCT-278	188.16	202	0.401	188.561	Below Link Crown	0.174	0	0	1.092	0
JCT-280	195.02	207.5	0.412	195.432	Below Link Crown	0.179	0	0	1.092	0
JCT-282	196.13	210.2	0.399	196.529	Below Link Crown	0.173	0	0	1.092	0
JCT-284	200.5	214.5	0.419	200.919	Below Link Crown	0.181	0	0	1.092	0
JCT-286	212.51	220.5	0.355	212.865	Below Link Crown	0.154	0	0	1.092	0
JCT-288	220.74	230.01	0.413	221.153	Below Link Crown	0.179	0	0	1.092	0
JCT-290	229	237	0.35	229.35	Below Link Crown	0.152	0	0	1.092	0
JCT-292	237.31	246	0.343	237.653	Below Link Crown	0.149	0	0	1.092	0
JCT-306	238.68	243.5	0.434	239.114	Below Link Crown	0.188	0	1.092	1.092	0
JCT-310	186.99	199	0.669	187.659	Below Link Crown	0.29	0	0	1.092	0
JCT-312 - Siphon	186.95	199.5	0.227	187.177	Below Link Crown	0.099	0	0	1.092	0
JCT-314 - Siphon	186.45	199.5	0.573	187.023	Below Link Crown	0.248	0	0	0.987	0
JCT-316 - Siphon	186.95	199.5	0.202	187.152	Below Link Crown	0.088	0	0	0.106	0
JCT-318 - Siphon	170	195.8	6.415	176.415	Below Link Crown	2.78	0	0	0.987	0
JCT-320 - Siphon	170	195.8	5.604	175.604	Below Link Crown	2.428	0	0	0.106	0
JCT-322 - Siphon	130	190	45.78	175.78	Below Link Crown	19.836	0	0	0.987	0
JCT-324 - Siphon	130	190	45.514	175.514	Below Link Crown	19.721	0	0	0.117	0
JCT-326 - Siphon	130	196	46.17	176.17	Below Maximum Depth	20.006	0	0	0.987	0
JCT-328 - Siphon	130	196	45.57	175.57	Below Maximum Depth	19.746	0	0	0.117	0
JCT-330 - Siphon	130	196	46.005	176.005	Below Maximum Depth	19.934	0	0	0.987	0
JCT-332 - Siphon	130	196	45.548	175.548	Below Maximum Depth	19.736	0	0	0.117	0
JCT-334 - Siphon	174.96	189	0.671	175.631	Below Link Crown	0.291	0	0	0.987	0
JCT-336 - Siphon	174.96	189	0.557	175.517	Below Link Crown	0.242	0	0	0.014	0
JCT-338 - Siphon	175.13	189	0.373	175.503	Below Link Crown	0.162	0	0	1.036	0
JCT-340	174.7	189	0.339	175.039	Below Link Crown	0.147	0	0	1	0
JCT-342	173.72	188	1.125	174.845	Below Link Crown	0.487	0	0	0.989	0
JCT-614	22.4	36.4	0	22.4	Below Link Invert	0	0	0	0	0
JCT-616	16.85	35.12	0	16.85	Below Link Invert	0	0	0	0	0
JCT-618	16.1	34.32	0	16.1	Below Link Invert	0	0	0	0	0
JCT-620	15.2	31.94	0	15.2	Below Link Invert	0	0	0	0	0
JCT-622	14.44	30.75	0	14.44	Below Link Invert	0	0	0	0	0
JCT-624	13.68	29.36	0	13.68	Below Link Invert	0	0	0	0	0
JCT-626	13.1	27.33	0	13.1	Below Link Invert	0	0	0	0	0
JCT-628	12.31	26	0	12.31	Below Link Invert	0	0	0	0	0
JCT-630	12.19	26.03	0	12.19	Below Link Invert	0	0	0	0	0
JCT-632	12.04	25.81	0	12.04	Below Link Invert	0	0	0	0	0
JCT-634	12	25.51	0	12	Below Link Invert	0	0	0	0	0
JCT-636	11.95	26.19	0	11.95	Below Link Invert	0	0	0	0	0
JCT-638	11.76	23.46	0	11.76	Below Link Invert	0	0	0	0	0
JCT-640	11.18	23.14	0	11.18	Below Link Invert	0	0	0	0	0
JCT-642	11.13	22.71	0	11.13	Below Link Invert	0	0	0	0	0
JCT-644	11.1	22.72	0	11.1	Below Link Invert	0	0	0	0	0
JCT-646	11.07	23.09	0	11.07	Below Link Invert	0	0	0	0	0
JCT-648	7.57	21.87	1.593	9.163	Below Link Crown	0.69	0	0	5.098	0
JCT-650	21.74	32.7	0.755	22.495	Below Link Crown	0.327	0	0	4.322	0
JCT_10	19.8	12.9	0.557	20.357	Below Link Crown	0.241	0	0	2.771	0
JCT_12	26.053	16.682	0.837	26.89	Below Link Crown	0.363	0	0	2.771	0
JCT_14	27.406	15.951	0.84	28.246	Below Link Crown	0.364	0	0	2.771	0
JCT_16	30.383	13.303	0.834	31.217	Below Link Crown	0.361	0	0	2.771	0
JCT_18	31.7	13.466	0.834	32.534	Below Link Crown	0.362	0	0	2.771	0
JCT_20	32.031	14.291	1.259	33.29	Below Link Crown	0.545	0	0	2.771	0

JCT_22	32.505	14.775	1.377	33.882	Below Link Crown	0.596	0	0	2.771	0
JCT_24	32.63	15.1	1.395	34.025	Below Link Crown	0.604	0	0	2.771	0
JCT_26	33.21	16.145	1.503	34.713	Below Maximum Depth	0.651	0	0	2.771	0
JCT_28	33.343	16.118	1.398	34.741	Below Link Crown	0.606	0	0	2.771	0
JCT_30	36.402	14.725	0.813	37.215	Below Link Crown	0.352	0	0	2.771	0
JCT_32	39	13.401	0.81	39.81	Below Link Crown	0.351	0	0	2.771	0
JCT_34	39.5	13.624	1.011	40.511	Below Link Crown	0.438	0	0	2.771	0
JCT_36	42	12.232	0.771	42.771	Below Link Crown	0.334	0	0	2.771	0
JCT_38	43.8	11.425	0.877	44.677	Below Link Crown	0.38	0	0	2.771	0
JCT_40	44.52	11.221	0.907	45.427	Below Link Crown	0.393	0	0	2.771	0
JCT_42	46.2	11.309	1.019	47.219	Below Link Crown	0.442	0	0	2.771	0
JCT_44	48.9	10.59	0.682	49.582	Below Link Crown	0.295	0	0	2.771	0
JCT_46	50.3	11.387	0.881	51.181	Below Link Crown	0.382	0	0	2.771	0
JCT_48	52.09	12.544	0.816	52.906	Below Link Crown	0.354	0	0	2.771	0
JCT_50	53.5	14	0.774	54.274	Below Link Crown	0.335	0	0	2.771	0
JCT_52	54.3	14.921	1.2	55.5	Below Link Crown	0.52	0	0	2.771	0
JCT_54	55	16.375	0.933	55.933	Below Link Crown	0.404	0	0	2.771	0

ID	From ID	To ID	Type	Length (ft)	Slope	Flow (mgd)	Flow Class	Depth (ft)	HGL (ft)	Velocity (ft/s)	Flow Volume (ft3)	Froude Number	Capacity d/D	Surcharged d/D	Velocity*Depth (ft2/second)	Top Width (ft)
1065	3140	2928	Circular Pipe	723.262	0.002	4.344	Free Surface	1.057	17.04	4.426	1090.419	0.828	0.631	0.604	4.678	1.712
1066	2928	2929	Circular Pipe	477.97	0.005	4.344	Free Surface	0.915	15.425	5.279	608.269	1.09	0.529	0.523	4.831	1.748
1117	1745	1746	Circular Pipe	267.121	0.003	5.091	Free Surface	1.536	10.835	3.521	590.256	0.444	0.93	0.878	5.409	1.145
1170	3138	JCT-650	Circular Pipe	40.491	0.008	4.322	Free Surface	1.203	23.022	3.793	69.005	0.641	0.733	0.665	4.564	1.652
1172	3139	3159	Circular Pipe	419.299	0.003	4.322	Free Surface	1.22	17.947	3.736	746.814	0.624	0.744	0.697	4.558	1.608
1275	2339	1005	Circular Pipe	676.946	0.001	5.098	Free Surface	1.399	4.694	3.035	1757.523	0.49	0.654	0.622	4.247	2.182
133	1580	1449	Circular Pipe	601.5	0.003	2.731	Free Surface	0.963	47.202	3.527	720.468	0.681	0.678	0.642	3.396	1.438
1391	1582	1580	Circular Pipe	290.98	0.009	2.731	Free Surface	0.839	49.576	4.155	294.937	0.886	0.576	0.559	3.486	1.489
1527	3159	3140	Circular Pipe	45.695	0	4.344	Free Surface	1.321	17.133	3.45	88.98	0.534	0.81	0.755	4.558	1.505
153	1003	1918	Circular Pipe	320.415	0	6.212	Free Surface	1.24	2.001	3.697	836.75	0.669	0.438	0.451	4.586	2.736
154	1005	1003	Circular Pipe	654.898	0.003	6.212	Free Surface	1.443	3.774	3.961	1582.416	0.6	0.772	0.721	5.715	1.793
1546	492	486	Circular Pipe	557.176	0.001	5.098	Free Surface	1.584	7.773	2.405	1827.464	0.363	0.668	0.634	3.81	2.408
2116	2324	2339	Circular Pipe	666.672	0.001	5.098	Free Surface	1.462	5.439	2.885	1822.258	0.451	0.688	0.65	4.217	2.146
2120	3066	2324	Circular Pipe	789.633	0.001	5.098	Free Surface	1.49	6.121	2.586	2407.712	0.409	0.621	0.596	3.853	2.453
3212	483	3066	Circular Pipe	539.959	0.001	5.098	Free Surface	1.559	6.517	2.451	1737.844	0.375	0.656	0.624	3.821	2.422
3240	486	485	Circular Pipe	543.467	0.001	5.098	Free Surface	1.588	7.386	2.399	1786.757	0.362	0.67	0.635	3.809	2.407
3241	413	414	Circular Pipe	516.088	0.001	5.098	Free Surface	1.576	8.513	2.421	1681.615	0.367	0.664	0.63	3.814	2.413
3242	373	1477	Circular Pipe	1298.715	0.001	5.098	Free Surface	1.617	10.081	2.35	4359.574	0.349	0.684	0.647	3.798	2.39
3243	414	492	Circular Pipe	535.302	0.001	5.098	Free Surface	1.581	8.148	2.411	1750.929	0.365	0.666	0.632	3.812	2.41
3246	405	413	Circular Pipe	315.776	0.001	5.098	Free Surface	1.575	8.737	2.421	1028.635	0.367	0.664	0.63	3.814	2.413
3258	1477	JCT-648	Circular Pipe	86.708	0.001	5.098	Free Surface	1.592	9.222	2.391	286.016	0.36	0.672	0.637	3.807	2.404
3281	1451	1458	Circular Pipe	506.619	0.005	2.888	Free Surface	1.015	39.994	3.512	644.478	0.65	0.72	0.677	3.564	1.403
3283	1164	2774	Circular Pipe	25.984	0.005	2.888	Free Surface	1.339	34.652	2.684	43.23	0.353	0.942	0.893	3.594	0.928
3449	3109	1575	Circular Pipe	69.501	0.012	0	Free Surface	0.436	55.998	0	19.264	0	0.529	0.573	0	0.824
3456	2894	3106	Circular Pipe	331.979	0.003	0	Free Surface	0	60.53	0	0.003	0	0	0	0	0
3457	3106	3107	Circular Pipe	352.978	0.004	0	Free Surface	0	59.37	0	0.003	0	0	0	0	0
3458	3107	3108	Circular Pipe	306.98	0.003	0	Free Surface	0	58.13	0	0.003	0	0	0	0	0
3459	3108	3109	Circular Pipe	314.98	0.003	0	Free Surface	0.019	57.06	0	1.407	0	0.006	0.023	0	0.247
3607	2838	1745	Circular Pipe	349.387	0.002	5.016	Free Surface	1.395	11.724	3.776	718.1	0.551	0.855	0.797	5.267	1.407
3608	2929	2838	Circular Pipe	673.05	0.003	4.344	Free Surface	1.2	13.186	3.822	1172.115	0.647	0.731	0.686	4.588	1.624
3884	1575	1578	Circular Pipe	376.319	0.002	2.138	Free Surface	1.049	55.998	2.507	493.573	0.451	0.746	0.699	2.629	1.376
3885	1578	1579	Circular Pipe	406.131	0.002	2.731	Free Surface	0.977	55.479	3.466	489.844	0.661	0.69	0.652	3.388	1.429
3888	1448	1450	Circular Pipe	413.913	0.004	2.887	Free Surface	1.021	44.905	3.487	529.107	0.642	0.725	0.681	3.56	1.399
3938	1455	3138	Circular Pipe	1057.188	0.004	4.322	Free Surface	1.342	27.238	4.01	1725.269	0.525	0.944	0.919	5.382	0.818
3984	484	483	Circular Pipe	434.966	0.001	5.098	Free Surface	1.573	6.828	2.425	1414.551	0.368	0.663	0.629	3.815	2.415
3985	485	484	Circular Pipe	258.15	0.001	5.098	Free Surface	1.584	7.01	2.405	846.513	0.363	0.668	0.634	3.81	2.409
4107	1456	1455	Circular Pipe	289.417	0.005	4.323	Free Surface	1.165	28.552	4.541	426.187	0.737	0.834	0.777	5.291	1.249
4108	1454	1456	Circular Pipe	637.016	0.005	4.323	Free Surface	1.146	31.529	4.617	922.781	0.763	0.82	0.764	5.291	1.274
4198	1449	1448	Circular Pipe	193.994	0.004	2.887	Free Surface	1.014	45.443	3.513	246.038	0.65	0.719	0.676	3.563	1.404
4229	1162	1453	Circular Pipe	378.719	0.001	2.887	Free Surface	1.321	33.856	2.029	833.549	0.332	0.701	0.66	2.681	1.894
4287	1163	1162	Circular Pipe	99.992	0.001	2.888	Free Surface	1.354	33.986	1.974	226.263	0.316	0.72	0.677	2.673	1.871
860	2774	1163	Circular Pipe	463.574	0.001	2.888	Free Surface	1.363	34.579	1.96	1056.937	0.312	0.726	0.681	2.671	1.864
861	1453	1819	Circular Pipe	264.675	0.001	2.887	Free Surface	1.184	33.322	2.307	511.96	0.41	0.616	0.592	2.731	1.965
CDT-11	1477	JCT-14	Circular Pipe	284.369	0.002	0	Free Surface	0	9.69	0	0.003	0	0	0.796	0	0.806
CDT-13	JCT-14	JCT-16	Circular Pipe	309.419	0.002	0	Free Surface	0	9.69	0	0.003	0	0	0	0	0
CDT-137	1579	2874	Circular Pipe	243.719	0.006	2.731	Free Surface	0.791	54.276	4.474	230.217	0.993	0.535	0.527	3.537	1.498
CDT-139	2874	1581	Circular Pipe	351.114	0.005	2.731	Free Surface	0.84	52.896	4.15	357.365	0.885	0.576	0.56	3.486	1.489
CDT-141	1581	1582	Circular Pipe	310.979	0.005	2.731	Free Surface	0.775	51.174	4.587	286.306	1.031	0.521	0.517	3.555	1.499
CDT-143	1450	2758	Circular Pipe	411.412	0.006	2.887	Free Surface	1.093	42.937	3.238	562.359	0.561	0.781	0.729	3.54	1.333
CDT-145	2758	1451	Circular Pipe	183.803	0.003	2.888	Free Surface	1.121	40.749	3.153	258.696	0.533	0.802	0.748	3.536	1.303
CDT-15	JCT-16	JCT-18	Circular Pipe	352.122	0.002	0	Free Surface	0	9.09	0	0.004	0	0	0	0	0
CDT-161	1458	1164	Circular Pipe	596.552	0.005	2.888	Free Surface	1.172	37.438	3.016	876.174	0.486	0.839	0.782	3.535	1.239
CDT-17	JCT-18	JCT-20	Circular Pipe	363.909	0.002	0	Free Surface	0	8.39	0	0.004	0	0	0	0	0
CDT-19	JCT-20	JCT-22	Circular Pipe	262.869	0.002	0	Free Surface	0	-5.93	0	0.003	0	0	0	0	0
CDT-21	JCT-22	JCT-24	Circular Pipe	230.188	0.005	0	Free Surface	0	-6.47	0	0.002	0	0	0	0	0
CDT-23	JCT-24	OUTLET_2	Circular Pipe	340.973	0.024	0	Free Surface	0	-7.51	0	0.005	0	0	0	0	0
CDT-347	1819	1454	Circular Pipe	281.803	0.005	4.323	Free Surface	1.111	32.777	3.729	505.315	0.692	0.571	0.556	4.145	1.987
CDT-399	1746	373	Circular Pipe	98.47	0.002	5.091	Free Surface	1.664	10.297	3.336	232.409	0.332	0.982	0.951	5.552	0.751
CDT-525	JCT-242	JCT-240	Circular Pipe	129.937	0.007	2.139	Free Surface	0.559	82.017	4.606	93.376	1.283	0.229	0.28	2.575	1.795
CDT-527	JCT-240	JCT-238	Circular Pipe	412.505	0.008	2.139	Free Surface	0.552	81.071	4.683	291.478	1.313	0.225	0.276	2.587	1.788
CDT-529	JCT-238	JCT-236	Circular Pipe	412.584	0.008	2.138	Free Surface	0.557	77.864	4.628	294.944	1.292	0.228	0.279	2.578	1.793
CDT-531	JCT-236	JCT-234	Circular Pipe	410.422	0.007	2.138	Free Surface	0.569	74.73	4.491	302.312	1.239	0.234	0.285	2.556	1.804
CDT-533	JCT-234	JCT-232	Circular Pipe	114.905	0.007	2.138	Free Surface	0.568	71.758	4.506	84.358	1.244	0.234	0.284	2.558	1.803
CDT-535	JCT-232	JCT-230	Circular Pipe	758.405	0.007	2.138	Free Surface	0.574	70.967	4.435	565.695	1.217	0.237	0.287	2.546	1.809
CDT-537	JCT-230	JCT-228	Circular Pipe	666.748	0.01	2.138	Free Surface	0.436	65.371	6.532	348.648	2.079	0.161	0.218	2.85	1.652
CDT-539	JCT-228	1575	Circular Pipe	41.924	0.073	2.138	Free Surface	0.58	58.462	3.452	43.174	0.956	0.136	0.2	2.001	2.4
CDT-541	JCT-248	JCT-246	Circular Pipe	333.392	0.012	2.02	Free Surface	0.504	94.834	5.455	191.069	1.598	0.238	0.288	2.748	1.584
CDT-543	JCT-246	JCT-244	Circular Pipe	541.703	0.012	2.021	Free Surface	0.5	90.854	5.518	306.946	1.624	0.236	0.286	2.757	1.58
CDT-545	JCT-244	JCT-242	Circular Pipe	185.428	0.013	2.021	Free Surface	0.531	84.305	5.065	114.551	1.441	0.257	0.304	2.691	1.609
CDT-547	JCT-252	JCT-250	Circular Pipe	611.302	0.012	1.993	Free Surface	0.51	104.661	5.444	346.153	1.58	0.26	0.306	2.778	1.536
CDT-549	JCT-250	JCT-248	Circular Pipe	216.677	0.012	1.993	Free Surface	0.506	97.459	5.505	121.37	1.605	0.257	0.304	2.787	1.533
CDT-551	JCT-256	JCT-254	Circular Pipe	559.071	0.011	1.991	Free Surface	0.509	117.274	5.455	315.819	1.585	0.259	0.306	2.778	1.535
CDT-553	JCT-254	JCT-252	Circular Pipe	475.745	0.013	1.992	Free Surface	0.503	110.995	5.551	264.157	1.624	0.254	0.302	2.792	1.53
CDT-555	JCT-260	JCT-258	Circular Pipe	593.76	0.012	1.992	Free Surface	0.511	130.763	5.422	337.402	1.572	0.26	0.307	2.773	1.537
CDT-557	JCT-258	JCT-256	Circular Pipe	555.566	0.012	1.991	Free Surface	0.517	123.86	5.344	320.233	1.54	0.264	0.31	2.762	1.541
CDT-559	JCT-264	JCT-262	Circular Pipe	506.992	0.012	1.102	Free Surface	0.386	143.189	4.732	182.648	1.591	0.204	0.257	1.828	1.312
CDT-561	JCT-262	JCT-260	Circular Pipe	496.528	0.013	1.098	Free Surface	0.449	136.944	3.826	221.402	1.186	0.251	0.299	1.716	1.373
CDT-563	JCT-266	JCT-264	Circular Pipe	576.483	0.012	1.109	Free Surface	0.392	149.945	4.666	211.987	1.557	0.208	0.261	1.829	1.318
CDT-565	JCT-268	JCT-266	Circular Pipe	561.7	0.012	1.106	Free Surface	0.393	156.72	4.64	207.147	1.546	0.209	0.262	1.822	1.319
CDT-567	JCT-274	JCT-272	Circular Pipe	134.493	0.019	1.09	Free Surface	0.358	162.585	5.216	43.501	1.828	0.183	0.239	1.866	1.278
CDT-569	JCT-272	JCT-270	Circular Pipe	116.675	0.014	1.093	Free Surface	0.373	160.04	4.924	40.065	1.686	0.194	0.249	1.838	1.297
CDT-571	JCT-270	JCT-268	Circular Pipe	120.073	0.014	1.097	Free Surface	0.383	158.356	4.764	42.785	1.609	0.202	0.255	1.826	1.308
CDT-573	JCT-276	JCT-274	Circular Pipe	445.147	0.01	1.086	Free Surface	0.383	167.17	4.725	158.667	1.596	0.201	0.255	1.809	1.308
CDT-575	JCT-280	JCT-278	Circular Pipe	541.695	0.013	1.092	Free Surface	0.407	195.432	4.876	187.746	1.58	0.282	0.325	1.984	1.171
CDT-577	JCT-284	JCT-282	Circular Pipe	359.819	0.012	1.092	Free Surface	0.409	200.919	4.843	125.558	1.565	0.284	0.327	1.98	1.173
CDT-579	JCT-282	JCT-280	Circular Pipe	78.788	0.014	1.092	Free Surface	0.405	196.529	4.898	27.185	1.59	0.281	0.324	1.986	1.17
CDT-581	JCT-288	JCT-286	Circular Pipe	597.224	0.014	1.092	Free Surface	0.384	221.153	5.277	191.464	1.764	0.261	0.307	2.027	1.153
CDT-583	JCT-286	JCT-284	Circular Pipe	545.486	0.022	1.092	Free Surface	0.387	212.865	5.222	176.74	1.739	0.264	0.31	2.021	1.156
CDT-585	JCT-292	JCT-290	Circular Pipe	556.951	0.015	1.092	Free Surface	0.347	237.653	6.086	154.667	2.153	0.226	0.277	2.11	1.119
CDT-587	JCT-290	JCT-288	Circular Pipe	600.547	0.014	1.092	Free Surface	0.382	229.35	5.323	190.868	1.786	0.259	0.305	2.032	1.151
CDT-593	JCT-306	JCT-292	Circular Pipe	174.548	0.008	1.092	Free Surface	0.388	239.114	5.196	56.914	1.727	0.265	0.311	2.018	1.157
CDT-595	JCT-278	JCT-310	Circular Pipe	119.359	0.008	1.092	Free Surface	0.435	188.561	4.444	45.424	1.386	0.31	0.428	1.935	1.237
CDT-597	JCT-310	JCT-312	Circular Pipe	20.487	0.002	1.092	Free Surface	0.448	187.659	4.27	8.413	1.31	0.323	0.359	1.914	1.199
CDT-599 - Siphon	JCT-312 - Siphon	JCT-316 - Siphon	Circular Pipe	5.863	0	0.106	Free Surface	0.215	187.177	1.682	0.57	0.75	0.278	0.322	0.361	0.623

CDT-601 - Siphon	JCT-312 - Siphon	JCT-314 - Siphon	Circular Pipe	5.949	0.084	0.987	Free Surface	0.4	187.177	5.2	1.784	1.674	0.374	0.4	2.081	0.98
CDT-603 - Siphon	JCT-316 - Siphon	JCT-320 - Siphon	Circular Pipe	110.225	0.003	0.106	Free Surface	0.194	187.152	1.942	9.279	0.917	0.241	4.354	0.376	0.261
CDT-605 - Siphon	JCT-314 - Siphon	JCT-318 - Siphon	Circular Pipe	110.763	0.003	0.987	Free Surface	0.548	187.023	3.462	48.829	0.917	0.561	3.494	1.898	0.392
CDT-607 - Siphon	JCT-318 - Siphon	JCT-326 - Siphon	Circular Pipe	225.563	0.18	0.987	Backwater	1	176.415	1.944	177.156	0	1	26.293	1.944	0.392
CDT-609 - Siphon	JCT-320 - Siphon	JCT-328 - Siphon	Circular Pipe	224.682	0.181	0.117	Backwater	0.667	175.604	0.52	78.429	0	1	38.381	0.347	0.261
CDT-611 - Siphon	JCT-326 - Siphon	JCT-330 - Siphon	Circular Pipe	151.92	0	0.987	Exceeds Capacity	1	176.17	1.944	119.317	0	1	46.088	1.944	0.392
CDT-613 - Siphon	JCT-328 - Siphon	JCT-332 - Siphon	Circular Pipe	152.8	0	0.117	Exceeds Capacity	0.667	175.57	0.52	53.337	0	1	68.338	0.347	0.261
CDT-615 - Siphon	JCT-330 - Siphon	JCT-322 - Siphon	Circular Pipe	207.665	0	0.987	Exceeds Capacity	1	176.005	1.944	163.1	0	1	45.893	1.944	0.392
CDT-617 - Siphon	JCT-332 - Siphon	JCT-324 - Siphon	Circular Pipe	209.03	0	0.117	Exceeds Capacity	0.667	175.548	0.52	72.965	0	1	68.296	0.346	0.261
CDT-619 - Siphon	JCT-322 - Siphon	JCT-334 - Siphon	Circular Pipe	83.796	0	0.987	Free Surface	0.745	175.78	2.432	52.342	0.505	0.799	23.225	1.813	0.392
CDT-621 - Siphon	JCT-324 - Siphon	JCT-336 - Siphon	Circular Pipe	82.201	0	0.014	Free Surface	0.556	175.517	0.071	25.551	0.016	0.89	34.553	0.04	0.261
CDT-623 - Siphon	JCT-334 - Siphon	JCT-338 - Siphon	Circular Pipe	7.153	0.028	0.987	Free Surface	0.337	175.631	6.561	1.667	2.331	0.296	0.522	2.211	0.999
CDT-625 - Siphon	JCT-336 - Siphon	JCT-338 - Siphon	Circular Pipe	6.895	0.029	0.049	Free Surface	0.28	175.517	0.547	0.97	0.21	0.399	0.698	0.153	0.612
CDT-627	JCT-338	JCT-340	Circular Pipe	20.402	0.011	1	Free Surface	0.352	175.503	4.902	6.446	1.733	0.179	0.237	1.724	1.276
CDT-629	JCT-340	JCT-342	Circular Pipe	97.32	0.01	0.989	Free Surface	0.732	175.039	1.789	83.692	0.417	0.484	0.488	1.308	1.499
CDT-631	JCT-342	JCT-276	Circular Pipe	550.526	0.014	1.077	Free Surface	0.373	174.845	4.867	189.179	1.668	0.194	0.515	1.813	1.499
CDT-933	JCT-614	JCT-616	Circular Pipe	348.961	0.016	0	Free Surface	0	22.4	0	0.007	0	0	0	0	0
CDT-935	JCT-616	JCT-618	Circular Pipe	201.861	0.004	0	Free Surface	0	16.85	0	0.004	0	0	0	0	0
CDT-937	JCT-618	JCT-620	Circular Pipe	602.647	0.001	0	Free Surface	0	16.1	0	0.011	0	0	0	0	0
CDT-939	JCT-620	JCT-622	Circular Pipe	601.262	0.001	0	Free Surface	0	15.2	0	0.011	0	0	0	0	0
CDT-941	JCT-622	JCT-624	Circular Pipe	600.609	0.001	0	Free Surface	0	14.44	0	0.011	0	0	0	0	0
CDT-943	JCT-624	JCT-626	Circular Pipe	399.527	0.001	0	Free Surface	0	13.68	0	0.007	0	0	0	0	0
CDT-945	JCT-626	JCT-628	Circular Pipe	562.938	0.001	0	Free Surface	0	13.1	0	0.012	0	0	0	0	0
CDT-947	JCT-628	JCT-630	Circular Pipe	39.255	0.003	0	Free Surface	0	12.31	0	0.001	0	0	0	0	0
CDT-949	JCT-630	JCT-632	Circular Pipe	74.306	0.002	0	Free Surface	0	12.19	0	0.002	0	0	0	0	0
CDT-951	JCT-632	JCT-634	Circular Pipe	41.928	0.001	0	Free Surface	0	12.04	0	0.001	0	0	0	0	0
CDT-953	JCT-634	JCT-636	Circular Pipe	51.716	0.001	0	Free Surface	0	12	0	0.001	0	0	0	0	0
CDT-955	JCT-636	JCT-638	Circular Pipe	227.694	0.001	0	Free Surface	0	11.95	0	0.005	0	0	0	0	0
CDT-957	JCT-638	JCT-640	Circular Pipe	540.452	0.001	0	Free Surface	0	11.76	0	0.012	0	0	0	0	0
CDT-959	JCT-640	JCT-642	Circular Pipe	80.063	0.001	0	Free Surface	0	11.18	0	0.002	0	0	0	0	0
CDT-961	JCT-642	JCT-644	Circular Pipe	41.779	0.001	0	Free Surface	0	11.13	0	0.001	0	0	0	0	0
CDT-963	JCT-644	JCT-646	Circular Pipe	41.46	0.001	0	Free Surface	0	11.1	0	0.001	0	0	0	0	0
CDT-965	JCT-648	405	Circular Pipe	607.997	0.001	5.098	Free Surface	1.585	9.163	2.404	1994.854	0.363	0.668	0.634	3.81	2.408
CDT-967	JCT-646	JCT-648	Circular Pipe	299.486	0.001	0	Free Surface	0	11.07	0	0.006	0	0	0.398	0	1.958
CDT-969	JCT-650	3139	Circular Pipe	407.332	0.012	4.322	Free Surface	0.916	22.495	5.25	518.298	1.084	0.53	0.523	4.807	1.748
CDT-971	JCT-650	JCT-614	Circular Pipe	31.774	0.017	0	Free Surface	0	22.495	0	0.001	0	0	0.216	0	1.439
CDT_11	JCT_10	JCT-614	Circular Condui	67.214	0.019	2.771	Free Surface	0.746	20.357	4.887	58.985	1.126	0.496	0.497	3.645	1.5
CDT_13	JCT_12	JCT_10	Circular Condui	1055.562	0.006	2.771	Free Surface	0.697	26.89	5.333	850.322	1.282	0.455	0.465	3.717	1.496
CDT_15	JCT_14	JCT_12	Circular Condui	294.125	0.005	2.771	Free Surface	0.838	28.246	4.22	298.816	0.9	0.575	0.559	3.538	1.49
CDT_17	JCT_16	JCT_14	Circular Condui	633.972	0.005	2.771	Free Surface	0.837	31.217	4.231	642.45	0.904	0.573	0.558	3.54	1.49
CDT_19	JCT_18	JCT_16	Circular Condui	281.054	0.005	2.771	Free Surface	0.834	32.534	4.247	283.73	0.909	0.571	0.556	3.542	1.49
CDT_21	JCT_20	JCT_18	Circular Condui	267.964	0.001	2.771	Free Surface	1.047	33.29	3.257	347.44	0.587	0.745	0.698	3.408	1.378
CDT_23	JCT_22	JCT_20	Circular Condui	384.169	0.001	2.771	Free Surface	1.318	33.882	2.607	630.276	0.355	0.931	0.878	3.435	0.98
CDT_25	JCT_24	JCT_22	Circular Condui	98.036	0.001	2.771	Free Surface	1.386	34.025	2.514	167.171	0.302	0.965	0.924	3.484	0.795
CDT_27	JCT_26	JCT_24	Circular Condui	467.314	0.001	2.771	Free Surface	1.447	34.713	2.454	813	0.242	0.989	0.966	3.552	0.588
CDT_29	JCT_28	JCT_26	Circular Condui	22.875	0.006	2.771	Free Surface	1.449	34.741	2.453	39.825	0.24	0.989	0.967	3.554	0.588
CDT_31	JCT_30	JCT_28	Circular Condui	601.294	0.005	2.771	Free Surface	1.106	37.215	3.071	809.748	0.526	0.79	0.737	3.395	1.32
CDT_33	JCT_32	JCT_30	Circular Condui	503.292	0.005	2.771	Free Surface	0.812	39.81	4.393	491.134	0.958	0.552	0.541	3.565	1.495
CDT_35	JCT_34	JCT_32	Circular Condui	183	0.003	2.771	Free Surface	0.91	40.511	3.821	204.955	0.769	0.635	0.607	3.478	1.465
CDT_37	JCT_36	JCT_34	Circular Condui	411.762	0.006	2.771	Free Surface	0.891	42.771	3.92	449.265	0.802	0.619	0.594	3.493	1.473
CDT_39	JCT_38	JCT_36	Circular Condui	415.03	0.004	2.771	Free Surface	0.824	44.677	4.31	412.662	0.93	0.563	0.549	3.552	1.492
CDT_41	JCT_40	JCT_38	Circular Condui	196.098	0.004	2.771	Free Surface	0.892	45.427	3.915	214.757	0.8	0.62	0.595	3.492	1.473
CDT_43	JCT_42	JCT_40	Circular Condui	598.097	0.003	2.771	Free Surface	0.963	47.219	3.577	716.4	0.69	0.678	0.642	3.445	1.438
CDT_45	JCT_44	JCT_42	Circular Condui	290.912	0.009	2.771	Free Surface	0.85	49.582	4.147	299.585	0.876	0.585	0.567	3.527	1.486
CDT_47	JCT_44	JCT_46	Circular Condui	310.446	0.005	-2.771	Free Surface	0.782	51.181	4.605	288.826	1.03	0.527	0.521	3.599	1.499
CDT_49	JCT_48	JCT_46	Circular Condui	356.196	0.005	2.771	Free Surface	0.849	52.906	4.156	367.382	0.879	0.584	0.566	3.528	1.487
CDT_51	JCT_50	JCT_48	Circular Condui	235.308	0.006	2.771	Free Surface	0.795	54.274	4.506	223.905	0.996	0.538	0.53	3.583	1.497
CDT_53	JCT_52	JCT_50	Circular Condui	411.801	0.002	2.771	Free Surface	0.987	55.5	3.476	501.535	0.658	0.698	0.658	3.432	1.423
CDT_55	JCT_54	JCT_52	Circular Condui	356.211	0.002	2.771	Free Surface	1.066	55.933	3.191	475.624	0.566	0.76	0.711	3.403	1.36
CDT_57	1575	JCT_54	Circular Condui	27.011	0.003	2.771	Free Surface	0.898	55.942	2.413	48.019	0.529	0.251	0.299	2.165	2.747

Corral Hollow Sewer System - Manhole Report (2024)

ID	Invert Elevation (ft)	Rim Elevation (ft)	Depth (ft)	Head (ft)	Head Class	Pressure (psi)	Volume (ft3)	Lateral Inflow (mgd)	Total Inflow (mgd)	Flooding (mgd)
1003	0.42	12.5	1.624	2.044	Below Link Crown	0.704	0	0	6.561	0
1005	2.47	15.5	1.355	3.825	Below Link Crown	0.587	0	1.114	6.561	0
1162	32.505	47.28	1.46	33.965	Below Link Crown	0.632	0	0	3.236	0
1163	32.63	47.73	1.469	34.099	Below Link Crown	0.636	0	0	3.236	0
1164	33.343	49.461	1.463	34.806	Below Link Crown	0.634	0	0	3.236	0
1448	43.8	55.225	1.218	45.018	Below Link Crown	0.528	0	0	3.236	0
1449	44.52	55.741	0.999	45.519	Below Link Crown	0.433	0	0.155	3.236	0
1450	42	54.232	1.014	43.014	Below Link Crown	0.44	0	0	3.236	0
1451	39	52.401	1.083	40.083	Below Link Crown	0.469	0	0	3.236	0
1453	32.031	46.322	1.379	33.41	Below Link Crown	0.597	0	0	3.236	0
1454	30.383	43.686	1.239	31.622	Below Link Crown	0.537	0	0	4.672	0
1455	26.053	42.735	1.306	27.359	Below Link Crown	0.566	0	0	4.672	0
1456	27.406	43.357	1.239	28.645	Below Link Crown	0.537	0	0	4.672	0
1458	36.402	51.127	1.136	37.538	Below Link Crown	0.492	0	0	3.236	0
1477	7.63	19.5	1.666	9.296	Below Link Crown	0.722	0	0	5.447	0
1575	55.08	71.455	1.031	56.111	Below Link Crown	0.447	0	0	2.487	0
1578	54.3	69.221	1.292	55.592	Below Link Crown	0.56	0	0.594	3.081	0
1579	53.5	67.5	0.835	54.335	Below Link Crown	0.362	0	0	3.081	0
1580	46.2	57.509	1.099	47.299	Below Link Crown	0.476	0	0	3.081	0
1581	50.3	61.687	0.944	51.244	Below Link Crown	0.409	0	0	3.081	0
1582	48.9	59.49	0.724	49.624	Below Link Crown	0.314	0	0	3.081	0
1745	9.45	23.5	1.618	11.068	Below Link Crown	0.701	0	0.075	5.441	0
1746	8.61	23.5	1.813	10.423	Below Maximum Depth	0.786	0	0	5.441	0
1819	31.7	45.166	1.13	32.83	Below Link Crown	0.49	0	1.436	4.672	0
1918	0.33	13.82	0.938	1.268	Below Link Crown	0.406	0	0	6.561	0
2324	4.01	17	1.499	5.509	Below Link Crown	0.65	0	0	5.447	0
2339	3.2	18.5	1.559	4.759	Below Link Crown	0.676	0	0	5.447	0
2758	39.5	53.124	1.369	40.869	Below Link Crown	0.593	0	0	3.236	0
2774	33.21	49.355	1.493	34.703	Below Link Crown	0.647	0	0	3.236	0
2838	10.32	25.5	1.578	11.898	Below Link Crown	0.684	0	0.672	5.365	0
2874	52.09	64.634	0.868	52.958	Below Link Crown	0.376	0	0	3.081	0
2894	60.53	78.8	0	60.53	Below Link Invert	0	0	0	0	0
2928	14.591	28.878	0.872	15.463	Below Link Crown	0.378	0	0	4.693	0
2929	12.19	27	1.047	13.237	Below Link Crown	0.454	0	0	4.693	0
3066	4.57	15.5	1.618	6.188	Below Link Crown	0.701	0	0	5.447	0
3106	59.37	76.8	0	59.37	Below Link Invert	0	0	0	0	0
3107	58.13	74.4	0	58.13	Below Link Invert	0	0	0	0	0
3108	57.06	72.1	0	57.06	Below Link Invert	0	0	0	0	0
3109	55.96	69.9	0.151	56.111	Below Link Crown	0.065	0	0	0	0
3138	21.45	32.7	1.624	23.074	Below Link Crown	0.704	0	0	4.672	0
3139	16.87	33.1	1.135	18.005	Below Link Crown	0.492	0	0	4.672	0
3140	15.76	31	1.357	17.117	Below Link Crown	0.588	0	0	4.693	0
3159	15.77	30.4	1.441	17.211	Below Link Crown	0.624	0	0.021	4.693	0
373	8.44	23.5	1.718	10.158	Below Link Crown	0.744	0	0.006	5.447	0
405	7.16	18.8	1.651	8.811	Below Link Crown	0.715	0	0	5.447	0
413	6.94	17.5	1.647	8.587	Below Link Crown	0.713	0	0	5.447	0
414	6.57	16.5	1.652	8.222	Below Link Crown	0.716	0	0	5.447	0
483	4.95	15.5	1.637	6.587	Below Link Crown	0.709	0	0	5.447	0
484	5.25	16.5	1.65	6.9	Below Link Crown	0.715	0	0	5.447	0
485	5.42	16.8	1.662	7.082	Below Link Crown	0.72	0	0	5.447	0
486	5.8	17	1.659	7.459	Below Link Crown	0.719	0	0	5.447	0
492	6.19	16.2	1.657	7.847	Below Link Crown	0.718	0	0	5.447	0
JCT-14	9.69	18.93	0	9.69	Below Link Invert	0	0	0	0	0
JCT-16	9.09	17.98	0	9.09	Below Link Invert	0	0	0	0	0
JCT-18	8.39	16.59	0	8.39	Below Link Invert	0	0	0	0	0
JCT-20	-5.93	15.56	0	-5.93	Below Link Invert	0	0	0	0	0
JCT-22	-6.47	14.68	0	-6.47	Below Link Invert	0	0	0	0	0
JCT-228	58.18	72.5	0.303	58.483	Below Link Crown	0.131	0	0	2.487	0
JCT-230	64.78	78	0.641	65.421	Below Link Crown	0.278	0	0	2.487	0
JCT-232	70.41	83	0.603	71.013	Below Link Crown	0.261	0	0	2.487	0
JCT-234	71.18	82.7	0.625	71.805	Below Link Crown	0.271	0	0	2.487	0
JCT-236	74.17	85.08	0.605	74.775	Below Link Crown	0.262	0	0	2.487	0
JCT-238	77.31	90	0.599	77.909	Below Link Crown	0.259	0	0	2.487	0
JCT-24	-7.51	13.7	0	-7.51	Below Link Invert	0	0	0	0	0
JCT-240	80.52	96	0.595	81.115	Below Link Crown	0.258	0	0	2.487	0
JCT-242	81.45	98.8	0.613	82.063	Below Link Crown	0.266	0	0.118	2.487	0

JCT-244	83.81	101.2	0.538	84.348	Below Link Crown	0.233	0	0	2.369	0
JCT-246	90.35	105.5	0.547	90.897	Below Link Crown	0.237	0	0	2.369	0
JCT-248	94.33	109.7	0.547	94.877	Below Link Crown	0.237	0	0.088	2.369	0
JCT-250	96.95	113	0.544	97.494	Below Link Crown	0.236	0	0	2.281	0
JCT-252	104.15	119	0.549	104.699	Below Link Crown	0.238	0	0	2.281	0
JCT-254	110.5	124	0.531	111.031	Below Link Crown	0.23	0	0	2.281	0
JCT-256	116.75	131	0.563	117.313	Below Link Crown	0.244	0	0	2.281	0
JCT-258	123.35	139	0.547	123.897	Below Link Crown	0.237	0	0	2.281	0
JCT-260	130.25	146	0.551	130.801	Below Link Crown	0.239	0	0.896	2.281	0
JCT-262	136.56	151.5	0.432	136.992	Below Link Crown	0.187	0	0	1.385	0
JCT-264	142.8	157.2	0.437	143.237	Below Link Crown	0.189	0	0	1.386	0
JCT-266	149.55	163.8	0.443	149.993	Below Link Crown	0.192	0	0.005	1.385	0
JCT-268	156.33	171.7	0.437	156.767	Below Link Crown	0.189	0	0	1.379	0
JCT-270	157.98	169	0.423	158.403	Below Link Crown	0.183	0	0	1.38	0
JCT-272	159.67	172	0.417	160.087	Below Link Crown	0.181	0	0	1.382	0
JCT-274	162.24	175	0.389	162.629	Below Link Crown	0.169	0	0	1.387	0
JCT-276	166.75	181	0.478	167.228	Below Link Crown	0.207	0	0	1.351	0
JCT-278	188.16	202	0.454	188.614	Below Link Crown	0.197	0	0	1.381	0
JCT-280	195.02	207.5	0.467	195.487	Below Link Crown	0.202	0	0	1.381	0
JCT-282	196.13	210.2	0.451	196.581	Below Link Crown	0.195	0	0	1.381	0
JCT-284	200.5	214.5	0.475	200.975	Below Link Crown	0.206	0	0	1.381	0
JCT-286	212.51	220.5	0.401	212.911	Below Link Crown	0.174	0	0	1.381	0
JCT-288	220.74	230.01	0.468	221.208	Below Link Crown	0.203	0	0	1.381	0
JCT-290	229	237	0.395	229.395	Below Link Crown	0.171	0	0	1.381	0
JCT-292	237.31	246	0.387	237.697	Below Link Crown	0.168	0	0	1.381	0
JCT-306	238.68	243.5	0.495	239.175	Below Link Crown	0.214	0	1.381	1.381	0
JCT-310	186.99	199	0.76	187.75	Below Link Crown	0.329	0	0	1.381	0
JCT-312 - Siphon	186.95	199.5	0.256	187.206	Below Link Crown	0.111	0	0	1.381	0
JCT-314 - Siphon	186.45	199.5	0.668	187.118	Below Link Crown	0.29	0	0	1.246	0
JCT-316 - Siphon	186.95	199.5	0.229	187.179	Below Link Crown	0.099	0	0	0.134	0
JCT-318 - Siphon	170	195.8	6.887	176.887	Below Link Crown	2.984	0	0	1.246	0
JCT-320 - Siphon	170	195.8	5.678	175.678	Below Link Crown	2.46	0	0	0.134	0
JCT-322 - Siphon	130	190	45.873	175.873	Below Link Crown	19.877	0	0	1.246	0
JCT-324 - Siphon	130	190	45.662	175.662	Below Maximum Depth	19.785	0	0	0.142	0
JCT-326 - Siphon	130	196	46.496	176.496	Below Maximum Depth	20.147	0	0	1.246	0
JCT-328 - Siphon	130	196	45.726	175.726	Below Maximum Depth	19.813	0	0	0.142	0
JCT-330 - Siphon	130	196	46.233	176.233	Below Maximum Depth	20.033	0	0	1.246	0
JCT-332 - Siphon	130	196	45.728	175.728	Below Maximum Depth	19.814	0	0	0.142	0
JCT-334 - Siphon	174.96	189	0.71	175.67	Below Link Crown	0.308	0	0	1.246	0
JCT-336 - Siphon	174.96	189	0.626	175.586	Below Link Crown	0.271	0	0	0.088	0
JCT-338 - Siphon	175.13	189	0.436	175.566	Below Link Crown	0.189	0	0	1.246	0
JCT-340	174.7	189	0.382	175.082	Below Link Crown	0.166	0	0	1.231	0
JCT-342	173.72	188	1.164	174.884	Below Link Crown	0.504	0	0	1.261	0
JCT-614	22.4	36.4	0	22.4	Below Link Invert	0	0	0	0	0
JCT-616	16.85	35.12	0	16.85	Below Link Invert	0	0	0	0	0
JCT-618	16.1	34.32	0	16.1	Below Link Invert	0	0	0	0	0
JCT-620	15.2	31.94	0	15.2	Below Link Invert	0	0	0	0	0
JCT-622	14.44	30.75	0	14.44	Below Link Invert	0	0	0	0	0
JCT-624	13.68	29.36	0	13.68	Below Link Invert	0	0	0	0	0
JCT-626	13.1	27.33	0	13.1	Below Link Invert	0	0	0	0	0
JCT-628	12.31	26	0	12.31	Below Link Invert	0	0	0	0	0
JCT-630	12.19	26.03	0	12.19	Below Link Invert	0	0	0	0	0
JCT-632	12.04	25.81	0	12.04	Below Link Invert	0	0	0	0	0
JCT-634	12	25.51	0	12	Below Link Invert	0	0	0	0	0
JCT-636	11.95	26.19	0	11.95	Below Link Invert	0	0	0	0	0
JCT-638	11.76	23.46	0	11.76	Below Link Invert	0	0	0	0	0
JCT-640	11.18	23.14	0	11.18	Below Link Invert	0	0	0	0	0
JCT-642	11.13	22.71	0	11.13	Below Link Invert	0	0	0	0	0
JCT-644	11.1	22.72	0	11.1	Below Link Invert	0	0	0	0	0
JCT-646	11.07	23.09	0	11.07	Below Link Invert	0	0	0	0	0
JCT-648	7.57	21.87	1.666	9.236	Below Link Crown	0.722	0	0	5.447	0
JCT-650	21.74	32.7	0.788	22.528	Below Link Crown	0.342	0	0	4.672	0
JCT_10	19.8	12.9	0.557	20.357	Below Link Crown	0.241	0	0	2.771	0
JCT_12	26.053	16.682	0.837	26.89	Below Link Crown	0.363	0	0	2.771	0
JCT_14	27.406	15.951	0.84	28.246	Below Link Crown	0.364	0	0	2.771	0
JCT_16	30.383	13.303	0.834	31.217	Below Link Crown	0.361	0	0	2.771	0
JCT_18	31.7	13.466	0.834	32.534	Below Link Crown	0.362	0	0	2.771	0
JCT_20	32.031	14.291	1.259	33.29	Below Link Crown	0.545	0	0	2.771	0

JCT_22	32.505	14.775	1.377	33.882	Below Link Crown	0.596	0	0	2.771	0
JCT_24	32.63	15.1	1.395	34.025	Below Link Crown	0.604	0	0	2.771	0
JCT_26	33.21	16.145	1.503	34.713	Below Maximum Depth	0.651	0	0	2.771	0
JCT_28	33.343	16.118	1.398	34.741	Below Link Crown	0.606	0	0	2.771	0
JCT_30	36.402	14.725	0.813	37.215	Below Link Crown	0.352	0	0	2.771	0
JCT_32	39	13.401	0.81	39.81	Below Link Crown	0.351	0	0	2.771	0
JCT_34	39.5	13.624	1.011	40.511	Below Link Crown	0.438	0	0	2.771	0
JCT_36	42	12.232	0.771	42.771	Below Link Crown	0.334	0	0	2.771	0
JCT_38	43.8	11.425	0.877	44.677	Below Link Crown	0.38	0	0	2.771	0
JCT_40	44.52	11.221	0.907	45.427	Below Link Crown	0.393	0	0	2.771	0
JCT_42	46.2	11.309	1.019	47.219	Below Link Crown	0.442	0	0	2.771	0
JCT_44	48.9	10.59	0.682	49.582	Below Link Crown	0.295	0	0	2.771	0
JCT_46	50.3	11.387	0.881	51.181	Below Link Crown	0.382	0	0	2.771	0
JCT_48	52.09	12.544	0.816	52.906	Below Link Crown	0.354	0	0	2.771	0
JCT_50	53.5	14	0.774	54.274	Below Link Crown	0.335	0	0	2.771	0
JCT_52	54.3	14.921	1.2	55.5	Below Link Crown	0.52	0	0	2.771	0
JCT_54	55	16.375	0.933	55.933	Below Link Crown	0.404	0	0	2.771	0

ID	From ID	To ID	Type	Length (ft)	Slope	Flow (mgd)	Flow Class	Depth (ft)	HGL (ft)	Velocity (ft/s)	Flow Volume (ft3)	Froude Number	Capacity d/D	Surcharged d/D	Velocity*Depth (ft2/second)	Top Width (ft)
1065	3140	2928	Circular Pipe	723.262	0.002	4.693	Free Surface	1.115	17.117	4.491	1157.096	0.807	0.672	0.637	5.007	1.683
1066	2928	2929	Circular Pipe	477.97	0.005	4.693	Free Surface	0.96	15.463	5.375	645.228	1.076	0.562	0.548	5.159	1.741
1117	1745	1746	Circular Pipe	267.121	0.003	5.441	Free Surface	1.684	11.068	3.543	631.493	0.33	0.988	0.981	5.968	0.686
1170	3138	JCT-650	Circular Pipe	40.491	0.008	4.672	Free Surface	1.248	23.074	3.938	71.399	0.644	0.763	0.689	4.916	1.619
1172	3139	3159	Circular Pipe	419.299	0.003	4.672	Free Surface	1.288	18.005	3.809	790.363	0.605	0.789	0.736	4.907	1.542
1275	2339	1005	Circular Pipe	676.946	0.001	5.447	Free Surface	1.457	4.759	3.093	1842.168	0.484	0.685	0.648	4.508	2.149
133	1580	1449	Circular Pipe	601.5	0.003	3.081	Free Surface	1.049	47.299	3.613	792.88	0.65	0.747	0.699	3.789	1.376
1391	1582	1580	Circular Pipe	290.98	0.009	3.081	Free Surface	0.912	49.624	4.242	324.728	0.853	0.636	0.608	3.867	1.465
1527	3159	3140	Circular Pipe	45.695	0	4.693	Free Surface	1.399	17.211	3.522	94.15	0.512	0.857	0.8	4.928	1.401
153	1003	1918	Circular Pipe	320.415	0	6.561	Free Surface	1.281	2.044	3.745	871.098	0.664	0.456	0.466	4.797	2.743
154	1005	1003	Circular Pipe	654.898	0.003	6.561	Free Surface	1.49	3.825	4.046	1636.554	0.594	0.799	0.745	6.027	1.744
1546	492	486	Circular Pipe	557.176	0.001	5.447	Free Surface	1.658	7.847	2.438	1925.672	0.355	0.704	0.663	4.044	2.363
2116	2324	2339	Circular Pipe	666.672	0.001	5.447	Free Surface	1.529	5.509	2.929	1917.862	0.441	0.724	0.68	4.479	2.1
2120	3066	2324	Circular Pipe	789.633	0.001	5.447	Free Surface	1.558	6.188	2.62	2539.341	0.401	0.655	0.623	4.083	2.423
3212	483	3066	Circular Pipe	539.959	0.001	5.447	Free Surface	1.627	6.587	2.491	1826.696	0.368	0.689	0.651	4.054	2.383
3240	486	485	Circular Pipe	543.467	0.001	5.447	Free Surface	1.661	7.459	2.434	1881.374	0.354	0.705	0.664	4.043	2.361
3241	413	414	Circular Pipe	516.088	0.001	5.447	Free Surface	1.649	8.587	2.453	1772.873	0.359	0.7	0.66	4.046	2.369
3242	373	1477	Circular Pipe	1298.715	0.001	5.447	Free Surface	1.692	10.158	2.384	4590.906	0.342	0.72	0.677	4.033	2.338
3243	414	492	Circular Pipe	535.302	0.001	5.447	Free Surface	1.655	8.222	2.444	1845.645	0.357	0.702	0.662	4.045	2.365
3246	405	413	Circular Pipe	315.776	0.001	5.447	Free Surface	1.649	8.811	2.454	1084.323	0.359	0.7	0.659	4.047	2.369
3258	1477	JCT-648	Circular Pipe	86.708	0.001	5.447	Free Surface	1.666	9.296	2.425	301.301	0.352	0.708	0.666	4.041	2.357
3281	1451	1458	Circular Pipe	506.619	0.005	3.236	Free Surface	1.109	40.083	3.574	709.578	0.611	0.793	0.74	3.964	1.317
3283	1164	2774	Circular Pipe	25.984	0.005	3.236	Free Surface	1.478	34.806	2.844	45.732	0.211	0.996	0.985	4.202	0.588
3449	3109	1575	Circular Pipe	69.501	0.012	0	Free Surface	0.492	56.111	0	21.284	0	0.614	0.709	0	0.757
3456	2894	3106	Circular Pipe	331.979	0.003	0	Free Surface	0	60.53	0	0.003	0	0	0	0	0
3457	3106	3107	Circular Pipe	352.978	0.004	0	Free Surface	0	59.37	0	0.003	0	0	0	0	0
3458	3107	3108	Circular Pipe	306.98	0.003	0	Free Surface	0	58.13	0	0.003	0	0	0	0	0
3459	3108	3109	Circular Pipe	314.98	0.003	0	Free Surface	0.075	57.06	0	10.563	0	0.045	0.09	0	0.477
3607	2838	1745	Circular Pipe	349.387	0.002	5.365	Free Surface	1.598	11.898	3.604	804.534	0.415	0.958	0.913	5.76	0.984
3608	2929	2838	Circular Pipe	673.05	0.003	4.693	Free Surface	1.312	13.237	3.754	1273.552	0.585	0.804	0.75	4.926	1.515
3884	1575	1578	Circular Pipe	376.319	0.002	2.487	Free Surface	1.161	56.111	2.621	548.181	0.427	0.831	0.774	3.044	1.254
3885	1578	1579	Circular Pipe	406.131	0.002	3.081	Free Surface	1.063	55.592	3.559	533.98	0.632	0.758	0.709	3.785	1.362
3888	1448	1450	Circular Pipe	413.913	0.004	3.236	Free Surface	1.116	45.018	3.551	581.145	0.603	0.798	0.744	3.964	1.309
3938	1455	3138	Circular Pipe	1057.188	0.004	4.672	Free Surface	1.403	27.359	4.206	1797.275	0.485	0.973	0.977	5.901	0.588
3984	484	483	Circular Pipe	434.966	0.001	5.447	Free Surface	1.644	6.9	2.463	1488.354	0.361	0.697	0.657	4.048	2.372
3985	485	484	Circular Pipe	258.15	0.001	5.447	Free Surface	1.656	7.082	2.442	890.896	0.356	0.703	0.662	4.044	2.364
4107	1456	1455	Circular Pipe	289.417	0.005	4.672	Free Surface	1.272	28.645	4.524	462.149	0.654	0.904	0.848	5.756	1.076
4108	1454	1456	Circular Pipe	637.016	0.005	4.672	Free Surface	1.239	31.622	4.631	994.316	0.697	0.883	0.826	5.737	1.137
4198	1449	1448	Circular Pipe	193.994	0.004	3.236	Free Surface	1.108	45.519	3.577	270.236	0.612	0.792	0.739	3.965	1.318
4229	1162	1453	Circular Pipe	378.719	0.001	3.236	Free Surface	1.419	33.965	2.101	902.438	0.323	0.759	0.71	2.981	1.815
4287	1163	1162	Circular Pipe	99.992	0.001	3.236	Free Surface	1.464	34.099	2.032	246.425	0.304	0.784	0.732	2.975	1.771
860	2774	1163	Circular Pipe	463.574	0.001	3.236	Free Surface	1.481	34.703	2.008	1156.018	0.297	0.794	0.74	2.973	1.754
861	1453	1819	Circular Pipe	264.675	0.001	3.236	Free Surface	1.254	33.41	2.415	547.775	0.411	0.66	0.627	3.029	1.934
CDT-11	1477	JCT-14	Circular Pipe	284.369	0.002	0	Free Surface	0	9.69	0	0.003	0	0	0.833	0	0.746
CDT-13	JCT-14	JCT-16	Circular Pipe	309.419	0.002	0	Free Surface	0	9.69	0	0.003	0	0	0	0	0
CDT-137	1579	2874	Circular Pipe	243.719	0.006	3.081	Free Surface	0.852	54.335	4.604	252.343	0.972	0.586	0.568	3.921	1.486
CDT-139	2874	1581	Circular Pipe	351.114	0.005	3.081	Free Surface	0.906	52.958	4.27	391.849	0.863	0.632	0.604	3.871	1.467
CDT-141	1581	1582	Circular Pipe	310.979	0.005	3.081	Free Surface	0.834	51.244	4.72	313.601	1.01	0.572	0.556	3.938	1.49
CDT-143	1450	2758	Circular Pipe	411.412	0.006	3.236	Free Surface	1.192	43.014	3.326	609.581	0.526	0.852	0.795	3.964	1.212
CDT-145	2758	1451	Circular Pipe	183.803	0.003	3.236	Free Surface	1.226	40.869	3.238	281.011	0.494	0.875	0.817	3.97	1.159
CDT-15	JCT-16	JCT-18	Circular Pipe	352.122	0.002	0	Free Surface	0	9.09	0	0.004	0	0	0	0	0
CDT-161	1458	1164	Circular Pipe	596.552	0.005	3.236	Free Surface	1.299	37.538	3.079	951.524	0.43	0.92	0.866	4	1.021
CDT-17	JCT-18	JCT-20	Circular Pipe	363.909	0.002	0	Free Surface	0	8.39	0	0.004	0	0	0	0	0
CDT-19	JCT-20	JCT-22	Circular Pipe	262.869	0.002	0	Free Surface	0	-5.93	0	0.003	0	0	0	0	0
CDT-21	JCT-22	JCT-24	Circular Pipe	230.188	0.005	0	Free Surface	0	-6.47	0	0.002	0	0	0	0	0
CDT-23	JCT-24	OUTLET_2	Circular Pipe	340.973	0.024	0	Free Surface	0	-7.51	0	0.005	0	0	0	0	0
CDT-347	1819	1454	Circular Pipe	281.803	0.005	4.672	Free Surface	1.184	32.83	3.732	545.83	0.662	0.617	0.592	4.42	1.965
CDT-399	1746	373	Circular Pipe	98.47	0.002	5.441	Free Surface	1.734	10.423	3.507	236.321	0.189	0.998	1.009	6.082	0.686
CDT-525	JCT-242	JCT-240	Circular Pipe	129.937	0.007	2.487	Free Surface	0.604	82.063	4.805	104.065	1.282	0.255	0.302	2.904	1.837
CDT-527	JCT-240	JCT-238	Circular Pipe	412.505	0.008	2.487	Free Surface	0.597	81.115	4.888	324.737	1.313	0.251	0.298	2.918	1.83
CDT-529	JCT-238	JCT-236	Circular Pipe	412.584	0.008	2.487	Free Surface	0.602	77.909	4.831	328.671	1.292	0.254	0.301	2.908	1.835
CDT-531	JCT-236	JCT-234	Circular Pipe	410.422	0.007	2.487	Free Surface	0.615	74.775	4.686	337.046	1.238	0.261	0.308	2.884	1.846
CDT-533	JCT-234	JCT-232	Circular Pipe	114.905	0.007	2.487	Free Surface	0.614	71.805	4.701	94.05	1.244	0.261	0.307	2.886	1.844
CDT-535	JCT-232	JCT-230	Circular Pipe	758.405	0.007	2.487	Free Surface	0.622	71.013	4.621	631.518	1.214	0.265	0.311	2.872	1.851
CDT-537	JCT-230	JCT-228	Circular Pipe	666.748	0.01	2.487	Free Surface	0.472	65.421	6.801	389.372	2.076	0.18	0.236	3.209	1.698
CDT-539	JCT-228	1575	Circular Pipe	41.924	0.073	2.487	Free Surface	0.647	58.483	3.435	50.516	0.898	0.158	0.222	2.221	2.494
CDT-541	JCT-248	JCT-246	Circular Pipe	333.392	0.012	2.369	Free Surface	0.547	94.877	5.706	214.188	1.598	0.267	0.313	3.121	1.622
CDT-543	JCT-246	JCT-244	Circular Pipe	541.703	0.012	2.369	Free Surface	0.542	90.897	5.772	344.062	1.624	0.264	0.31	3.131	1.618
CDT-545	JCT-244	JCT-242	Circular Pipe	185.428	0.013	2.369	Free Surface	0.576	84.348	5.319	127.906	1.448	0.287	0.329	3.061	1.644
CDT-547	JCT-252	JCT-250	Circular Pipe	611.302	0.012	2.281	Free Surface	0.547	104.699	5.664	380.929	1.582	0.286	0.328	3.097	1.565
CDT-549	JCT-250	JCT-248	Circular Pipe	216.677	0.012	2.281	Free Surface	0.546	97.494	5.682	134.586	1.589	0.285	0.327	3.1	1.564
CDT-551	JCT-256	JCT-254	Circular Pipe	559.071	0.011	2.281	Free Surface	0.547	117.313	5.667	348.213	1.583	0.285	0.328	3.098	1.565
CDT-553	JCT-254	JCT-252	Circular Pipe	475.745	0.013	2.281	Free Surface	0.54	111.031	5.764	291.307	1.621	0.281	0.324	3.112	1.56
CDT-555	JCT-260	JCT-258	Circular Pipe	593.76	0.012	2.281	Free Surface	0.549	130.801	5.633	372.001	1.57	0.287	0.329	3.093	1.566
CDT-557	JCT-258	JCT-256	Circular Pipe	555.566	0.012	2.281	Free Surface	0.555	123.897	5.552	353.145	1.538	0.291	0.333	3.081	1.57
CDT-559	JCT-264	JCT-262	Circular Pipe	506.992	0.012	1.385	Free Surface	0.434	143.237	5.048	215.295	1.592	0.24	0.29	2.193	1.36
CDT-561	JCT-262	JCT-260	Circular Pipe	496.528	0.013	1.385	Free Surface	0.492	136.992	4.254	250.855	1.253	0.285	0.328	2.091	1.408
CDT-563	JCT-266	JCT-264	Circular Pipe	576.483	0.012	1.386	Free Surface	0.44	149.993	4.965	248.893	1.556	0.244	0.293	2.183	1.365
CDT-565	JCT-268	JCT-266	Circular Pipe	561.7	0.012	1.38	Free Surface	0.44	156.767	4.943	242.651	1.549	0.244	0.293	2.174	1.365
CDT-567	JCT-274	JCT-272	Circular Pipe	134.493	0.019	1.382	Free Surface	0.403	162.629	5.592	51.446	1.837	0.216	0.269	2.254	1.329
CDT-569	JCT-272	JCT-270	Circular Pipe	116.675	0.014	1.38	Free Surface	0.42	160.087	5.275	47.242	1.696	0.229	0.28	2.215	1.347
CDT-571	JCT-270	JCT-268	Circular Pipe	120.073	0.014	1.379	Free Surface	0.43	158.403	5.101	50.241	1.618	0.237	0.287	2.192	1.356
CDT-573	JCT-276	JCT-274	Circular Pipe	445.147	0.01	1.387	Free Surface	0.433	167.228	5.07	188.775	1.601	0.239	0.289	2.197	1.359
CDT-575	JCT-280	JCT-278	Circular Pipe	541.695	0.013	1.381	Free Surface	0.46	195.487	5.203	222.366	1.571	0.335	0.368	2.396	1.206
CDT-577	JCT-284	JCT-282	Circular Pipe	359.819	0.012	1.381	Free Surface	0.463	200.975	5.167	148.741	1.556	0.337	0.37	2.392	1.207
CDT-579	JCT-282	JCT-280	Circular Pipe	78.788	0.014	1.381	Free Surface	0.459	196.581	5.227	32.195	1.582	0.333	0.367	2.399	1.205
CDT-581	JCT-288	JCT-286	Circular Pipe	597.224	0.014	1.381	Free Surface	0.435	221.208	5.63	226.777	1.757	0.309	0.348	2.447	1.19
CDT-583	JCT-286	JCT-284	Circular Pipe	545.486	0.022	1.381	Free Surface	0.438	212.911	5.572	209.305	1.732	0.312	0.35	2.44	1.192
CDT-585	JCT-292	JCT-290	Circular Pipe	556.951	0.015	1.381	Free Surface	0.391	237.697	6.503	182.941	2.153	0.268	0.313	2.544	1.159
CDT-587	JCT-290	JCT-288	Circular Pipe	600.547	0.014	1.381	Free Surface	0.432	229.395	5.68	226.081	1.78	0.306	0.345	2.452	1.189
CDT-593	JCT-306	JCT-292	Circular Pipe	174.548	0.008	1.381	Free Surface	0.441	239.175	5.521	67.677	1.709	0.315	0.353	2.434	1.194
CDT-595	JCT-278	JCT-310	Circular Pipe	119.359	0.008	1.381	Free Surface	0.507	188.614	4.572	55.81	1.306	0.381	0.486	2.318	1.249
CDT-597	JCT-310	JCT-312	Circular Pipe	20.487	0.002	1.381	Free Surface	0.508	187.75	4.563	9.847	1.302	0.381	0.406	2.317	1.228
CDT-599 - Siphon	JCT-312 - Siphon	JCT-316 - Siphon	Circular Pipe	5.863	0	0.134	Free Surface	0.242	187.206	1.813	0.673	0.756	0.329	0.364	0.439	0.641

CDT-601 - Siphon	JCT-312 - Siphon	JCT-314 - Siphon	Circular Pipe	5.949	0.084	1.246	Free Surface	0.462	187.206	5.434	2.131	1.605	0.452	0.462	2.511	0.997
CDT-603 - Siphon	JCT-316 - Siphon	JCT-320 - Siphon	Circular Pipe	110.225	0.003	0.134	Free Surface	0.219	187.179	2.08	11.027	0.917	0.286	4.43	0.456	0.261
CDT-605 - Siphon	JCT-314 - Siphon	JCT-318 - Siphon	Circular Pipe	110.763	0.003	1.246	Free Surface	0.63	187.118	3.699	57.692	0.887	0.664	3.778	2.331	0.392
CDT-607 - Siphon	JCT-318 - Siphon	JCT-326 - Siphon	Circular Pipe	225.563	0.18	1.246	Backwater	1	176.887	2.455	177.156	0	1	26.692	2.455	0.392
CDT-609 - Siphon	JCT-320 - Siphon	JCT-328 - Siphon	Circular Pipe	224.682	0.181	0.142	Backwater	0.667	175.726	0.63	78.429	0	1	38.553	0.42	0.261
CDT-611 - Siphon	JCT-326 - Siphon	JCT-330 - Siphon	Circular Pipe	151.92	0	1.246	Exceeds Capacity	1	176.496	2.455	119.317	0	1	46.365	2.455	0.392
CDT-613 - Siphon	JCT-328 - Siphon	JCT-332 - Siphon	Circular Pipe	152.8	0	0.142	Exceeds Capacity	0.667	175.728	0.629	53.337	0	1	68.591	0.42	0.261
CDT-615 - Siphon	JCT-330 - Siphon	JCT-322 - Siphon	Circular Pipe	207.665	0	1.246	Exceeds Capacity	1	176.233	2.455	163.1	0	1	46.053	2.455	0.392
CDT-617 - Siphon	JCT-332 - Siphon	JCT-324 - Siphon	Circular Pipe	209.03	0	0.142	Exceeds Capacity	0.667	175.728	0.629	72.965	0	1	68.542	0.42	0.261
CDT-619 - Siphon	JCT-322 - Siphon	JCT-334 - Siphon	Circular Pipe	83.796	0	1.246	Free Surface	0.812	175.873	2.824	56.499	0.532	0.869	23.292	2.292	0.392
CDT-621 - Siphon	JCT-324 - Siphon	JCT-336 - Siphon	Circular Pipe	82.201	0	0.059	Free Surface	0.646	175.662	0.264	28.333	0.038	0.991	34.716	0.171	0.261
CDT-623 - Siphon	JCT-334 - Siphon	JCT-338 - Siphon	Circular Pipe	7.153	0.028	1.246	Free Surface	0.388	175.67	6.841	2.019	2.242	0.359	0.573	2.655	0.989
CDT-625 - Siphon	JCT-336 - Siphon	JCT-338 - Siphon	Circular Pipe	6.895	0.029	-0.029	Free Surface	0.346	175.586	0.242	1.26	0.082	0.524	0.797	0.084	0.536
CDT-627	JCT-338	JCT-340	Circular Pipe	20.402	0.011	1.231	Free Surface	0.402	175.566	5.004	7.778	1.647	0.215	0.273	2.01	1.336
CDT-629	JCT-340	JCT-342	Circular Pipe	97.32	0.01	1.261	Free Surface	0.773	175.082	2.125	88.849	0.478	0.519	0.515	1.642	1.499
CDT-631	JCT-342	JCT-276	Circular Pipe	550.526	0.014	1.351	Free Surface	0.421	174.884	5.15	224.343	1.654	0.23	0.547	2.166	1.493
CDT-933	JCT-614	JCT-616	Circular Pipe	348.961	0.016	0	Free Surface	0	22.4	0	0.007	0	0	0	0	0
CDT-935	JCT-616	JCT-618	Circular Pipe	201.861	0.004	0	Free Surface	0	16.85	0	0.004	0	0	0	0	0
CDT-937	JCT-618	JCT-620	Circular Pipe	602.647	0.001	0	Free Surface	0	16.1	0	0.011	0	0	0	0	0
CDT-939	JCT-620	JCT-622	Circular Pipe	601.262	0.001	0	Free Surface	0	15.2	0	0.011	0	0	0	0	0
CDT-941	JCT-622	JCT-624	Circular Pipe	600.609	0.001	0	Free Surface	0	14.44	0	0.011	0	0	0	0	0
CDT-943	JCT-624	JCT-626	Circular Pipe	399.527	0.001	0	Free Surface	0	13.68	0	0.007	0	0	0	0	0
CDT-945	JCT-626	JCT-628	Circular Pipe	562.938	0.001	0	Free Surface	0	13.1	0	0.012	0	0	0	0	0
CDT-947	JCT-628	JCT-630	Circular Pipe	39.255	0.003	0	Free Surface	0	12.31	0	0.001	0	0	0	0	0
CDT-949	JCT-630	JCT-632	Circular Pipe	74.306	0.002	0	Free Surface	0	12.19	0	0.002	0	0	0	0	0
CDT-951	JCT-632	JCT-634	Circular Pipe	41.928	0.001	0	Free Surface	0	12.04	0	0.001	0	0	0	0	0
CDT-953	JCT-634	JCT-636	Circular Pipe	51.716	0.001	0	Free Surface	0	12	0	0.001	0	0	0	0	0
CDT-955	JCT-636	JCT-638	Circular Pipe	227.694	0.001	0	Free Surface	0	11.95	0	0.005	0	0	0	0	0
CDT-957	JCT-638	JCT-640	Circular Pipe	540.452	0.001	0	Free Surface	0	11.76	0	0.012	0	0	0	0	0
CDT-959	JCT-640	JCT-642	Circular Pipe	80.063	0.001	0	Free Surface	0	11.18	0	0.002	0	0	0	0	0
CDT-961	JCT-642	JCT-644	Circular Pipe	41.779	0.001	0	Free Surface	0	11.13	0	0.001	0	0	0	0	0
CDT-963	JCT-644	JCT-646	Circular Pipe	41.46	0.001	0	Free Surface	0	11.1	0	0.001	0	0	0	0	0
CDT-965	JCT-648	405	Circular Pipe	607.997	0.001	5.447	Free Surface	1.659	9.236	2.438	2101.937	0.355	0.704	0.663	4.043	2.362
CDT-967	JCT-646	JCT-648	Circular Pipe	299.486	0.001	0	Free Surface	0	11.07	0	0.006	0	0	0.417	0	1.972
CDT-969	JCT-650	3139	Circular Pipe	407.332	0.012	4.672	Free Surface	0.962	22.528	5.337	550.308	1.066	0.563	0.55	5.133	1.741
CDT-971	JCT-650	JCT-614	Circular Pipe	31.774	0.017	0	Free Surface	0	22.528	0	0.001	0	0	0.225	0	1.462
CDT_11	JCT_10	JCT-614	Circular Condui	67.214	0.019	2.771	Free Surface	0.746	20.357	4.887	58.985	1.126	0.496	0.497	3.645	1.5
CDT_13	JCT_12	JCT_10	Circular Condui	1055.562	0.006	2.771	Free Surface	0.697	26.89	5.333	850.322	1.282	0.455	0.465	3.717	1.496
CDT_15	JCT_14	JCT_12	Circular Condui	294.125	0.005	2.771	Free Surface	0.838	28.246	4.22	298.816	0.9	0.575	0.559	3.538	1.49
CDT_17	JCT_16	JCT_14	Circular Condui	633.972	0.005	2.771	Free Surface	0.837	31.217	4.231	642.45	0.904	0.573	0.558	3.54	1.49
CDT_19	JCT_18	JCT_16	Circular Condui	281.054	0.005	2.771	Free Surface	0.834	32.534	4.247	283.73	0.909	0.571	0.556	3.542	1.49
CDT_21	JCT_20	JCT_18	Circular Condui	267.964	0.001	2.771	Free Surface	1.047	33.29	3.257	347.44	0.587	0.745	0.698	3.408	1.378
CDT_23	JCT_22	JCT_20	Circular Condui	384.169	0.001	2.771	Free Surface	1.318	33.882	2.607	630.276	0.355	0.931	0.878	3.435	0.98
CDT_25	JCT_24	JCT_22	Circular Condui	98.036	0.001	2.771	Free Surface	1.386	34.025	2.514	167.171	0.302	0.965	0.924	3.484	0.795
CDT_27	JCT_26	JCT_24	Circular Condui	467.314	0.001	2.771	Free Surface	1.447	34.713	2.454	813	0.242	0.989	0.966	3.552	0.588
CDT_29	JCT_28	JCT_26	Circular Condui	22.875	0.006	2.771	Free Surface	1.449	34.741	2.453	39.825	0.24	0.989	0.967	3.554	0.588
CDT_31	JCT_30	JCT_28	Circular Condui	601.294	0.005	2.771	Free Surface	1.106	37.215	3.071	809.748	0.526	0.79	0.737	3.395	1.32
CDT_33	JCT_32	JCT_30	Circular Condui	503.292	0.005	2.771	Free Surface	0.812	39.81	4.393	491.134	0.958	0.552	0.541	3.565	1.495
CDT_35	JCT_34	JCT_32	Circular Condui	183	0.003	2.771	Free Surface	0.91	40.511	3.821	204.955	0.769	0.635	0.607	3.478	1.465
CDT_37	JCT_36	JCT_34	Circular Condui	411.762	0.006	2.771	Free Surface	0.891	42.771	3.92	449.265	0.802	0.619	0.594	3.493	1.473
CDT_39	JCT_38	JCT_36	Circular Condui	415.03	0.004	2.771	Free Surface	0.824	44.677	4.31	412.662	0.93	0.563	0.549	3.552	1.492
CDT_41	JCT_40	JCT_38	Circular Condui	196.098	0.004	2.771	Free Surface	0.892	45.427	3.915	214.757	0.8	0.62	0.595	3.492	1.473
CDT_43	JCT_42	JCT_40	Circular Condui	598.097	0.003	2.771	Free Surface	0.963	47.219	3.577	716.4	0.69	0.678	0.642	3.445	1.438
CDT_45	JCT_44	JCT_42	Circular Condui	290.912	0.009	2.771	Free Surface	0.85	49.582	4.147	299.585	0.876	0.585	0.567	3.527	1.486
CDT_47	JCT_44	JCT_46	Circular Condui	310.446	0.005	-2.771	Free Surface	0.782	51.181	4.605	288.826	1.03	0.527	0.521	3.599	1.499
CDT_49	JCT_48	JCT_46	Circular Condui	356.196	0.005	2.771	Free Surface	0.849	52.906	4.156	367.382	0.879	0.584	0.566	3.528	1.487
CDT_51	JCT_50	JCT_48	Circular Condui	235.308	0.006	2.771	Free Surface	0.795	54.274	4.506	223.905	0.996	0.538	0.53	3.583	1.497
CDT_53	JCT_52	JCT_50	Circular Condui	411.801	0.002	2.771	Free Surface	0.987	55.5	3.476	501.535	0.658	0.698	0.658	3.432	1.423
CDT_55	JCT_54	JCT_52	Circular Condui	356.211	0.002	2.771	Free Surface	1.066	55.933	3.191	475.624	0.566	0.76	0.711	3.403	1.36
CDT_57	1575	JCT_54	Circular Condui	27.011	0.003	2.771	Free Surface	0.898	55.942	2.413	48.019	0.529	0.251	0.299	2.165	2.747

Corral Hollow Sewer System - Manhole Report (2025)

ID	Invert Elevation (ft)	Rim Elevation (ft)	Depth (ft)	Head (ft)	Head Class	Pressure (psi)	Volume (ft3)	Lateral Inflow (mgd)	Total Inflow (mgd)	Flooding (mgd)
1003	0.42	12.5	1.688	2.108	Below Link Crown	0.731	0	0	7.1	0
1005	2.47	15.5	1.441	3.911	Below Link Crown	0.624	0	1.114	7.1	0
1162	32.505	47.28	3.857	36.362	Below Maximum Depth	1.671	0	0	3.775	0
1163	32.63	47.73	3.874	36.504	Below Maximum Depth	1.679	0	0	3.775	0
1164	33.343	49.461	3.975	37.318	Below Maximum Depth	1.722	0	0	3.775	0
1448	43.8	55.225	5.068	48.868	Below Maximum Depth	2.196	0	0	3.775	0
1449	44.52	55.741	4.948	49.468	Below Maximum Depth	2.144	0	0.155	3.775	0
1450	42	54.232	4.68	46.68	Below Maximum Depth	2.028	0	0	3.775	0
1451	39	52.401	4.533	43.533	Below Maximum Depth	1.964	0	0	3.775	0
1453	32.031	46.322	3.791	35.822	Below Maximum Depth	1.643	0	0	3.775	0
1454	30.383	43.686	4.45	34.833	Below Maximum Depth	1.928	0	0	5.211	0
1455	26.053	42.735	3.323	29.376	Below Maximum Depth	1.44	0	0	5.211	0
1456	27.406	43.357	3.675	31.081	Below Maximum Depth	1.592	0	0	5.211	0
1458	36.402	51.127	4.452	40.854	Below Maximum Depth	1.929	0	0	3.775	0
1477	7.63	19.5	1.787	9.417	Below Link Crown	0.774	0	0	5.986	0
1575	55.08	71.455	1.338	56.418	Below Link Crown	0.58	0	0	3.026	0
1578	54.3	69.221	1.485	55.785	Below Link Crown	0.644	0	0.594	3.62	0
1579	53.5	67.5	0.951	54.451	Below Link Crown	0.412	0	0	3.62	0
1580	46.2	57.509	4.978	51.178	Below Maximum Depth	2.157	0	0	3.62	0
1581	50.3	61.687	2.589	52.889	Below Maximum Depth	1.122	0	0	3.62	0
1582	48.9	59.49	3.105	52.005	Below Maximum Depth	1.345	0	0	3.62	0
1745	9.45	23.5	2.081	11.531	Below Maximum Depth	0.902	0	0.075	5.979	0
1746	8.61	23.5	2.01	10.62	Below Maximum Depth	0.871	0	0	5.979	0
1819	31.7	45.166	3.746	35.446	Below Maximum Depth	1.623	0	1.436	5.211	0
1918	0.33	13.82	0.992	1.322	Below Link Crown	0.43	0	0	7.1	0
2324	4.01	17	1.614	5.624	Below Link Crown	0.699	0	0	5.986	0
2339	3.2	18.5	1.66	4.86	Below Link Crown	0.719	0	0	5.986	0
2758	39.5	53.124	5.004	44.504	Below Maximum Depth	2.168	0	0	3.775	0
2774	33.21	49.355	3.954	37.164	Below Maximum Depth	1.713	0	0	3.775	0
2838	10.32	25.5	2.372	12.692	Below Maximum Depth	1.028	0	0.672	5.904	0
2874	52.09	64.634	1.798	53.888	Below Maximum Depth	0.779	0	0	3.62	0
2894	60.53	78.8	0	60.53	Below Link Invert	0	0	0	0	0
2928	14.591	28.878	0.931	15.522	Below Link Crown	0.403	0	0	5.232	0
2929	12.19	27	1.358	13.548	Below Link Crown	0.588	0	0	5.232	0
3066	4.57	15.5	1.723	6.293	Below Link Crown	0.747	0	0	5.986	0
3106	59.37	76.8	0	59.37	Below Link Invert	0	0	0	0	0
3107	58.13	74.4	0	58.13	Below Link Invert	0	0	0	0	0
3108	57.06	72.1	0	57.06	Below Link Invert	0	0	0	0	0
3109	55.96	69.9	0.458	56.418	Below Link Crown	0.199	0	0	0	0
3138	21.45	32.7	1.697	23.147	Below Link Crown	0.735	0	0	5.211	0
3139	16.87	33.1	1.229	18.099	Below Link Crown	0.533	0	0	5.211	0
3140	15.76	31	1.488	17.248	Below Link Crown	0.645	0	0	5.232	0
3159	15.77	30.4	1.573	17.343	Below Link Crown	0.682	0	0.021	5.232	0
373	8.44	23.5	1.844	10.284	Below Link Crown	0.799	0	0.006	5.986	0
405	7.16	18.8	1.771	8.931	Below Link Crown	0.767	0	0	5.986	0
413	6.94	17.5	1.767	8.707	Below Link Crown	0.766	0	0	5.986	0
414	6.57	16.5	1.773	8.343	Below Link Crown	0.768	0	0	5.986	0
483	4.95	15.5	1.748	6.698	Below Link Crown	0.757	0	0	5.986	0
484	5.25	16.5	1.764	7.014	Below Link Crown	0.764	0	0	5.986	0
485	5.42	16.8	1.778	7.198	Below Link Crown	0.77	0	0	5.986	0
486	5.8	17	1.778	7.578	Below Link Crown	0.77	0	0	5.986	0
492	6.19	16.2	1.777	7.967	Below Link Crown	0.77	0	0	5.986	0
JCT-14	9.69	18.93	0	9.69	Below Link Invert	0	0	0	0	0
JCT-16	9.09	17.98	0	9.09	Below Link Invert	0	0	0	0	0
JCT-18	8.39	16.59	0	8.39	Below Link Invert	0	0	0	0	0
JCT-20	-5.93	15.56	0	-5.93	Below Link Invert	0	0	0	0	0
JCT-22	-6.47	14.68	0	-6.47	Below Link Invert	0	0	0	0	0
JCT-228	58.18	72.5	0.332	58.512	Below Link Crown	0.144	0	0	3.026	0
JCT-230	64.78	78	0.713	65.493	Below Link Crown	0.309	0	0	3.026	0
JCT-232	70.41	83	0.667	71.077	Below Link Crown	0.289	0	0	3.026	0
JCT-234	71.18	82.7	0.693	71.873	Below Link Crown	0.3	0	0	3.026	0
JCT-236	74.17	85.08	0.671	74.841	Below Link Crown	0.291	0	0	3.026	0
JCT-238	77.31	90	0.663	77.973	Below Link Crown	0.287	0	0	3.026	0
JCT-24	-7.51	13.7	0	-7.51	Below Link Invert	0	0	0	0	0
JCT-240	80.52	96	0.659	81.179	Below Link Crown	0.286	0	0	3.026	0
JCT-242	81.45	98.8	0.68	82.13	Below Link Crown	0.295	0	0.118	3.026	0

JCT-244	83.81	101.2	0.598	84.408	Below Link Crown	0.259	0	0	2.908	0
JCT-246	90.35	105.5	0.609	90.959	Below Link Crown	0.264	0	0	2.908	0
JCT-248	94.33	109.7	0.609	94.939	Below Link Crown	0.264	0	0.322	2.908	0
JCT-250	96.95	113	0.582	97.532	Below Link Crown	0.252	0	0	2.586	0
JCT-252	104.15	119	0.587	104.737	Below Link Crown	0.254	0	0	2.586	0
JCT-254	110.5	124	0.567	111.067	Below Link Crown	0.246	0	0	2.586	0
JCT-256	116.75	131	0.601	117.351	Below Link Crown	0.261	0	0	2.586	0
JCT-258	123.35	139	0.584	123.934	Below Link Crown	0.253	0	0	2.586	0
JCT-260	130.25	146	0.589	130.839	Below Link Crown	0.255	0	0.896	2.586	0
JCT-262	136.56	151.5	0.479	137.039	Below Link Crown	0.208	0	0	1.69	0
JCT-264	142.8	157.2	0.484	143.284	Below Link Crown	0.21	0	0	1.69	0
JCT-266	149.55	163.8	0.491	150.041	Below Link Crown	0.213	0	0.005	1.69	0
JCT-268	156.33	171.7	0.485	156.815	Below Link Crown	0.21	0	0	1.685	0
JCT-270	157.98	169	0.469	158.449	Below Link Crown	0.203	0	0	1.685	0
JCT-272	159.67	172	0.462	160.132	Below Link Crown	0.2	0	0	1.685	0
JCT-274	162.24	175	0.43	162.67	Below Link Crown	0.186	0	0	1.685	0
JCT-276	166.75	181	0.53	167.28	Below Link Crown	0.23	0	0	1.686	0
JCT-278	188.16	202	0.506	188.666	Below Link Crown	0.219	0	0	1.685	0
JCT-280	195.02	207.5	0.52	195.54	Below Link Crown	0.225	0	0	1.685	0
JCT-282	196.13	210.2	0.502	196.632	Below Link Crown	0.218	0	0	1.685	0
JCT-284	200.5	214.5	0.53	201.03	Below Link Crown	0.229	0	0	1.685	0
JCT-286	212.51	220.5	0.445	212.955	Below Link Crown	0.193	0	0	1.685	0
JCT-288	220.74	230.01	0.522	221.262	Below Link Crown	0.226	0	0	1.685	0
JCT-290	229	237	0.439	229.439	Below Link Crown	0.19	0	0	1.685	0
JCT-292	237.31	246	0.43	237.74	Below Link Crown	0.186	0	0	1.685	0
JCT-306	238.68	243.5	0.555	239.235	Below Link Crown	0.241	0	1.685	1.685	0
JCT-310	186.99	199	0.848	187.838	Below Link Crown	0.368	0	0	1.685	0
JCT-312 - Siphon	186.95	199.5	0.283	187.233	Below Link Crown	0.123	0	0	1.685	0
JCT-314 - Siphon	186.45	199.5	0.774	187.224	Below Link Crown	0.335	0	0	1.52	0
JCT-316 - Siphon	186.95	199.5	0.255	187.205	Below Link Crown	0.111	0	0	0.165	0
JCT-318 - Siphon	170	195.8	7.485	177.485	Below Link Crown	3.243	0	0	1.52	0
JCT-320 - Siphon	170	195.8	5.801	175.801	Below Link Crown	2.514	0	0	0.165	0
JCT-322 - Siphon	130	190	45.975	175.975	Below Maximum Depth	19.921	0	0	1.52	0
JCT-324 - Siphon	130	190	45.657	175.657	Below Maximum Depth	19.783	0	0	0.164	0
JCT-326 - Siphon	130	196	46.903	176.903	Below Maximum Depth	20.323	0	0	1.52	0
JCT-328 - Siphon	130	196	45.745	175.745	Below Maximum Depth	19.821	0	0	0.164	0
JCT-330 - Siphon	130	196	46.511	176.511	Below Maximum Depth	20.153	0	0	1.52	0
JCT-332 - Siphon	130	196	45.707	175.707	Below Maximum Depth	19.805	0	0	0.164	0
JCT-334 - Siphon	174.96	189	0.748	175.708	Below Link Crown	0.324	0	0	1.52	0
JCT-336 - Siphon	174.96	189	0.55	175.51	Below Link Crown	0.238	0	0	0.194	0
JCT-338 - Siphon	175.13	189	0.56	175.69	Below Link Crown	0.243	0	0	1.52	0
JCT-340	174.7	189	0.457	175.157	Below Link Crown	0.198	0	0	1.757	0
JCT-342	173.72	188	1.207	174.927	Below Link Crown	0.523	0	0	1.788	0
JCT-614	22.4	36.4	0	22.4	Below Link Invert	0	0	0	0	0
JCT-616	16.85	35.12	0	16.85	Below Link Invert	0	0	0	0	0
JCT-618	16.1	34.32	0	16.1	Below Link Invert	0	0	0	0	0
JCT-620	15.2	31.94	0	15.2	Below Link Invert	0	0	0	0	0
JCT-622	14.44	30.75	0	14.44	Below Link Invert	0	0	0	0	0
JCT-624	13.68	29.36	0	13.68	Below Link Invert	0	0	0	0	0
JCT-626	13.1	27.33	0	13.1	Below Link Invert	0	0	0	0	0
JCT-628	12.31	26	0	12.31	Below Link Invert	0	0	0	0	0
JCT-630	12.19	26.03	0	12.19	Below Link Invert	0	0	0	0	0
JCT-632	12.04	25.81	0	12.04	Below Link Invert	0	0	0	0	0
JCT-634	12	25.51	0	12	Below Link Invert	0	0	0	0	0
JCT-636	11.95	26.19	0	11.95	Below Link Invert	0	0	0	0	0
JCT-638	11.76	23.46	0	11.76	Below Link Invert	0	0	0	0	0
JCT-640	11.18	23.14	0	11.18	Below Link Invert	0	0	0	0	0
JCT-642	11.13	22.71	0	11.13	Below Link Invert	0	0	0	0	0
JCT-644	11.1	22.72	0	11.1	Below Link Invert	0	0	0	0	0
JCT-646	11.07	23.09	0	11.07	Below Link Invert	0	0	0	0	0
JCT-648	7.57	21.87	1.787	9.357	Below Link Crown	0.774	0	0	5.986	0
JCT-650	21.74	32.7	0.839	22.579	Below Link Crown	0.364	0	0	5.211	0
JCT_10	19.8	12.9	0.557	20.357	Below Link Crown	0.241	0	0	2.771	0
JCT_12	26.053	16.682	0.837	26.89	Below Link Crown	0.363	0	0	2.771	0
JCT_14	27.406	15.951	0.84	28.246	Below Link Crown	0.364	0	0	2.771	0
JCT_16	30.383	13.303	0.834	31.217	Below Link Crown	0.361	0	0	2.771	0
JCT_18	31.7	13.466	0.834	32.534	Below Link Crown	0.362	0	0	2.771	0
JCT_20	32.031	14.291	1.259	33.29	Below Link Crown	0.545	0	0	2.771	0

JCT_22	32.505	14.775	1.377	33.882	Below Link Crown	0.596	0	0	2.771	0
JCT_24	32.63	15.1	1.395	34.025	Below Link Crown	0.604	0	0	2.771	0
JCT_26	33.21	16.145	1.503	34.713	Below Maximum Depth	0.651	0	0	2.771	0
JCT_28	33.343	16.118	1.398	34.741	Below Link Crown	0.606	0	0	2.771	0
JCT_30	36.402	14.725	0.813	37.215	Below Link Crown	0.352	0	0	2.771	0
JCT_32	39	13.401	0.81	39.81	Below Link Crown	0.351	0	0	2.771	0
JCT_34	39.5	13.624	1.011	40.511	Below Link Crown	0.438	0	0	2.771	0
JCT_36	42	12.232	0.771	42.771	Below Link Crown	0.334	0	0	2.771	0
JCT_38	43.8	11.425	0.877	44.677	Below Link Crown	0.38	0	0	2.771	0
JCT_40	44.52	11.221	0.907	45.427	Below Link Crown	0.393	0	0	2.771	0
JCT_42	46.2	11.309	1.019	47.219	Below Link Crown	0.442	0	0	2.771	0
JCT_44	48.9	10.59	0.682	49.582	Below Link Crown	0.295	0	0	2.771	0
JCT_46	50.3	11.387	0.881	51.181	Below Link Crown	0.382	0	0	2.771	0
JCT_48	52.09	12.544	0.816	52.906	Below Link Crown	0.354	0	0	2.771	0
JCT_50	53.5	14	0.774	54.274	Below Link Crown	0.335	0	0	2.771	0
JCT_52	54.3	14.921	1.2	55.5	Below Link Crown	0.52	0	0	2.771	0
JCT_54	55	16.375	0.933	55.933	Below Link Crown	0.404	0	0	2.771	0

ID	From ID	To ID	Type	Length (ft)	Slope	Flow (mgd)	Flow Class	Depth (ft)	HGL (ft)	Velocity (ft/s)	Flow Volume (ft3)	Froude Number	Capacity d/D	Surcharged d/D	Velocity*Depth (ft2/second)	Top Width (ft)
1065	3140	2928	Circular Pipe	723.262	0.002	5.232	Free Surface	1.209	17.248	4.566	1258.302	0.768	0.737	0.691	5.522	1.617
1066	2928	2929	Circular Pipe	477.97	0.005	5.232	Free Surface	1.145	15.522	4.858	789.484	0.856	0.693	0.654	5.56	1.665
1117	1745	1746	Circular Pipe	267.121	0.003	5.979	Exceeds Capacity	1.75	11.531	3.846	642.502	0	1	1.169	6.731	0.686
1170	3138	JCT-650	Circular Pipe	40.491	0.008	5.211	Free Surface	1.315	23.147	4.16	74.612	0.648	0.806	0.725	5.469	1.563
1172	3139	3159	Circular Pipe	419.299	0.003	5.211	Free Surface	1.401	18.099	3.906	855.951	0.566	0.858	0.801	5.472	1.398
1275	2339	1005	Circular Pipe	676.946	0.001	5.986	Free Surface	1.55	4.86	3.171	1974.151	0.472	0.735	0.689	4.915	2.083
133	1580	1449	Circular Pipe	601.5	0.003	3.62	Exceeds Capacity	1.5	51.178	3.17	1062.938	0	1	3.309	4.754	0.588
1391	1582	1580	Circular Pipe	290.98	0.009	3.62	Backwater	1.5	52.005	3.17	514.205	0	1	2.694	4.754	0.588
1527	3159	3140	Circular Pipe	45.695	0	5.232	Free Surface	1.53	17.343	3.63	101.83	0.461	0.927	0.875	5.555	1.159
153	1003	1918	Circular Pipe	320.415	0	7.1	Free Surface	1.34	2.108	3.823	921.66	0.659	0.484	0.487	5.123	2.749
154	1005	1003	Circular Pipe	654.898	0.003	7.1	Free Surface	1.564	3.911	4.167	1719.484	0.581	0.839	0.782	6.519	1.651
1546	492	486	Circular Pipe	557.176	0.001	5.986	Free Surface	1.777	7.967	2.481	2079.648	0.341	0.76	0.711	4.411	2.266
2116	2324	2339	Circular Pipe	666.672	0.001	5.986	Free Surface	1.637	5.624	2.989	2065.609	0.424	0.779	0.728	4.893	2.003
2120	3066	2324	Circular Pipe	789.633	0.001	5.986	Free Surface	1.669	6.293	2.661	2747.651	0.386	0.709	0.667	4.44	2.355
3212	483	3066	Circular Pipe	539.959	0.001	5.986	Free Surface	1.736	6.698	2.547	1963.786	0.357	0.741	0.694	4.42	2.303
3240	486	485	Circular Pipe	543.467	0.001	5.986	Free Surface	1.778	7.578	2.481	2028.688	0.341	0.76	0.711	4.411	2.266
3241	413	414	Circular Pipe	516.088	0.001	5.986	Free Surface	1.77	8.707	2.493	1917.125	0.344	0.757	0.708	4.412	2.273
3242	373	1477	Circular Pipe	1298.715	0.001	5.986	Free Surface	1.816	10.284	2.426	4958.445	0.327	0.778	0.726	4.404	2.229
3243	414	492	Circular Pipe	535.302	0.001	5.986	Free Surface	1.775	8.343	2.485	1994.871	0.342	0.759	0.71	4.411	2.268
3246	405	413	Circular Pipe	315.776	0.001	5.986	Free Surface	1.769	8.931	2.494	1172.447	0.344	0.756	0.708	4.412	2.274
3258	1477	JCT-648	Circular Pipe	86.708	0.001	5.986	Free Surface	1.787	9.417	2.467	325.513	0.337	0.765	0.715	4.409	2.257
3281	1451	1458	Circular Pipe	506.619	0.005	3.775	Exceeds Capacity	1.5	43.533	3.305	895.269	0	1	2.995	4.958	0.588
3283	1164	2774	Circular Pipe	25.984	0.005	3.775	Exceeds Capacity	1.5	37.318	3.305	45.918	0	1	2.643	4.958	0.588
3449	3109	1575	Circular Pipe	69.501	0.012	0	Free Surface	0.646	56.418	0	29.633	0	0.831	1.078	0	0.327
3456	2894	3106	Circular Pipe	331.979	0.003	0	Free Surface	0	60.53	0	0.003	0	0	0	0	0
3457	3106	3107	Circular Pipe	352.978	0.004	0	Free Surface	0	59.37	0	0.003	0	0	0	0	0
3458	3107	3108	Circular Pipe	306.98	0.003	0	Free Surface	0	58.13	0	0.003	0	0	0	0	0
3459	3108	3109	Circular Pipe	314.98	0.003	0	Free Surface	0.229	57.06	0	48.403	0	0.224	0.275	0	0.744
3607	2838	1745	Circular Pipe	349.387	0.002	5.904	Exceeds Capacity	1.75	12.692	3.798	840.374	0	1	1.272	6.646	0.686
3608	2929	2838	Circular Pipe	673.05	0.003	5.232	Free Surface	1.554	13.548	3.587	1483.427	0.442	0.938	1.066	5.574	0.686
3884	1575	1578	Circular Pipe	376.319	0.002	3.026	Free Surface	1.412	56.418	2.714	644.834	0.306	0.976	0.941	3.832	0.705
3885	1578	1579	Circular Pipe	406.131	0.002	3.62	Free Surface	1.218	55.785	3.645	597.763	0.561	0.87	0.812	4.439	1.172
3888	1448	1450	Circular Pipe	413.913	0.004	3.775	Exceeds Capacity	1.5	48.868	3.305	731.445	0	1	3.249	4.958	0.588
3938	1455	3138	Circular Pipe	1057.188	0.004	5.211	Exceeds Capacity	1.5	29.376	4.562	1868.205	0	1	1.673	6.844	0.588
3984	484	483	Circular Pipe	434.966	0.001	5.986	Free Surface	1.756	7.014	2.515	1602.067	0.349	0.75	0.702	4.415	2.286
3985	485	484	Circular Pipe	258.15	0.001	5.986	Free Surface	1.771	7.198	2.492	959.539	0.343	0.757	0.708	4.412	2.272
4107	1456	1455	Circular Pipe	289.417	0.005	5.211	Exceeds Capacity	1.5	31.081	4.562	511.441	0	1	2.332	6.844	0.588
4108	1454	1456	Circular Pipe	637.016	0.005	5.211	Exceeds Capacity	1.5	34.833	4.562	1125.699	0	1	2.708	6.844	0.588
4198	1449	1448	Circular Pipe	193.994	0.004	3.775	Backwater	1.5	49.468	3.305	342.815	0	1	3.339	4.958	0.588
4229	1162	1453	Circular Pipe	378.719	0.001	3.775	Exceeds Capacity	2	36.362	1.859	1189.78	0	1	1.912	3.718	0.784
4287	1163	1162	Circular Pipe	99.992	0.001	3.775	Exceeds Capacity	2	36.504	1.859	314.135	0	1	1.933	3.718	0.784
860	2774	1163	Circular Pipe	463.574	0.001	3.775	Exceeds Capacity	2	37.164	1.859	1456.361	0	1	1.957	3.718	0.784
861	1453	1819	Circular Pipe	264.675	0.001	3.775	Exceeds Capacity	2	35.822	1.859	831.501	0	1	1.884	3.718	0.784
CDT-11	1477	JCT-14	Circular Pipe	284.369	0.002	0	Free Surface	0	9.69	0	0.003	0	0	0.893	0	0.616
CDT-13	JCT-14	JCT-16	Circular Pipe	309.419	0.002	0	Free Surface	0	9.69	0	0.003	0	0	0	0	0
CDT-137	1579	2874	Circular Pipe	243.719	0.006	3.62	Free Surface	1.225	54.451	3.624	359.225	0.553	0.875	0.916	4.441	0.831
CDT-139	2874	1581	Circular Pipe	351.114	0.005	3.62	Backwater	1.5	53.888	3.17	620.47	0	1	1.462	4.754	0.588
CDT-141	1581	1582	Circular Pipe	310.979	0.005	3.62	Backwater	1.5	52.889	3.17	549.546	0	1	1.898	4.754	0.588
CDT-143	1450	2758	Circular Pipe	411.412	0.006	3.775	Backwater	1.5	46.68	3.305	727.024	0	1	3.228	4.958	0.588
CDT-145	2758	1451	Circular Pipe	183.803	0.003	3.775	Exceeds Capacity	1.5	44.504	3.305	324.806	0	1	3.179	4.958	0.588
CDT-15	JCT-16	JCT-18	Circular Pipe	352.122	0.002	0	Free Surface	0	9.09	0	0.004	0	0	0	0	0
CDT-161	1458	1164	Circular Pipe	596.552	0.005	3.775	Exceeds Capacity	1.5	40.854	3.305	1054.195	0	1	2.809	4.958	0.588
CDT-17	JCT-18	JCT-20	Circular Pipe	363.909	0.002	0	Free Surface	0	8.39	0	0.004	0	0	0	0	0
CDT-19	JCT-20	JCT-22	Circular Pipe	262.869	0.002	0	Free Surface	0	-5.93	0	0.003	0	0	0	0	0
CDT-21	JCT-22	JCT-24	Circular Pipe	230.188	0.005	0	Free Surface	0	-6.47	0	0.002	0	0	0	0	0
CDT-23	JCT-24	OUTLET_2	Circular Pipe	340.973	0.024	0	Free Surface	0	-7.51	0	0.005	0	0	0	0	0
CDT-347	1819	1454	Circular Pipe	281.803	0.005	5.211	Backwater	2	35.446	2.566	885.311	0	1	2.049	5.133	0.784
CDT-399	1746	373	Circular Pipe	98.47	0.002	5.979	Exceeds Capacity	1.75	10.62	3.846	236.848	0	1	1.101	6.731	0.686
CDT-525	JCT-242	JCT-240	Circular Pipe	129.937	0.007	3.026	Free Surface	0.67	82.13	5.076	119.846	1.28	0.294	0.335	3.399	1.887
CDT-527	JCT-240	JCT-238	Circular Pipe	412.505	0.008	3.026	Free Surface	0.661	81.179	5.165	373.909	1.311	0.289	0.331	3.415	1.881
CDT-529	JCT-238	JCT-236	Circular Pipe	412.584	0.008	3.026	Free Surface	0.667	77.973	5.104	378.443	1.29	0.292	0.333	3.404	1.885
CDT-531	JCT-236	JCT-234	Circular Pipe	410.422	0.007	3.026	Free Surface	0.682	74.841	4.95	388.291	1.235	0.301	0.341	3.376	1.896
CDT-533	JCT-234	JCT-232	Circular Pipe	114.905	0.007	3.026	Free Surface	0.68	71.873	4.966	108.352	1.241	0.3	0.34	3.379	1.895
CDT-535	JCT-232	JCT-230	Circular Pipe	758.405	0.007	3.026	Free Surface	0.69	71.077	4.871	729.062	1.207	0.306	0.345	3.361	1.901
CDT-537	JCT-230	JCT-228	Circular Pipe	666.748	0.01	3.026	Free Surface	0.523	65.493	7.163	449.206	2.07	0.208	0.261	3.743	1.757
CDT-539	JCT-228	1575	Circular Pipe	41.924	0.073	3.026	Free Surface	0.815	58.512	3.012	70.432	0.695	0.22	0.278	2.456	2.689
CDT-541	JCT-248	JCT-246	Circular Pipe	333.392	0.012	2.908	Free Surface	0.609	94.939	6.043	248.249	1.593	0.31	0.348	3.68	1.667
CDT-543	JCT-246	JCT-244	Circular Pipe	541.703	0.012	2.908	Free Surface	0.604	90.959	6.113	398.741	1.619	0.306	0.345	3.692	1.664
CDT-545	JCT-244	JCT-242	Circular Pipe	185.428	0.013	2.908	Free Surface	0.639	84.408	5.658	147.545	1.451	0.331	0.365	3.616	1.685
CDT-547	JCT-252	JCT-250	Circular Pipe	611.302	0.012	2.586	Free Surface	0.584	104.737	5.866	416.982	1.578	0.313	0.351	3.427	1.59
CDT-549	JCT-250	JCT-248	Circular Pipe	216.677	0.012	2.586	Free Surface	0.595	97.532	5.719	151.592	1.523	0.321	0.357	3.404	1.597
CDT-551	JCT-256	JCT-254	Circular Pipe	559.071	0.011	2.586	Free Surface	0.584	117.351	5.868	381.22	1.579	0.313	0.35	3.427	1.59
CDT-553	JCT-254	JCT-252	Circular Pipe	475.745	0.013	2.586	Free Surface	0.577	111.067	5.97	318.846	1.618	0.307	0.346	3.443	1.585
CDT-555	JCT-260	JCT-258	Circular Pipe	593.76	0.012	2.586	Free Surface	0.587	130.839	5.834	407.215	1.566	0.314	0.352	3.422	1.592
CDT-557	JCT-258	JCT-256	Circular Pipe	555.566	0.012	2.586	Free Surface	0.593	123.934	5.749	386.659	1.534	0.319	0.356	3.409	1.596
CDT-559	JCT-264	JCT-262	Circular Pipe	506.992	0.012	1.69	Free Surface	0.482	143.284	5.34	248.318	1.591	0.277	0.321	2.572	1.401
CDT-561	JCT-262	JCT-260	Circular Pipe	496.528	0.013	1.69	Free Surface	0.534	137.039	4.636	280.505	1.304	0.319	0.356	2.475	1.436
CDT-563	JCT-266	JCT-264	Circular Pipe	576.483	0.012	1.69	Free Surface	0.487	150.041	5.251	287.115	1.554	0.282	0.325	2.56	1.405
CDT-565	JCT-268	JCT-266	Circular Pipe	561.7	0.012	1.685	Free Surface	0.488	156.815	5.231	279.991	1.548	0.282	0.325	2.551	1.405
CDT-567	JCT-274	JCT-272	Circular Pipe	134.493	0.019	1.685	Free Surface	0.446	162.67	5.914	59.314	1.838	0.249	0.298	2.639	1.371
CDT-569	JCT-272	JCT-270	Circular Pipe	116.675	0.014	1.685	Free Surface	0.465	160.132	5.58	54.525	1.694	0.264	0.31	2.597	1.387
CDT-571	JCT-270	JCT-268	Circular Pipe	120.073	0.014	1.685	Free Surface	0.477	158.449	5.399	57.993	1.618	0.273	0.318	2.574	1.397
CDT-573	JCT-276	JCT-274	Circular Pipe	445.147	0.01	1.685	Free Surface	0.48	167.28	5.347	217.501	1.597	0.276	0.32	2.567	1.399
CDT-575	JCT-280	JCT-278	Circular Pipe	541.695	0.013	1.685	Free Surface	0.513	195.54	5.492	257.163	1.558	0.387	0.411	2.818	1.23
CDT-577	JCT-284	JCT-282	Circular Pipe	359.819	0.012	1.685	Free Surface	0.516	201.03	5.452	172.062	1.541	0.39	0.413	2.813	1.231
CDT-579	JCT-282	JCT-280	Circular Pipe	78.788	0.014	1.685	Free Surface	0.511	196.632	5.517	37.233	1.568	0.385	0.409	2.821	1.229
CDT-581	JCT-288	JCT-286	Circular Pipe	597.224	0.014	1.685	Free Surface	0.484	221.262	5.943	262.244	1.745	0.357	0.387	2.875	1.217
CDT-583	JCT-286	JCT-284	Circular Pipe	545.486	0.022	1.685	Free Surface	0.487	212.955	5.883	241.981	1.72	0.361	0.39	2.868	1.219
CDT-585	JCT-292	JCT-290	Circular Pipe	556.951	0.015	1.685	Free Surface	0.434	237.74	6.877	211.163	2.147	0.309	0.347	2.987	1.19
CDT-587	JCT-290	JCT-288	Circular Pipe	600.547	0.014	1.685	Free Surface	0.481	229.439	5.996	261.427	1.767	0.354	0.384	2.882	1.216
CDT-593	JCT-306	JCT-292	Circular Pipe	174.548	0.008	1.685	Free Surface	0.492	239.235	5.804	78.535	1.687	0.366	0.394	2.858	1.221
CDT-595	JCT-278	JCT-310	Circular Pipe	119.359	0.008	1.685	Free Surface	0.577	188.666	4.709	66.149	1.245	0.451	0.542	2.717	1.246
CDT-597	JCT-310	JCT-312	Circular Pipe	20.487	0.002	1.685	Free Surface	0.566	187.838	4.834	11.217	1.294	0.44	0.452	2.734	1.244
CDT-599 - Siphon	JCT-312 - Siphon	JCT-316 - Siphon	Circular Pipe	5.863	0	0.165	Free Surface	0.269	187.233	1.93	0.775	0.757	0.378	0.404	0.52	0.654

CDT-601 - Siphon	JCT-312 - Siphon	JCT-314 - Siphon	Circular Pipe	5.949	0.084	1.52	Free Surface	0.529	187.233	5.583	2.484	1.514	0.536	0.529	2.951	0.998
CDT-603 - Siphon	JCT-316 - Siphon	JCT-320 - Siphon	Circular Pipe	110.225	0.003	0.165	Free Surface	0.244	187.205	2.203	12.759	0.914	0.332	4.542	0.537	0.261
CDT-605 - Siphon	JCT-314 - Siphon	JCT-318 - Siphon	Circular Pipe	110.763	0.003	1.52	Free Surface	0.715	187.224	3.914	66.377	0.845	0.765	4.129	2.799	0.392
CDT-607 - Siphon	JCT-318 - Siphon	JCT-326 - Siphon	Circular Pipe	225.563	0.18	1.52	Backwater	1	177.485	2.995	177.156	0	1	27.194	2.995	0.392
CDT-609 - Siphon	JCT-320 - Siphon	JCT-328 - Siphon	Circular Pipe	224.682	0.181	0.164	Backwater	0.667	175.801	0.729	78.429	0	1	38.66	0.486	0.261
CDT-611 - Siphon	JCT-326 - Siphon	JCT-330 - Siphon	Circular Pipe	151.92	0	1.52	Exceeds Capacity	1	176.903	2.995	119.317	0	1	46.707	2.995	0.392
CDT-613 - Siphon	JCT-328 - Siphon	JCT-332 - Siphon	Circular Pipe	152.8	0	0.164	Exceeds Capacity	0.667	175.745	0.729	53.337	0	1	68.589	0.486	0.261
CDT-615 - Siphon	JCT-330 - Siphon	JCT-322 - Siphon	Circular Pipe	207.665	0	1.52	Exceeds Capacity	1	176.511	2.995	163.1	0	1	46.243	2.995	0.392
CDT-617 - Siphon	JCT-332 - Siphon	JCT-324 - Siphon	Circular Pipe	209.03	0	0.164	Exceeds Capacity	0.667	175.707	0.729	72.965	0	1	68.523	0.486	0.261
CDT-619 - Siphon	JCT-322 - Siphon	JCT-334 - Siphon	Circular Pipe	83.796	0	1.52	Free Surface	0.874	175.975	3.231	59.303	0.543	0.927	23.362	2.824	0.392
CDT-621 - Siphon	JCT-324 - Siphon	JCT-336 - Siphon	Circular Pipe	82.201	0	0.186	Free Surface	0.608	175.657	0.861	27.008	0.161	0.957	34.655	0.524	0.261
CDT-623 - Siphon	JCT-334 - Siphon	JCT-338 - Siphon	Circular Pipe	7.153	0.028	1.52	Free Surface	0.469	175.708	6.504	2.591	1.904	0.46	0.654	3.05	0.951
CDT-625 - Siphon	JCT-336 - Siphon	JCT-338 - Siphon	Circular Pipe	6.895	0.029	-0.008	Free Surface	0.37	175.69	0.063	1.342	0.02	0.57	0.833	0.023	0.498
CDT-627	JCT-338	JCT-340	Circular Pipe	20.402	0.011	1.757	Free Surface	0.5	175.69	5.265	10.561	1.535	0.292	0.339	2.635	1.42
CDT-629	JCT-340	JCT-342	Circular Pipe	97.32	0.01	1.788	Free Surface	0.832	175.157	2.749	96.311	0.59	0.569	0.555	2.287	1.491
CDT-631	JCT-342	JCT-276	Circular Pipe	550.526	0.014	1.686	Free Surface	0.468	174.927	5.537	260.275	1.676	0.267	0.579	2.593	1.481
CDT-933	JCT-614	JCT-616	Circular Pipe	348.961	0.016	0	Free Surface	0	22.4	0	0.007	0	0	0	0	0
CDT-935	JCT-616	JCT-618	Circular Pipe	201.861	0.004	0	Free Surface	0	16.85	0	0.004	0	0	0	0	0
CDT-937	JCT-618	JCT-620	Circular Pipe	602.647	0.001	0	Free Surface	0	16.1	0	0.011	0	0	0	0	0
CDT-939	JCT-620	JCT-622	Circular Pipe	601.262	0.001	0	Free Surface	0	15.2	0	0.011	0	0	0	0	0
CDT-941	JCT-622	JCT-624	Circular Pipe	600.609	0.001	0	Free Surface	0	14.44	0	0.011	0	0	0	0	0
CDT-943	JCT-624	JCT-626	Circular Pipe	399.527	0.001	0	Free Surface	0	13.68	0	0.007	0	0	0	0	0
CDT-945	JCT-626	JCT-628	Circular Pipe	562.938	0.001	0	Free Surface	0	13.1	0	0.012	0	0	0	0	0
CDT-947	JCT-628	JCT-630	Circular Pipe	39.255	0.003	0	Free Surface	0	12.31	0	0.001	0	0	0	0	0
CDT-949	JCT-630	JCT-632	Circular Pipe	74.306	0.002	0	Free Surface	0	12.19	0	0.002	0	0	0	0	0
CDT-951	JCT-632	JCT-634	Circular Pipe	41.928	0.001	0	Free Surface	0	12.04	0	0.001	0	0	0	0	0
CDT-953	JCT-634	JCT-636	Circular Pipe	51.716	0.001	0	Free Surface	0	12	0	0.001	0	0	0	0	0
CDT-955	JCT-636	JCT-638	Circular Pipe	227.694	0.001	0	Free Surface	0	11.95	0	0.005	0	0	0	0	0
CDT-957	JCT-638	JCT-640	Circular Pipe	540.452	0.001	0	Free Surface	0	11.76	0	0.012	0	0	0	0	0
CDT-959	JCT-640	JCT-642	Circular Pipe	80.063	0.001	0	Free Surface	0	11.18	0	0.002	0	0	0	0	0
CDT-961	JCT-642	JCT-644	Circular Pipe	41.779	0.001	0	Free Surface	0	11.13	0	0.001	0	0	0	0	0
CDT-963	JCT-644	JCT-646	Circular Pipe	41.46	0.001	0	Free Surface	0	11.1	0	0.001	0	0	0	0	0
CDT-965	JCT-648	405	Circular Pipe	607.997	0.001	5.986	Free Surface	1.779	9.357	2.479	2271.44	0.34	0.761	0.712	4.41	2.264
CDT-967	JCT-646	JCT-648	Circular Pipe	299.486	0.001	0	Free Surface	0	11.07	0	0.006	0	0	0.447	0	1.988
CDT-969	JCT-650	3139	Circular Pipe	407.332	0.012	5.211	Free Surface	1.034	22.579	5.45	599.719	1.036	0.615	0.591	5.636	1.72
CDT-971	JCT-650	JCT-614	Circular Pipe	31.774	0.017	0	Free Surface	0	22.579	0	0.001	0	0	0.24	0	1.494
CDT_11	JCT_10	JCT-614	Circular Condui	67.214	0.019	2.771	Free Surface	0.746	20.357	4.887	58.985	1.126	0.496	0.497	3.645	1.5
CDT_13	JCT_12	JCT_10	Circular Condui	1055.562	0.006	2.771	Free Surface	0.697	26.89	5.333	850.322	1.282	0.455	0.465	3.717	1.496
CDT_15	JCT_14	JCT_12	Circular Condui	294.125	0.005	2.771	Free Surface	0.838	28.246	4.22	298.816	0.9	0.575	0.559	3.538	1.49
CDT_17	JCT_16	JCT_14	Circular Condui	633.972	0.005	2.771	Free Surface	0.837	31.217	4.231	642.45	0.904	0.573	0.558	3.54	1.49
CDT_19	JCT_18	JCT_16	Circular Condui	281.054	0.005	2.771	Free Surface	0.834	32.534	4.247	283.73	0.909	0.571	0.556	3.542	1.49
CDT_21	JCT_20	JCT_18	Circular Condui	267.964	0.001	2.771	Free Surface	1.047	33.29	3.257	347.44	0.587	0.745	0.698	3.408	1.378
CDT_23	JCT_22	JCT_20	Circular Condui	384.169	0.001	2.771	Free Surface	1.318	33.882	2.607	630.276	0.355	0.931	0.878	3.435	0.98
CDT_25	JCT_24	JCT_22	Circular Condui	98.036	0.001	2.771	Free Surface	1.386	34.025	2.514	167.171	0.302	0.965	0.924	3.484	0.795
CDT_27	JCT_26	JCT_24	Circular Condui	467.314	0.001	2.771	Free Surface	1.447	34.713	2.454	813	0.242	0.989	0.966	3.552	0.588
CDT_29	JCT_28	JCT_26	Circular Condui	22.875	0.006	2.771	Free Surface	1.449	34.741	2.453	39.825	0.24	0.989	0.967	3.554	0.588
CDT_31	JCT_30	JCT_28	Circular Condui	601.294	0.005	2.771	Free Surface	1.106	37.215	3.071	809.748	0.526	0.79	0.737	3.395	1.32
CDT_33	JCT_32	JCT_30	Circular Condui	503.292	0.005	2.771	Free Surface	0.812	39.81	4.393	491.134	0.958	0.552	0.541	3.565	1.495
CDT_35	JCT_34	JCT_32	Circular Condui	183	0.003	2.771	Free Surface	0.91	40.511	3.821	204.955	0.769	0.635	0.607	3.478	1.465
CDT_37	JCT_36	JCT_34	Circular Condui	411.762	0.006	2.771	Free Surface	0.891	42.771	3.92	449.265	0.802	0.619	0.594	3.493	1.473
CDT_39	JCT_38	JCT_36	Circular Condui	415.03	0.004	2.771	Free Surface	0.824	44.677	4.31	412.662	0.93	0.563	0.549	3.552	1.492
CDT_41	JCT_40	JCT_38	Circular Condui	196.098	0.004	2.771	Free Surface	0.892	45.427	3.915	214.757	0.8	0.62	0.595	3.492	1.473
CDT_43	JCT_42	JCT_40	Circular Condui	598.097	0.003	2.771	Free Surface	0.963	47.219	3.577	716.4	0.69	0.678	0.642	3.445	1.438
CDT_45	JCT_44	JCT_42	Circular Condui	290.912	0.009	2.771	Free Surface	0.85	49.582	4.147	299.585	0.876	0.585	0.567	3.527	1.486
CDT_47	JCT_44	JCT_46	Circular Condui	310.446	0.005	-2.771	Free Surface	0.782	51.181	4.605	288.826	1.03	0.527	0.521	3.599	1.499
CDT_49	JCT_48	JCT_46	Circular Condui	356.196	0.005	2.771	Free Surface	0.849	52.906	4.156	367.382	0.879	0.584	0.566	3.528	1.487
CDT_51	JCT_50	JCT_48	Circular Condui	235.308	0.006	2.771	Free Surface	0.795	54.274	4.506	223.905	0.996	0.538	0.53	3.583	1.497
CDT_53	JCT_52	JCT_50	Circular Condui	411.801	0.002	2.771	Free Surface	0.987	55.5	3.476	501.535	0.658	0.698	0.658	3.432	1.423
CDT_55	JCT_54	JCT_52	Circular Condui	356.211	0.002	2.771	Free Surface	1.066	55.933	3.191	475.624	0.566	0.76	0.711	3.403	1.36
CDT_57	1575	JCT_54	Circular Condui	27.011	0.003	2.771	Free Surface	0.898	55.942	2.413	48.019	0.529	0.251	0.299	2.165	2.747

Corral Hollow Sewer System with Phase 2 Parallel Pipeline - Manhole Report (2025)

ID	Invert Elevation (ft)	Maximum Depth (ft)	Depth (ft)	Head (ft)	Head Class	Pressure (psi)	Volume (ft3)	Lateral Inflow (mgd)	Total Inflow (mgd)	Flooding (mgd)
1003	0.42	12.08	1.688	2.108	Below Link Crown	0.731	0	0	7.1	0
1005	2.47	13.03	1.441	3.911	Below Link Crown	0.624	0	1.114	7.1	0
1162	32.505	14.775	1.062	33.567	Below Link Crown	0.46	0	0	1.961	0
1163	32.63	15.1	1.063	33.693	Below Link Crown	0.46	0	0	1.961	0
1164	33.343	16.118	0.978	34.321	Below Link Crown	0.424	0	0	1.961	0
1448	43.8	11.425	0.848	44.648	Below Link Crown	0.367	0	0	1.961	0
1449	44.52	11.221	0.727	45.247	Below Link Crown	0.315	0	0.155	1.961	0
1450	42	12.232	0.736	42.736	Below Link Crown	0.319	0	0	1.961	0
1451	39	13.401	0.774	39.774	Below Link Crown	0.336	0	0	1.961	0
1453	32.031	14.291	1.043	33.074	Below Link Crown	0.452	0	0	1.961	0
1454	30.383	13.303	0.954	31.337	Below Link Crown	0.413	0	0	3.397	0
1455	26.053	16.682	0.931	26.984	Below Link Crown	0.404	0	0	3.397	0
1456	27.406	15.951	0.959	28.365	Below Link Crown	0.416	0	0	3.397	0
1458	36.402	14.725	0.801	37.203	Below Link Crown	0.347	0	0	1.961	0
1477	7.63	11.87	1.744	9.374	Below Link Crown	0.756	0	0	3.242	0
1575	55.08	16.375	0.653	55.733	Below Link Crown	0.283	0	0	3.026	0
1578	54.3	14.921	0.9	55.2	Below Link Crown	0.39	0	0.594	1.806	0
1579	53.5	14	0.612	54.112	Below Link Crown	0.265	0	0	1.806	0
1580	46.2	11.309	0.764	46.964	Below Link Crown	0.331	0	0	1.806	0
1581	50.3	11.387	0.684	50.984	Below Link Crown	0.297	0	0	1.806	0
1582	48.9	10.59	0.539	49.439	Below Link Crown	0.233	0	0	1.806	0
1745	9.45	14.05	0.94	10.39	Below Link Crown	0.407	0	0.075	3.235	0
1746	8.61	14.89	1.259	9.869	Below Link Crown	0.545	0	0	3.235	0
1819	31.7	13.466	0.934	32.634	Below Link Crown	0.405	0	1.436	3.397	0
1918	0.33	13.49	0.992	1.322	Below Link Crown	0.43	0	0	7.1	0
2324	4.01	12.99	1.614	5.624	Below Link Crown	0.699	0	0	5.986	0
2339	3.2	15.3	1.66	4.86	Below Link Crown	0.719	0	0	5.986	0
2758	39.5	13.624	0.964	40.464	Below Link Crown	0.418	0	0	1.961	0
2774	33.21	16.145	1.064	34.274	Below Link Crown	0.461	0	0	1.961	0
2838	10.32	15.18	1.009	11.329	Below Link Crown	0.437	0	0.672	3.16	0
2874	52.09	12.544	0.634	52.724	Below Link Crown	0.275	0	0	1.806	0
2894	60.53	18.27	0	60.53	Below Link Invert	0	0	0	0	0
2928	14.591	14.287	0.613	15.204	Below Link Crown	0.266	0	0	2.488	0
2929	12.19	14.81	0.72	12.91	Below Link Crown	0.312	0	0	2.488	0
3066	4.57	10.93	1.723	6.293	Below Link Crown	0.747	0	0	5.986	0
3106	59.37	17.43	0	59.37	Below Link Invert	0	0	0	0	0
3107	58.13	16.27	0	58.13	Below Link Invert	0	0	0	0	0
3108	57.06	15.04	0	57.06	Below Link Invert	0	0	0	0	0
3109	55.96	13.94	0	55.96	Below Link Invert	0	0	0	0	0
3138	19.8	12.9	0.7	20.5	Below Link Crown	0.303	0	0	3.397	0
3139	16.87	16.23	0.768	17.638	Below Link Crown	0.333	0	0	2.467	0
3140	15.76	15.24	0.892	16.652	Below Link Crown	0.387	0	0	2.488	0
3159	15.77	14.63	0.972	16.742	Below Link Crown	0.421	0	0.021	2.488	0
373	8.44	15.06	1.314	9.754	Below Link Crown	0.569	0	0.006	3.242	0
405	7.16	11.64	1.771	8.931	Below Link Crown	0.767	0	0	5.986	0
413	6.94	10.56	1.767	8.707	Below Link Crown	0.766	0	0	5.986	0
414	6.57	9.93	1.773	8.343	Below Link Crown	0.768	0	0	5.986	0
483	4.95	10.55	1.748	6.698	Below Link Crown	0.757	0	0	5.986	0
484	5.25	11.25	1.764	7.014	Below Link Crown	0.764	0	0	5.986	0
485	5.42	11.38	1.778	7.198	Below Link Crown	0.77	0	0	5.986	0
486	5.8	11.2	1.778	7.578	Below Link Crown	0.77	0	0	5.986	0
492	6.19	10.01	1.777	7.967	Below Link Crown	0.77	0	0	5.986	0
JCT-14	9.69	9.24	0	9.69	Below Link Invert	0	0	0	0	0
JCT-16	9.09	8.89	0	9.09	Below Link Invert	0	0	0	0	0
JCT-18	8.39	8.2	0	8.39	Below Link Invert	0	0	0	0	0
JCT-20	-5.93	21.49	0	-5.93	Below Link Invert	0	0	0	0	0
JCT-22	-6.47	21.15	0	-6.47	Below Link Invert	0	0	0	0	0
JCT-228	58.18	14.32	0.332	58.512	Below Link Crown	0.144	0	0	3.026	0
JCT-230	64.78	13.22	0.713	65.493	Below Link Crown	0.309	0	0	3.026	0
JCT-232	70.41	12.59	0.667	71.077	Below Link Crown	0.289	0	0	3.026	0
JCT-234	71.18	11.52	0.693	71.873	Below Link Crown	0.3	0	0	3.026	0
JCT-236	74.17	10.91	0.671	74.841	Below Link Crown	0.291	0	0	3.026	0
JCT-238	77.31	12.69	0.663	77.973	Below Link Crown	0.287	0	0	3.026	0
JCT-24	-7.51	21.21	0	-7.51	Below Link Invert	0	0	0	0	0
JCT-240	80.52	15.48	0.659	81.179	Below Link Crown	0.286	0	0	3.026	0
JCT-242	81.45	17.35	0.68	82.13	Below Link Crown	0.295	0	0.118	3.026	0

JCT-244	83.81	17.39	0.598	84.408	Below Link Crown	0.259	0	0	2.908	0
JCT-246	90.35	15.15	0.609	90.959	Below Link Crown	0.264	0	0	2.908	0
JCT-248	94.33	15.37	0.609	94.939	Below Link Crown	0.264	0	0.322	2.908	0
JCT-250	96.95	16.05	0.582	97.532	Below Link Crown	0.252	0	0	2.586	0
JCT-252	104.15	14.85	0.587	104.737	Below Link Crown	0.254	0	0	2.586	0
JCT-254	110.5	13.5	0.567	111.067	Below Link Crown	0.246	0	0	2.586	0
JCT-256	116.75	14.25	0.601	117.351	Below Link Crown	0.261	0	0	2.586	0
JCT-258	123.35	15.65	0.584	123.934	Below Link Crown	0.253	0	0	2.586	0
JCT-260	130.25	15.75	0.589	130.839	Below Link Crown	0.255	0	0.896	2.586	0
JCT-262	136.56	14.94	0.479	137.039	Below Link Crown	0.208	0	0	1.69	0
JCT-264	142.8	14.4	0.484	143.284	Below Link Crown	0.21	0	0	1.69	0
JCT-266	149.55	14.25	0.491	150.041	Below Link Crown	0.213	0	0	1.69	0
JCT-268	156.33	15.37	0.485	156.816	Below Link Crown	0.21	0	0.005	1.69	0
JCT-270	157.98	11.02	0.469	158.449	Below Link Crown	0.203	0	0	1.685	0
JCT-272	159.67	12.33	0.462	160.132	Below Link Crown	0.2	0	0	1.685	0
JCT-274	162.24	12.76	0.43	162.67	Below Link Crown	0.186	0	0	1.685	0
JCT-276	166.75	14.25	0.53	167.28	Below Link Crown	0.23	0	0	1.687	0
JCT-278	188.16	13.84	0.506	188.666	Below Link Crown	0.219	0	0	1.685	0
JCT-280	195.02	12.48	0.52	195.54	Below Link Crown	0.225	0	0	1.685	0
JCT-282	196.13	14.07	0.502	196.632	Below Link Crown	0.218	0	0	1.685	0
JCT-284	200.5	14	0.53	201.03	Below Link Crown	0.229	0	0	1.685	0
JCT-286	212.51	7.99	0.445	212.955	Below Link Crown	0.193	0	0	1.685	0
JCT-288	220.74	9.27	0.522	221.262	Below Link Crown	0.226	0	0	1.685	0
JCT-290	229	8	0.439	229.439	Below Link Crown	0.19	0	0	1.685	0
JCT-292	237.31	8.69	0.43	237.74	Below Link Crown	0.186	0	0	1.685	0
JCT-306	238.68	4.82	0.555	239.235	Below Link Crown	0.241	0	1.685	1.685	0
JCT-310	186.99	12.01	0.848	187.838	Below Link Crown	0.368	0	0	1.685	0
JCT-312 - Siphon	186.95	12.55	0.283	187.233	Below Link Crown	0.123	0	0	1.685	0
JCT-314 - Siphon	186.45	13.05	0.774	187.224	Below Link Crown	0.335	0	0	1.52	0
JCT-316 - Siphon	186.95	12.55	0.255	187.205	Below Link Crown	0.111	0	0	0.165	0
JCT-318 - Siphon	170	25.8	7.485	177.485	Below Link Crown	3.243	0	0	1.52	0
JCT-320 - Siphon	170	25.8	5.801	175.801	Below Link Crown	2.514	0	0	0.165	0
JCT-322 - Siphon	130	60	45.975	175.975	Below Maximum Depth	19.921	0	0	1.52	0
JCT-324 - Siphon	130	60	45.657	175.657	Below Maximum Depth	19.783	0	0	0.164	0
JCT-326 - Siphon	130	66	46.903	176.903	Below Maximum Depth	20.323	0	0	1.52	0
JCT-328 - Siphon	130	66	45.744	175.744	Below Maximum Depth	19.821	0	0	0.164	0
JCT-330 - Siphon	130	66	46.511	176.511	Below Maximum Depth	20.153	0	0	1.52	0
JCT-332 - Siphon	130	66	45.706	175.706	Below Maximum Depth	19.804	0	0	0.164	0
JCT-334 - Siphon	174.96	14.04	0.748	175.708	Below Link Crown	0.324	0	0	1.52	0
JCT-336 - Siphon	174.96	14.04	0.55	175.51	Below Link Crown	0.238	0	0	0.196	0
JCT-338 - Siphon	175.13	13.87	0.56	175.69	Below Link Crown	0.243	0	0	1.52	0
JCT-340	174.7	14.3	0.457	175.157	Below Link Crown	0.198	0	0	1.755	0
JCT-342	173.72	14.28	1.207	174.927	Below Link Crown	0.523	0	0	1.788	0
JCT-614	18.5	16.38	0.759	19.259	Below Link Crown	0.329	0	0	2.744	0
JCT-616	16.85	20.65	0.812	17.662	Below Link Crown	0.352	0	0	2.744	0
JCT-618	16.1	20.6	1.073	17.173	Below Link Crown	0.465	0	0	2.744	0
JCT-620	15.2	19.12	1.135	16.335	Below Link Crown	0.492	0	0	2.744	0
JCT-622	14.44	18.69	1.141	15.581	Below Link Crown	0.494	0	0	2.744	0
JCT-624	13.68	18.06	1.087	14.767	Below Link Crown	0.471	0	0	2.744	0
JCT-626	13.1	16.61	1.015	14.115	Below Link Crown	0.44	0	0	2.744	0
JCT-628	12.31	16.07	0.951	13.261	Below Link Crown	0.412	0	0	2.744	0
JCT-630	12.19	16.22	1.042	13.232	Below Link Crown	0.451	0	0	2.744	0
JCT-632	12.04	16.18	1.131	13.171	Below Link Crown	0.49	0	0	2.744	0
JCT-634	12	15.89	1.132	13.132	Below Link Crown	0.49	0	0	2.744	0
JCT-636	11.95	16.62	1.134	13.084	Below Link Crown	0.491	0	0	2.744	0
JCT-638	11.76	14.08	1.088	12.848	Below Link Crown	0.472	0	0	2.744	0
JCT-640	11.18	14.34	1.048	12.228	Below Link Crown	0.454	0	0	2.744	0
JCT-642	11.13	13.96	0.965	12.095	Below Link Crown	0.418	0	0	2.744	0
JCT-644	11.1	14	0.893	11.993	Below Link Crown	0.387	0	0	2.744	0
JCT-646	11.07	14.4	0.564	11.634	Below Link Crown	0.244	0	0	2.744	0
JCT-648	7.57	14.3	1.787	9.357	Below Link Crown	0.774	0	0	5.986	0
JCT-650	19.407	13.293	0.783	20.19	Below Link Crown	0.339	0	0	3.397	0
JCT_10	19.8	12.9	0.446	20.246	Below Link Crown	0.193	0	0	1.814	0
JCT_12	26.053	16.682	0.652	26.705	Below Link Crown	0.283	0	0	1.814	0
JCT_14	27.406	15.951	0.655	28.061	Below Link Crown	0.284	0	0	1.814	0
JCT_16	30.383	13.303	0.65	31.033	Below Link Crown	0.282	0	0	1.814	0
JCT_18	31.7	13.466	0.651	32.351	Below Link Crown	0.282	0	0	1.814	0
JCT_20	32.031	14.291	0.974	33.005	Below Link Crown	0.422	0	0	1.814	0

JCT_22	32.505	14.775	0.979	33.484	Below Link Crown	0.424	0	0	1.814	0
JCT_24	32.63	15.1	0.975	33.605	Below Link Crown	0.422	0	0	1.814	0
JCT_26	33.21	16.145	0.977	34.187	Below Link Crown	0.423	0	0	1.814	0
JCT_28	33.343	16.118	0.846	34.189	Below Link Crown	0.367	0	0	1.814	0
JCT_30	36.402	14.725	0.636	37.038	Below Link Crown	0.276	0	0	1.814	0
JCT_32	39	13.401	0.633	39.633	Below Link Crown	0.274	0	0	1.814	0
JCT_34	39.5	13.624	0.782	40.282	Below Link Crown	0.339	0	0	1.814	0
JCT_36	42	12.232	0.606	42.606	Below Link Crown	0.262	0	0	1.814	0
JCT_38	43.8	11.425	0.679	44.479	Below Link Crown	0.294	0	0	1.814	0
JCT_40	44.52	11.221	0.702	45.222	Below Link Crown	0.304	0	0	1.814	0
JCT_42	46.2	11.309	0.775	46.975	Below Link Crown	0.336	0	0	1.814	0
JCT_44	48.9	10.59	0.54	49.44	Below Link Crown	0.234	0	0	1.814	0
JCT_46	50.3	11.387	0.686	50.986	Below Link Crown	0.297	0	0	1.814	0
JCT_48	52.09	12.544	0.638	52.728	Below Link Crown	0.276	0	0	1.814	0
JCT_50	53.5	14	0.608	54.108	Below Link Crown	0.263	0	0	1.814	0
JCT_52	54.3	14.921	0.909	55.209	Below Link Crown	0.394	0	0	1.814	0
JCT_54	55	16.375	0.718	55.718	Below Link Crown	0.311	0	0	1.814	0

ID	From ID	To ID	Type	Length (ft)	Slope	Flow (mgd)	Flow Class	Depth (ft)	HGL (ft)	Velocity (ft/s)	Flow Volume (ft3)	Froude Number	Capacity d/D	Surcharged d/D	Velocity*Depth (ft2/second)	Top Width (ft)
1065	3140	2928	Circular Condui	723.262	0.002	2.488	Free Surface	0.753	16.652	3.89	717.768	0.907	0.411	0.43	2.928	1.732
1066	2928	2929	Circular Condui	477.97	0.005	2.488	Free Surface	0.667	15.204	4.575	402.604	1.146	0.35	0.381	3.05	1.7
1117	1745	1746	Circular Condui	267.121	0.003	3.235	Free Surface	1.099	10.39	3.147	423.118	0.572	0.661	0.628	3.46	1.691
1170	3138	JCT-650	Circular Condui	40.491	0.01	3.397	Free Surface	0.741	20.5	5.421	39.257	1.276	0.403	0.423	4.017	1.729
1172	3139	3159	Circular Condui	419.299	0.003	2.467	Free Surface	0.87	17.638	3.197	500.683	0.682	0.496	0.497	2.781	1.75
1275	2339	1005	Circular Condui	676.946	0.001	5.986	Free Surface	1.55	4.86	3.171	1974.151	0.472	0.735	0.689	4.915	2.083
133	1580	1449	Circular Condui	601.5	0.003	1.806	Free Surface	0.745	46.964	3.187	527.384	0.735	0.496	0.497	2.376	1.5
1391	1582	1580	Circular Condui	290.98	0.009	1.806	Free Surface	0.651	49.439	3.797	214.664	0.951	0.416	0.434	2.473	1.487
1527	3159	3140	Circular Condui	45.695	0	2.488	Free Surface	0.932	16.742	2.954	59.539	0.603	0.542	0.533	2.755	1.746
153	1003	1918	Circular Condui	320.415	0	7.1	Free Surface	1.34	2.108	3.823	921.66	0.659	0.484	0.487	5.123	2.749
154	1005	1003	Circular Condui	654.898	0.003	7.1	Free Surface	1.564	3.911	4.167	1719.484	0.581	0.839	0.782	6.519	1.651
1546	492	486	Circular Condui	557.176	0.001	5.986	Free Surface	1.777	7.967	2.481	2079.648	0.341	0.76	0.711	4.411	2.266
2116	2324	2339	Circular Condui	666.672	0.001	5.986	Free Surface	1.637	5.624	2.989	2065.609	0.424	0.779	0.728	4.893	2.003
2120	3066	2324	Circular Condui	789.633	0.001	5.986	Free Surface	1.669	6.293	2.661	2747.651	0.386	0.709	0.667	4.44	2.355
3212	483	3066	Circular Condui	539.959	0.001	5.986	Free Surface	1.736	6.698	2.547	1963.786	0.357	0.741	0.694	4.42	2.303
3240	486	485	Circular Condui	543.467	0.001	5.986	Free Surface	1.778	7.578	2.481	2028.688	0.341	0.76	0.711	4.411	2.266
3241	413	414	Circular Condui	516.088	0.001	5.986	Free Surface	1.77	8.707	2.493	1917.125	0.344	0.757	0.708	4.412	2.273
3242	373	1477	Circular Condui	1298.715	0.001	3.242	Free Surface	1.529	9.754	1.595	4071.758	0.247	0.641	0.612	2.438	2.436
3243	414	492	Circular Condui	535.302	0.001	5.986	Free Surface	1.775	8.343	2.485	1994.871	0.342	0.759	0.71	4.411	2.268
3246	405	413	Circular Condui	315.776	0.001	5.986	Free Surface	1.769	8.931	2.494	1172.447	0.344	0.756	0.708	4.412	2.274
3258	1477	JCT-648	Circular Condui	86.708	0.001	3.242	Free Surface	1.765	9.374	1.354	321.241	0.187	0.755	0.706	2.39	2.277
3281	1451	1458	Circular Condui	506.619	0.005	1.961	Free Surface	0.788	39.774	3.226	476.464	0.717	0.532	0.525	2.542	1.498
3283	1164	2774	Circular Condui	25.984	0.005	1.961	Free Surface	1.021	34.321	2.369	33.262	0.436	0.725	0.681	2.418	1.399
3449	3109	1575	Circular Condui	69.501	0.012	0	Free Surface	0.306	55.96	0	14.931	0	0.334	0.392	0	0.813
3456	2894	3106	Circular Condui	331.979	0.003	0	Free Surface	0	60.53	0	0.003	0	0	0	0	0
3457	3106	3107	Circular Condui	352.978	0.004	0	Free Surface	0	59.37	0	0.003	0	0	0	0	0
3458	3107	3108	Circular Condui	306.98	0.003	0	Free Surface	0	58.13	0	0.003	0	0	0	0	0
3459	3108	3109	Circular Condui	314.98	0.003	0	Free Surface	0	57.06	0	0.003	0	0	0	0	0
3607	2838	1745	Circular Condui	349.387	0.002	3.16	Free Surface	0.975	11.329	3.551	480.926	0.703	0.572	0.557	3.461	1.738
3608	2929	2838	Circular Condui	673.05	0.003	2.488	Free Surface	0.865	12.91	3.251	797.35	0.696	0.492	0.494	2.81	1.75
3884	1575	1578	Circular Condui	376.319	0.002	1.212	Free Surface	0.776	55.733	2.031	347.216	0.456	0.523	0.518	1.577	1.499
3885	1578	1579	Circular Condui	406.131	0.002	1.806	Free Surface	0.756	55.2	3.129	362.661	0.715	0.505	0.504	2.367	1.5
3888	1448	1450	Circular Condui	413.913	0.004	1.961	Free Surface	0.792	44.648	3.205	391.719	0.71	0.536	0.528	2.539	1.497
3938	1455	3138	Circular Condui	1057.188	0.006	3.397	Free Surface	0.816	26.984	5.353	1036.523	1.164	0.556	0.544	4.366	1.494
3984	484	483	Circular Condui	434.966	0.001	5.986	Free Surface	1.756	7.014	2.515	1602.067	0.349	0.75	0.702	4.415	2.286
3985	485	484	Circular Condui	258.15	0.001	5.986	Free Surface	1.771	7.198	2.492	959.539	0.343	0.757	0.708	4.412	2.272
4107	1456	1455	Circular Condui	289.417	0.005	3.397	Free Surface	0.945	28.365	4.48	339.547	0.877	0.664	0.63	4.236	1.448
4108	1454	1456	Circular Condui	637.016	0.005	3.397	Free Surface	0.957	31.337	4.42	757.557	0.858	0.673	0.638	4.228	1.442
4198	1449	1448	Circular Condui	193.994	0.004	1.961	Free Surface	0.787	45.247	3.229	182.244	0.718	0.532	0.525	2.542	1.498
4229	1162	1453	Circular Condui	378.719	0.001	1.961	Free Surface	1.053	33.567	1.81	634.705	0.348	0.533	0.526	1.906	1.997
4287	1163	1162	Circular Condui	99.992	0.001	1.961	Free Surface	1.062	33.693	1.79	169.538	0.342	0.54	0.531	1.901	1.996
860	2774	1163	Circular Condui	463.574	0.001	1.961	Free Surface	1.063	34.274	1.788	786.756	0.342	0.54	0.532	1.901	1.996
861	1453	1819	Circular Condui	264.675	0.001	1.961	Free Surface	0.989	33.074	1.96	409.692	0.393	0.493	0.494	1.938	2
CDT-11	1477	JCT-14	Circular Condui	284.369	0.002	0	Free Surface	0	9.69	0	0.003	0	0	0.872	0	0.668
CDT-13	JCT-14	JCT-16	Circular Condui	309.419	0.002	0	Free Surface	0	9.69	0	0.003	0	0	0	0	0
CDT-137	1579	2874	Circular Condui	243.719	0.006	1.806	Free Surface	0.623	54.112	4.024	169.258	1.034	0.393	0.415	2.507	1.478
CDT-139	2874	1581	Circular Condui	351.114	0.005	1.806	Free Surface	0.659	52.724	3.738	262.575	0.93	0.423	0.439	2.464	1.489
CDT-141	1581	1582	Circular Condui	310.979	0.005	1.806	Free Surface	0.612	50.984	4.125	210.887	1.072	0.383	0.408	2.523	1.474
CDT-143	1450	2758	Circular Condui	411.412	0.006	1.961	Free Surface	0.85	42.736	2.937	424.298	0.621	0.585	0.567	2.496	1.486
CDT-145	2758	1451	Circular Condui	183.803	0.003	1.961	Free Surface	0.869	40.464	2.859	194.8	0.595	0.601	0.579	2.485	1.481
CDT-15	JCT-16	JCT-18	Circular Condui	352.122	0.002	0	Free Surface	0	9.09	0	0.004	0	0	0	0	0
CDT-161	1458	1164	Circular Condui	596.552	0.005	1.961	Free Surface	0.89	37.203	2.779	650.592	0.569	0.618	0.593	2.473	1.473
CDT-17	JCT-18	JCT-20	Circular Condui	363.909	0.002	0	Free Surface	0	8.39	0	0.004	0	0	0	0	0
CDT-19	JCT-20	JCT-22	Circular Condui	262.869	0.002	0	Free Surface	0	-5.93	0	0.003	0	0	0	0	0
CDT-21	JCT-22	JCT-24	Circular Condui	230.188	0.005	0	Free Surface	0	-6.47	0	0.002	0	0	0	0	0
CDT-23	JCT-24	OUTLET_2	Circular Condui	340.973	0.024	0	Free Surface	0	-7.51	0	0.005	0	0	0	0	0
CDT-347	1819	1454	Circular Condui	281.803	0.005	3.397	Free Surface	0.944	32.634	3.604	410.959	0.743	0.464	0.472	3.402	1.996
CDT-399	1746	373	Circular Condui	98.47	0.002	3.235	Free Surface	1.286	9.869	2.642	186.555	0.42	0.788	0.735	3.398	1.544
CDT-525	JCT-242	JCT-240	Circular Condui	129.937	0.007	3.026	Free Surface	0.67	82.13	5.076	119.846	1.28	0.294	0.335	3.399	1.887
CDT-527	JCT-240	JCT-238	Circular Condui	412.505	0.008	3.026	Free Surface	0.661	81.179	5.165	373.909	1.311	0.289	0.331	3.415	1.881
CDT-529	JCT-238	JCT-236	Circular Condui	412.584	0.008	3.026	Free Surface	0.667	77.973	5.104	378.443	1.29	0.292	0.333	3.404	1.885
CDT-531	JCT-236	JCT-234	Circular Condui	410.422	0.007	3.026	Free Surface	0.682	74.841	4.95	388.291	1.235	0.301	0.341	3.376	1.896
CDT-533	JCT-234	JCT-232	Circular Condui	114.905	0.007	3.026	Free Surface	0.68	71.873	4.966	108.352	1.241	0.3	0.34	3.379	1.895
CDT-535	JCT-232	JCT-230	Circular Condui	758.405	0.007	3.026	Free Surface	0.69	71.077	4.871	729.062	1.207	0.306	0.345	3.361	1.901
CDT-537	JCT-230	JCT-228	Circular Condui	666.748	0.01	3.026	Free Surface	0.523	65.493	7.163	449.206	2.07	0.208	0.261	3.743	1.757
CDT-539	JCT-228	1575	Circular Condui	41.924	0.073	3.026	Free Surface	0.472	58.512	6.558	30.72	2.022	0.101	0.164	3.098	2.222
CDT-541	JCT-248	JCT-246	Circular Condui	333.392	0.012	2.908	Free Surface	0.609	94.939	6.043	248.249	1.593	0.31	0.348	3.68	1.667
CDT-543	JCT-246	JCT-244	Circular Condui	541.703	0.012	2.908	Free Surface	0.604	90.959	6.113	398.741	1.619	0.306	0.345	3.692	1.664
CDT-545	JCT-244	JCT-242	Circular Condui	185.428	0.013	2.908	Free Surface	0.639	84.408	5.658	147.545	1.451	0.331	0.365	3.616	1.685
CDT-547	JCT-252	JCT-250	Circular Condui	611.302	0.012	2.586	Free Surface	0.584	104.737	5.866	416.982	1.578	0.313	0.351	3.427	1.59
CDT-549	JCT-250	JCT-248	Circular Condui	216.677	0.012	2.586	Free Surface	0.595	97.532	5.719	151.592	1.523	0.321	0.357	3.404	1.597
CDT-551	JCT-256	JCT-254	Circular Condui	559.071	0.011	2.586	Free Surface	0.584	117.351	5.868	381.22	1.579	0.313	0.35	3.427	1.59
CDT-553	JCT-254	JCT-252	Circular Condui	475.745	0.013	2.586	Free Surface	0.577	111.067	5.97	318.846	1.618	0.307	0.346	3.443	1.585
CDT-555	JCT-260	JCT-258	Circular Condui	593.76	0.012	2.586	Free Surface	0.587	130.839	5.834	407.214	1.566	0.314	0.352	3.422	1.592
CDT-557	JCT-258	JCT-256	Circular Condui	555.566	0.012	2.586	Free Surface	0.593	123.934	5.749	386.659	1.534	0.319	0.356	3.409	1.596
CDT-559	JCT-264	JCT-262	Circular Condui	506.992	0.012	1.69	Free Surface	0.482	143.284	5.34	248.319	1.591	0.277	0.321	2.572	1.401
CDT-561	JCT-262	JCT-260	Circular Condui	496.528	0.013	1.69	Free Surface	0.534	137.039	4.636	280.505	1.304	0.319	0.356	2.475	1.436
CDT-563	JCT-266	JCT-264	Circular Condui	576.483	0.012	1.69	Free Surface	0.487	150.041	5.251	287.116	1.554	0.282	0.325	2.56	1.405
CDT-565	JCT-268	JCT-266	Circular Condui	561.7	0.012	1.69	Free Surface	0.488	156.815	5.241	280.296	1.55	0.282	0.325	2.558	1.405
CDT-567	JCT-274	JCT-272	Circular Condui	134.493	0.019	1.685	Free Surface	0.446	162.67	5.914	59.313	1.838	0.249	0.298	2.639	1.371
CDT-569	JCT-272	JCT-270	Circular Condui	116.675	0.014	1.685	Free Surface	0.465	160.132	5.58	54.525	1.694	0.264	0.31	2.597	1.387
CDT-571	JCT-270	JCT-268	Circular Condui	120.073	0.014	1.685	Free Surface	0.477	158.449	5.393	58.058	1.616	0.274	0.318	2.573	1.397
CDT-573	JCT-276	JCT-274	Circular Condui	445.147	0.01	1.685	Free Surface	0.48	167.28	5.347	217.501	1.597	0.276	0.32	2.567	1.399
CDT-575	JCT-280	JCT-278	Circular Condui	541.695	0.013	1.685	Free Surface	0.513	195.54	5.492	257.163	1.558	0.387	0.411	2.818	1.23
CDT-577	JCT-284	JCT-282	Circular Condui	359.819	0.012	1.685	Free Surface	0.516	201.03	5.452	172.062	1.541	0.39	0.413	2.813	1.231
CDT-579	JCT-282	JCT-280	Circular Condui	78.788	0.014	1.685	Free Surface	0.511	196.632	5.517	37.233	1.568	0.385	0.409	2.821	1.229
CDT-581	JCT-288	JCT-286	Circular Condui	597.224	0.014	1.685	Free Surface	0.484	221.262	5.943	262.244	1.745	0.357	0.387	2.875	1.217
CDT-583	JCT-286	JCT-284	Circular Condui	545.486	0.022	1.685	Free Surface	0.487	212.955	5.883	241.981	1.72	0.361	0.39	2.868	1.219
CDT-585	JCT-292	JCT-290	Circular Condui	556.951	0.015	1.685	Free Surface	0.434	237.74	6.877	211.163	2.147	0.309	0.347	2.987	1.19
CDT-587	JCT-290	JCT-288	Circular Condui	600.547	0.014	1.685	Free Surface	0.481	229.439	5.996	261.427	1.767	0.354	0.384	2.882	1.216
CDT-593	JCT-306	JCT-292	Circular Condui	174.548	0.008	1.685	Free Surface	0.492	239.235	5.804	78.535	1.687	0.366	0.394	2.858	1.221
CDT-595	JCT-278	JCT-310	Circular Condui	119.359	0.008	1.685	Free Surface	0.577	188.666	4.709	66.149	1.245	0.451	0.542	2.717	1.246
CDT-597	JCT-310	JCT-312	Circular Condui	20.487	0.002	1.685	Free Surface	0.566	187.838	4.834	11.217	1.294	0.44	0.452	2.734	1.244
CDT-599 - Siphon	JCT-312 - Siphon	JCT-316 - Siphon	Circular Condu	5.863	0	0.165	Free Surface	0.269	187.233	1.93	0.775	0.757	0.378	0.404	0.52	0.654

CDT-601 - Siphon	JCT-312 - Siphon	JCT-314 - Siphon	Circular Condu	5.949	0.084	1.52	Free Surface	0.529	187.233	5.583	2.484	1.514	0.536	0.529	2.951	0.998
CDT-603 - Siphon	JCT-316 - Siphon	JCT-320 - Siphon	Circular Condu	110.225	0.003	0.165	Free Surface	0.244	187.205	2.203	12.759	0.914	0.332	4.542	0.537	0.261
CDT-605 - Siphon	JCT-314 - Siphon	JCT-318 - Siphon	Circular Condu	110.763	0.003	1.52	Free Surface	0.715	187.224	3.914	66.377	0.845	0.765	4.129	2.799	0.392
CDT-607 - Siphon	JCT-318 - Siphon	JCT-326 - Siphon	Circular Condu	225.563	0.18	1.52	Backwater	1	177.485	2.995	177.156	0	1	27.194	2.995	0.392
CDT-609 - Siphon	JCT-320 - Siphon	JCT-328 - Siphon	Circular Condu	224.682	0.181	0.164	Backwater	0.667	175.801	0.729	78.429	0	1	38.659	0.486	0.261
CDT-611 - Siphon	JCT-326 - Siphon	JCT-330 - Siphon	Circular Condu	151.92	0	1.52	Exceeds Capacity	1	176.903	2.995	119.317	0	1	46.707	2.995	0.392
CDT-613 - Siphon	JCT-328 - Siphon	JCT-332 - Siphon	Circular Condu	152.8	0	0.164	Exceeds Capacity	0.667	175.744	0.729	53.337	0	1	68.587	0.486	0.261
CDT-615 - Siphon	JCT-330 - Siphon	JCT-322 - Siphon	Circular Condu	207.665	0	1.52	Exceeds Capacity	1	176.511	2.995	163.1	0	1	46.243	2.995	0.392
CDT-617 - Siphon	JCT-332 - Siphon	JCT-324 - Siphon	Circular Condu	209.03	0	0.164	Exceeds Capacity	0.667	175.706	0.729	72.965	0	1	68.522	0.486	0.261
CDT-619 - Siphon	JCT-322 - Siphon	JCT-334 - Siphon	Circular Condu	83.796	0	1.52	Free Surface	0.874	175.975	3.231	59.303	0.543	0.927	23.362	2.824	0.392
CDT-621 - Siphon	JCT-324 - Siphon	JCT-336 - Siphon	Circular Condu	82.201	0	0.186	Free Surface	0.609	175.657	0.863	27.015	0.161	0.957	34.655	0.525	0.261
CDT-623 - Siphon	JCT-334 - Siphon	JCT-338 - Siphon	Circular Condu	7.153	0.028	1.52	Free Surface	0.469	175.708	6.506	2.591	1.905	0.46	0.654	3.05	0.951
CDT-625 - Siphon	JCT-336 - Siphon	JCT-338 - Siphon	Circular Condu	6.895	0.029	-0.01	Free Surface	0.37	175.69	0.078	1.342	0.025	0.57	0.833	0.029	0.497
CDT-627	JCT-338	JCT-340	Circular Condui	20.402	0.011	1.755	Free Surface	0.5	175.69	5.263	10.551	1.535	0.292	0.339	2.632	1.42
CDT-629	JCT-340	JCT-342	Circular Condui	97.32	0.01	1.788	Free Surface	0.832	175.157	2.749	96.311	0.59	0.569	0.555	2.287	1.491
CDT-631	JCT-342	JCT-276	Circular Condui	550.526	0.014	1.687	Free Surface	0.468	174.927	5.538	260.277	1.676	0.267	0.579	2.593	1.481
CDT-933	JCT-614	JCT-616	Circular Condui	348.961	0.005	2.744	Free Surface	0.785	19.259	4.059	365.055	0.923	0.435	0.449	3.188	1.74
CDT-935	JCT-616	JCT-618	Circular Condui	201.861	0.004	2.744	Free Surface	0.942	17.662	3.215	266.255	0.651	0.549	0.539	3.03	1.745
CDT-937	JCT-618	JCT-620	Circular Condui	602.647	0.001	2.744	Free Surface	1.104	17.173	2.656	963.087	0.481	0.665	0.631	2.932	1.689
CDT-939	JCT-620	JCT-622	Circular Condui	601.262	0.001	2.744	Free Surface	1.138	16.335	2.564	995.478	0.454	0.688	0.65	2.918	1.669
CDT-941	JCT-622	JCT-624	Circular Condui	600.609	0.001	2.744	Free Surface	1.114	15.581	2.628	970.11	0.473	0.672	0.637	2.928	1.683
CDT-943	JCT-624	JCT-626	Circular Condui	399.527	0.001	2.744	Free Surface	1.051	14.767	2.814	602.6	0.529	0.627	0.601	2.958	1.714
CDT-945	JCT-626	JCT-628	Circular Condui	562.938	0.001	2.744	Free Surface	0.983	14.115	2.762	865.413	0.555	0.489	0.492	2.716	1.999
CDT-947	JCT-628	JCT-630	Circular Condui	39.255	0.003	2.744	Free Surface	0.996	13.261	2.715	61.385	0.541	0.498	0.498	2.706	2
CDT-949	JCT-630	JCT-632	Circular Condui	74.306	0.002	2.744	Free Surface	1.086	13.232	2.436	129.504	0.459	0.555	0.543	2.646	1.992
CDT-951	JCT-632	JCT-634	Circular Condui	41.928	0.001	2.744	Free Surface	1.131	13.171	2.317	76.833	0.425	0.583	0.566	2.621	1.982
CDT-953	JCT-634	JCT-636	Circular Condui	51.716	0.001	2.744	Free Surface	1.133	13.132	2.314	94.908	0.424	0.584	0.566	2.62	1.982
CDT-955	JCT-636	JCT-638	Circular Condui	227.694	0.001	2.744	Free Surface	1.111	13.084	2.369	408.071	0.44	0.571	0.555	2.632	1.987
CDT-957	JCT-638	JCT-640	Circular Condui	540.452	0.001	2.744	Free Surface	1.068	12.848	2.487	922.564	0.474	0.543	0.534	2.657	1.995
CDT-959	JCT-640	JCT-642	Circular Condui	80.063	0.001	2.744	Free Surface	1.006	12.228	2.681	126.773	0.531	0.504	0.503	2.698	2
CDT-961	JCT-642	JCT-644	Circular Condui	41.779	0.001	2.744	Free Surface	0.929	12.095	2.972	59.684	0.619	0.455	0.464	2.761	1.995
CDT-963	JCT-644	JCT-646	Circular Condui	41.46	0.001	2.744	Free Surface	0.729	11.993	4.102	43.211	0.986	0.329	0.364	2.989	1.925
CDT-965	JCT-648	405	Circular Condui	607.997	0.001	5.986	Free Surface	1.779	9.357	2.479	2271.44	0.34	0.761	0.712	4.41	2.264
CDT-967	JCT-646	JCT-648	Circular Condui	299.486	0.012	2.744	Free Surface	1.176	11.634	2.212	552.424	0.395	0.611	0.588	2.6	1.969
CDT-969	JCT-650	3139	Circular Condui	407.332	0.007	2.467	Free Surface	0.711	20.19	4.158	374.01	1.003	0.382	0.443	2.957	1.738
CDT-971	JCT-614	JCT-650	Circular Condui	31.774	0.008	-0.93	Free Surface	0.556	20.19	2.189	21.538	0.607	0.273	0.44	1.217	1.738
CDT_11	JCT_10	JCT-614	Circular Condui	67.214	0.019	1.814	Free Surface	0.602	20.246	4.231	44.911	1.11	0.375	0.401	2.548	1.47
CDT_13	JCT_12	JCT_10	Circular Condui	1055.562	0.006	1.814	Free Surface	0.549	26.705	4.79	621.498	1.326	0.332	0.366	2.63	1.445
CDT_15	JCT_14	JCT_12	Circular Condui	294.125	0.005	1.814	Free Surface	0.654	28.061	3.796	217.45	0.949	0.418	0.436	2.481	1.487
CDT_17	JCT_16	JCT_14	Circular Condui	633.972	0.005	1.814	Free Surface	0.653	31.033	3.804	467.762	0.952	0.418	0.435	2.482	1.487
CDT_19	JCT_18	JCT_16	Circular Condui	281.054	0.005	1.814	Free Surface	0.651	32.351	3.818	206.595	0.957	0.416	0.434	2.484	1.487
CDT_21	JCT_20	JCT_18	Circular Condui	267.964	0.001	1.814	Free Surface	0.812	33.005	2.873	261.153	0.626	0.553	0.542	2.333	1.495
CDT_23	JCT_22	JCT_20	Circular Condui	384.169	0.001	1.814	Free Surface	0.976	33.484	2.305	467.721	0.44	0.689	0.651	2.25	1.43
CDT_25	JCT_24	JCT_22	Circular Condui	98.036	0.001	1.814	Free Surface	0.977	33.605	2.304	119.446	0.44	0.689	0.651	2.25	1.429
CDT_27	JCT_26	JCT_24	Circular Condui	467.314	0.001	1.814	Free Surface	0.976	34.187	2.306	568.855	0.44	0.689	0.651	2.25	1.43
CDT_29	JCT_28	JCT_26	Circular Condui	22.875	0.006	1.814	Free Surface	0.912	34.189	2.497	25.694	0.502	0.636	0.608	2.276	1.464
CDT_31	JCT_30	JCT_28	Circular Condui	601.294	0.005	1.814	Free Surface	0.741	37.038	3.226	523.379	0.746	0.492	0.494	2.39	1.5
CDT_33	JCT_32	JCT_30	Circular Condui	503.292	0.005	1.814	Free Surface	0.635	39.633	3.945	358.086	1.003	0.403	0.423	2.503	1.482
CDT_35	JCT_34	JCT_32	Circular Condui	183	0.003	1.814	Free Surface	0.707	40.282	3.424	150.119	0.815	0.464	0.472	2.422	1.497
CDT_37	JCT_36	JCT_34	Circular Condui	411.762	0.006	1.814	Free Surface	0.694	42.606	3.512	329.349	0.847	0.452	0.462	2.436	1.496
CDT_39	JCT_38	JCT_36	Circular Condui	415.03	0.004	1.814	Free Surface	0.642	44.479	3.883	300.025	0.98	0.409	0.428	2.494	1.484
CDT_41	JCT_40	JCT_38	Circular Condui	196.098	0.004	1.814	Free Surface	0.69	45.222	3.533	155.766	0.854	0.449	0.46	2.44	1.495
CDT_43	JCT_42	JCT_40	Circular Condui	598.097	0.003	1.814	Free Surface	0.738	46.975	3.241	517.929	0.752	0.49	0.492	2.393	1.5
CDT_45	JCT_44	JCT_42	Circular Condui	290.912	0.009	1.814	Free Surface	0.657	49.44	3.769	217.215	0.939	0.421	0.438	2.477	1.488
CDT_47	JCT_44	JCT_46	Circular Condui	310.446	0.005	-1.814	Free Surface	0.613	50.986	4.132	211.105	1.073	0.384	0.409	2.532	1.474
CDT_49	JCT_48	JCT_46	Circular Condui	356.196	0.005	1.814	Free Surface	0.662	52.728	3.734	267.811	0.926	0.425	0.441	2.472	1.49
CDT_51	JCT_50	JCT_48	Circular Condui	235.308	0.006	1.814	Free Surface	0.623	54.108	4.042	163.363	1.039	0.393	0.415	2.518	1.478
CDT_53	JCT_52	JCT_50	Circular Condui	411.801	0.002	1.814	Free Surface	0.758	55.209	3.131	368.997	0.714	0.507	0.506	2.375	1.5
CDT_55	JCT_54	JCT_52	Circular Condui	356.211	0.002	1.814	Free Surface	0.813	55.718	2.868	348.275	0.624	0.554	0.542	2.333	1.495
CDT_57	1575	JCT_54	Circular Condui	27.011	0.003	1.814	Free Surface	0.685	55.733	2.307	32.862	0.585	0.172	0.228	1.581	2.518

APPENDIX F

Storm Drainage System Constraints and Recommendations

Technical Memorandum

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

To: Mr. Majeed Mohamed, City of Tracy

From: Mr. Harvey Oslick, PE, Wood Rodgers, Inc.

Date: January 4, 2023

Subject: Storm Drainage System Constraints and Recommendations for D22-0018 Tru by Hilton

Purpose

This Technical Memorandum (TM) provides a summary of key drainage constraints and related recommendations for the development project D22-0018 Tru by Hilton (Project) located at 22393 Corral Hollow Road in the City of Tracy (City). This Project proposes development on a 1.96-acre property situated on Assessor's Parcel Number (APN) 214-020-09 that will include a new four-story Tru by Hilton Hotel. A detailed evaluation of the local drainage conditions was presented to the City in a TM dated September 30, 2022.

The preliminary plan for the Project shows an underground infiltration system to meet stormwater quality requirements. However, the applicant has not demonstrated that underground infiltration will be feasible. Therefore, the Project will be conditioned to demonstrate to the satisfaction of the City Engineer that underground infiltration is feasible; otherwise, an alternative means to meet stormwater quality requirements will need to be proposed in order for the City to approve Project construction.

Key Drainage Constraints

1. The maximum hydraulic grade line in the storm drain at Grant Line Road that is master planned to receive runoff from the Project is higher than minimum finished grade elevations.
2. The site is planned to be drained through a private 8-inch-diameter pipe. The invert of the existing 8-inch pipe may be above some parts of the storm drainage system proposed for the Project site.
3. The site will need to be designed for the 100-year storm in order to be contained on the site without overland release because the overland release path from the site flows into a different watershed as defined by the Citywide Storm Drainage Master Plan.
4. Groundwater levels and/or soil permeability may impact the feasibility of using infiltration to meet stormwater quality requirements.

City Standards

1. Section 5 of the *City of Tracy Design Standards* applies to the Project, including the *Citywide Storm Drainage Master Plan* and the *Multi-Agency Post-Construction Stormwater Standards Manual*, by reference.

2. Section 5.03 of the Design Standards requires that hydrology and hydraulic calculations be provided for the 10-year and 100-year storms in order to determine flow rates and hydraulic grade lines. (Due to the drainage constraints, the required calculations will be more complicated than is typically necessary for small development projects.)

3. Section 3.1 of the *Multi-Agency Post-Construction Stormwater Standards Manual* states, *"Groundwater conditions at the project site must be evaluated prior to selecting, siting, sizing, and design of stormwater control measures. The seasonal high depth to groundwater beneath the project site may preclude infiltration if less than ten (10) feet of separation is maintained between the lowest flowline or invert elevation of an infiltration structure. In all cases and if approved by the jurisdictional Agency, at least five (5) feet of separation must be maintained between the flow line of an infiltration structure and the seasonal high groundwater or mounded groundwater levels."*

4. Section 7.2 of the *Multi-Agency Post-Construction Stormwater Standards Manual* presents hydromodification management requirements for projects that create and/or replace one acre or more of impervious surface. Due to numerous factors, including the Project's location near the downstream end of the master-planned drainage area, the drainage system discharging into an engineered channel (Byron Bethany Irrigation District Main Drain) and the ultimate receiving water being the tidally-influenced Old River, application of standard hydromodification management requirements would not be beneficial.

Recommendations

1. The Project either should be conditioned to demonstrate to the satisfaction of the City Engineer that infiltration is feasible and that the concept shown on the Project's Preliminary Plan meets the requirements of the *Multi-Agency Post Construction Stormwater Standards Manual*, otherwise, the applicant must provide an alternative drainage and stormwater quality treatment configuration that meets the City's Design Standards.

2. It should be noted in the Project Conditions of Approval that a stormwater pump system and flow-through planter configuration will be required in order to meet the City's Design Standards unless the applicant demonstrates to the satisfaction of the City Engineer that the configuration shown on the Preliminary Plans (or an alternative configuration) meets all of the applicable requirements.

3. Appropriate calculations will need to be provided with the Project's Design Plans in order to demonstrate that the hydraulic grade lines on the Project will meet the drainage constraints.

4. The Project should be conditioned to provide a maintenance plan for the site drainage system and to maintain the system in perpetuity.